



# Sustainable Rice Platform

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## **Standard on Sustainable Rice Cultivation**

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Version 1.0

October 2015

[www.sustainablerice.org](http://www.sustainablerice.org)

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### **Disclaimer**

The views expressed in this document are purely those of the authors and may not in any circumstance be regarded as stating an official position of the organizations involved.

### **The Sustainable Rice Platform (SRP)**

SRP is a global multi-stakeholder alliance co-convened by UNEP and IRRI in 2011, comprising 29 institutional stakeholders, including public and private sector stakeholders, research, financial institutions and NGOs. SRP promotes resource-use efficiency and climate change resilience in rice systems—both on-farm and throughout value chains—and pursues voluntary market transformation initiatives by developing sustainable production standards, indicators, incentive mechanisms, and outreach mechanisms to boost wide-scale adoption of sustainable best practices throughout rice value chains. SRP's goal is to minimize environmental impacts of rice production and consumption while enhancing smallholder incomes and contributing to food security.

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## The Sustainable Rice Platform

MEMBERSHIP AUGUST 2015

No	Organization	Organization type	Membership category
1	UNEP	UN Agency	Co-convener
2	IRRI	Research	Co-convener
3	Aidenvironment	Not-for-profit	Full in-kind
4	Ahold B.V.	For-profit	Full paid
5	BASF South East Asia	For-profit	Full paid
6	Bayer	For-profit	Full paid
7	Cambodia Ministry of Agriculture, Forestry, and Fisheries	Government	Full in-kind
8	GIZ	Govt-owned company	Full in-kind
9	Indonesia Directorate General of Food Crops	Government	Full in kind
10	International Fertilizer Industry Association (IFA)	Not-for-profit	Full in-kind
11	International Finance Corporation (IFC)	For-profit	Full paid
12	Kellogg's	For-profit	Full paid
13	Loc Troi Group (LT Group), Vietnam	For-profit	Full paid
14	Louis Dreyfus Commodities	For-profit	Full paid
15	Mars Foods	For-profit	Full paid
16	Nestlé Paddy Rice Club, Malaysia	Not-for-profit	Full in-kind
17	Network for Aquaculture Centres in Asia and the Pacific	Not-for-profit	Full in-kind
18	Olam International	For-profit	Full paid
19	Punjab Agricultural University, India	Academic	Full in-kind
20	Rainforest Alliance	Not-for-profit	Full in-kind
21	Solidaridad	Not-for-profit	Full in-kind
22	Sri Lanka Department of Agriculture/Rice R&D Institute	Government/Research	Full in-kind
23	Syngenta	For profit	Full paid
24	Thailand Rice Department	Government/Research	Full in-kind
25	UTZ Certified	Not-for-profit	Full in-kind
26	Van Sillevoldt Rijst B.V.	For-profit	Observer
27	Vietnam Ministry of Agriculture and Rural Development	Government	Full in-kind
28	Vredeseilanden/VECO	Not-for-profit	Full in-kind
29	Wildlife Conservation Society	Not-for-profit	Full in-kind

## Introduction

The Sustainable Rice Platform (SRP) is a global multi-stakeholder partnership to promote sustainable rice cultivation. The SRP currently has 26 institutional members, including the United Nations Environment Programme (UNEP), the International Rice Research Institute (IRRI), government agencies, private-sector actors, research institutions, and not-for-profit organizations.

By the end of 2016, the SRP will aim to offer the global rice supply chain a proven set of instruments to facilitate wide-scale adoption of sustainable best practices in the global rice sector. Such instruments may include standards, guidelines, analysis tools, training modules, outreach models, and incentive mechanisms. Figure 1 below shows the linkages among these instruments.

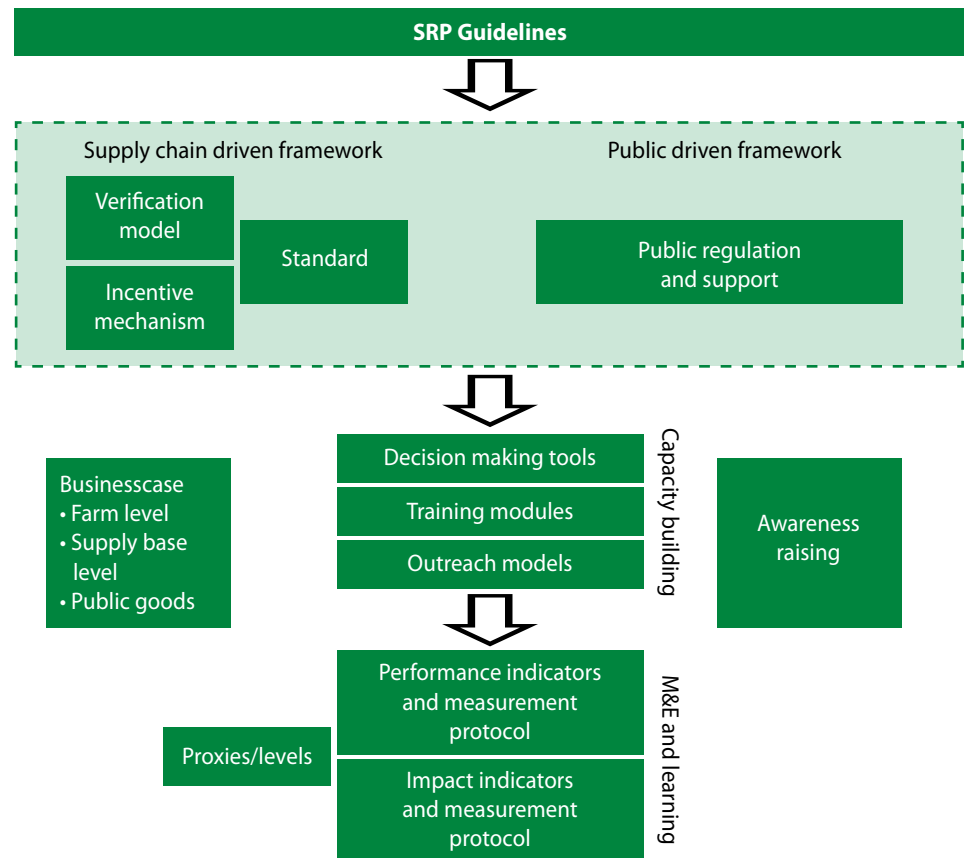


Figure 1. Overview of SRP instruments.

The SRP is currently focusing on three closely interlinked instruments:

- 1) SRP Guidelines for Sustainable Rice Cultivation
- 2) SRP Performance Indicators for Sustainable Rice Cultivation
- 3) SRP Standard for Sustainable Rice Cultivation

**The SRP's Guidelines for Sustainable Rice Cultivation** were developed through an intensive consultation process with SRP members and external stakeholders, and were approved at the SRP's 3rd Annual Plenary (25-26 November 2013). The Guidelines provide an overall framework for sustainable best practice, comprising eight principles, 32 criteria, and more than 160 recommended practices. However, recognizing the importance of agro-ecological context and the diversity of production models, the Guidelines should not be considered as a prescriptive set of practices. Instead, they are intended as a tool to guide choices and as a foundation for the development of quantitative decision-making tools, training modules, and outreach materials.

Given the importance of measuring the sustainability impacts of recommended practices, the SRP established a working group to define key sustainability criteria based on the Guidelines, and generate a set of **SRP Performance Indicators for Sustainable Rice Cultivation**. This framework allows researchers to collect benchmark data and communicate field-level outcomes in a consistent way. The **SRP Performance Indicators** are shown in Table 1 below.

**Table 1. SRP Performance Indicators.**

1. Profitability: net income from rice	5. Total water productivity	9. Greenhouse gas emissions
2. Labor productivity	6. Nutrient-use efficiency: N	10. Health and safety
3. Productivity: grain yield	7. Nutrient-use efficiency: P	11. Child labor
4. Food safety	8. Pesticide-use efficiency	12. Women's empowerment

Although the SRP Guidelines provide a comprehensive framework, a concise normative framework is also needed that can be used in supply chain projects to serve as a practical basis for verifying any claim to sustainability performance. The SRP Standard for Sustainable Rice Cultivation provides such a framework, complemented by SRP Performance Indicators to allow quantitative assessment. Together, these tools can permit compliant users to make a sustainability claim once targets have been agreed.

## The SRP Standard for Sustainable Rice Cultivation

Throughout the development process, stakeholders have emphasized the importance of keeping the SRP Standard concise and focused on priority topics in order to ensure relevance, and practical application, especially for small-scale farmers. The SRP Standard for Sustainable Rice Cultivation contains 46 requirements, based on priorities defined in the Performance Indicators, complemented with some priority topics that are essential for potential destination markets. The requirements are structured under eight themes (see Fig. 2).

Each requirement in the Standard contributes to one or more of the SRP's eight Guiding Principles. These relationships are made explicit in the impact column of the Standard. Table 2 presents the links between the requirements of the Standard and impacts stated in the SRP's eight Guiding Principles.

**Table 2. Relationships between the requirements in the SRP Standard and the SRP Guiding Principles.**

Requirements in Standard	Impacts (SRP Guiding Principles)
Productivity, yield	1. Improve livelihoods of current and future generations of rice growers
Food safety	2. Meet consumer needs for food security, food safety, and quality of rice and rice products
Water, nutrients, pesticides	3. Manage natural resources efficiently
Biodiversity	4. Protect the natural environment from disruptive effects
Community	5. Protect neighboring communities from disruptive effects and contribute to their development
GHG	6. Mitigate greenhouse gas emissions and adapt rice production systems to a changing climate
Health and safety, labor rights, child labor	7. Respect labor rights and promote the well-being of workers
Not applicable	8. Conduct business with integrity and transparency

Although the Standard does not refer explicitly to Guiding Principle 8 on business integrity and transparency, the standards' requirements refer to legislation and record keeping throughout.

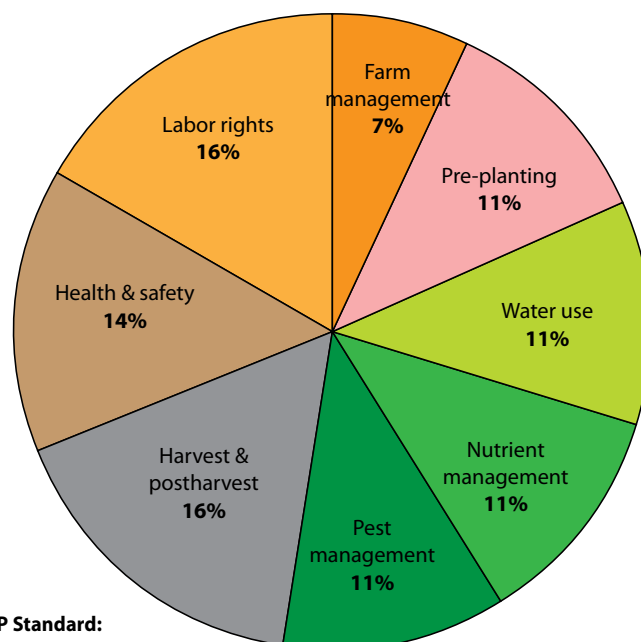
## Scope

The SRP Standard applies to rice production, including postharvest processes, which are still in control of the farmer. The SRP Standard can be applied by individual farmers, smallholder groups, or larger farms. If applied by a group of smallholders, the Standard suggests the establishment of a Group Management System, whose requirements will be developed according to an assurance mechanism that is appropriate to the local/national production environment; these are to be identified at a later stage.

## Scoring

The Standard allows for stepwise compliance in order to encourage and reward progress toward full compliance. Most requirements have several possible levels of performance to allow use of the Standard both for assessment and as a directional improvement tool to promote farmer adoption. These different levels are developed in full recognition that improving farmer performance takes time and can be a challenging process. Having different levels of performance enable guiding the improvement process and providing recognition of each improvement step with a higher score.

Each level of performance corresponds to a number of points. The highest performance level in most requirements scores 3 points. Some requirements have additional intermediate performance levels with 2 points or 1 point. All requirements have made explicit the lowest level of performance, scoring zero points. There are a few exceptions to the maximum scores per requirement. Requirement 15 on nutrient management has a maximum of 6 points and all requirements in the health and safety sector have a maximum score of 2 points. These changes have been made in order to obtain a balanced weighting over the different themes. The relative weighting per theme is presented in Figure 2.



**Figure 2. The SRP Standard: theme weighting.**

The total score of a farmer on the Standard is presented on a 0–100 scale. This score is based on the total number of points a farmer has scored, divided by the maximum number of points that can be scored.

$$\text{Score on Standard (0–100)} = \frac{\text{Total number of points corresponding to actual performance}}{\text{Maximum number of points possible}} \times 100$$

Certain requirements may be nonapplicable in some farm contexts; these will be excluded from the scoring. Nonapplicability may exist in the following cases:

- When a farmer produces under rainfed conditions (no irrigation), requirements 11, 12, 13, and 14 will not apply.
- When a farmer does not dry his/her rice himself/herself, requirement 27 will not apply.
- When a farmer does not store his/her rice, requirement 28 will not apply.
- When a farmer has no children below the age of 18 working on the farm, requirement 41 will not apply.
- When a farmer has no children of school age, requirement 42 will not apply.
- When a farmer has no hired workers, requirements 43, 44, 45, and 46 will not apply.

## Claims

The SRP Standard supports two objectives:

### 1. *Promoting improvement*

The SRP recognizes that improving sustainability performance is a journey that itself deserves recognition. However, improvement must be ongoing in order to maintain a claim of improvement.

### 2. *Defining what is sustainable*

The SRP Standard enables users to claim that rice is “sustainably cultivated.” It recognizes that such a claim should correspond to a certain level of performance. To support this claim, the SRP has defined for each requirement an essential performance level that should be achieved before a claim can be made. This is indicated for each requirement by an asterisk (\*) next to the level of performance. The SRP also recognizes that some flexibility in performance should be allowed, taking into account the different contexts, farmer capacities, and priorities.

In line with this, the SRP Standard adopts the following two claims:

Claim*	Conditions
Working toward sustainable rice cultivation	<ul style="list-style-type: none"> <li>- A farmer scores between 10 and 99, but does not meet the essential performance level of one or more requirements.</li> <li>- A farmer has increased his/her score by 10 points compared with the previous year.</li> </ul>
Sustainably cultivated rice	<ul style="list-style-type: none"> <li>- A farmer scores at least 90 and meets all essential performance levels for all applicable requirements.</li> </ul>

\* Note that any communication about the claim should be based on a certain level of assurance. The SRP will develop the guidelines on assurance and communication in due course.

If all requirements apply, all essential performance levels add up to a score of 67. The farmer is free to choose what requirements are used to bridge the gap to 90 or beyond. Figure 3 (next page) shows the scoring and claiming mechanism schematically.

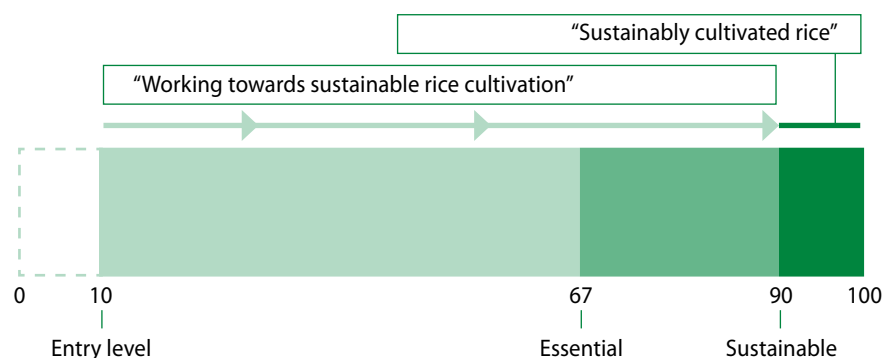


Figure 3. SRP scoring and claims.

## Consultative process and next steps

Following an online consultation for members and selected stakeholders (19 January–6 February 2015), all proposed changes were discussed during a Standard and Indicators Technical Workshop held in Bangkok on 16–17 February 2015. This first public version (Version 1.0) of the Standard and Indicators represents the outcome of this Workshop, and is now to be released for field-testing. SRP members and external stakeholders will test the Standard and Indicators with farmers in diverse agro-ecological contexts over a period of one to two crop cycles in order to allow the establishment of a normative framework including realistic and quantitative targets. The outcomes will provide crucial data to be used in refining and extending the Standard to establish optional and mandatory requirements, as well as quantitative targets, within the compliance regime.

The current Standard is intended as a practice-based instrument that will be validated through multi-country farmer field trials. It is anticipated that future revisions will stipulate voluntary and mandatory levels of compliance for each requirement. In the meantime, the SRP Guidelines and Criteria remain a valuable publicly accessible repository and reference point for sustainable best practices.

## List of definitions

Alternate wetting and drying (AWD)	A water-saving technology to reduce irrigation water use in rice fields by applying intermittent irrigation either on a fixed day interval basis or on the basis of SMP (soil matric potential), using tensiometers or soil pressure potential (using a field water tube).
Deforestation	Direct human-induced conversion of forested land to nonforested land.
Group	A group of farmers organized in an association or cooperative or managed by a supply chain actor (such as an exporter) or another entity.
Farm	All land and facilities used for agricultural production and processing activities covered by a single management entity and using the same operational procedures.
Farmer	The person or organization responsible for management of the farm.



Integrated pest management (IPM)	An ecosystem management approach to keep pest populations below economically damaging levels while minimizing hazards to humans, animals, plants, and the environment. This is achieved through a combination of techniques such as the use of resistant varieties, conservation of natural enemies through habitat modification and minimization/avoidance of pesticide application, and modification of cultural practices.
Obsolete pesticides	Pesticides unfit for further use. This may be the case if a product has been de-registered locally or banned internationally. More commonly, however, a stock of pesticides becomes obsolete because of long-term storage, during which the product and/or its packaging degrade.
Pesticides	Insecticides, fungicides, herbicides, disinfectants, rodenticides, molluscicides, and any other substances or mixture of substances intended for preventing, destroying, or controlling any pest, including unwanted species of plants, animals, or microorganisms, causing harm during production, processing, storage, transportation, or marketing of food or other agricultural commodities.
Preharvest interval	The time interval permitted between the final pesticide application in the season and the date of harvest of treated crops or in the treated area.
Primary forest	A primary forest is a forest that has never been logged and that has developed following natural disturbances and under natural processes, regardless of its age. "Direct human disturbance" refers to intentional clearing of forest by any means (including fire) to manage or alter the landscape for human use. Also included as primary forests are forests used inconsequentially by indigenous and local communities living traditional lifestyles relevant for the conservation and sustainable use of biological diversity (source: FAO: <a href="http://www.cbd.int/forest/definitions.shtml">www.cbd.int/forest/definitions.shtml</a> ).
Protected area	A clearly defined geographic space, recognized, dedicated, and managed through legal or other effective means, to achieve the long-term conservation of nature with associated ecosystem services and cultural values. Examples include national parks, wilderness areas, community-conserved areas, and nature reserves.
Re-entry time	The safe minimum number of days following pesticide application when it is safe to re-enter the sprayed area without protective equipment.
Risk assessment	A systematic process for identifying and evaluating hazards. Hazards can be identified in an external environment (e.g., economic trends, climatic events, competition) and within an internal environment (e.g., people, process, infrastructure). When these hazards interfere with objectives—or can be predicted to do so—they become risks.
Secondary forest	A secondary forest is a forest that has been logged and has recovered naturally or artificially. It also includes degraded forest, which is a secondary forest that has lost, through human activities, the structure, function, species composition, or productivity normally associated with a natural forest type expected on that site (source: FAO: <a href="http://www.cbd.int/forest/definitions.shtml">www.cbd.int/forest/definitions.shtml</a> ).
Water body	Any significant accumulation (natural or artificial) of water, including, for example, lakes, lagoons, ponds, reservoirs, wetlands, rivers, streams, and canals.
Worker	A person who performs work on a farm or for a group or a group member. This definition covers all types of workers, including permanent, temporary, migrant, transitory, household members, and piece workers, whether paid or unpaid family members.

# SRP Standard on Sustainable Rice Cultivation<sup>1,2</sup>

No.	Impact	Requirement	Level(s) of compliance	Points
<b>Farm management</b>				
1	Profitability Yield	<p><b>Crop calendar</b></p> <p>For each crop cycle, a crop calendar is made in advance, and updated throughout the crop cycle to adapt to changing circumstances. The crop calendar includes both of the following elements:</p> <ul style="list-style-type: none"> <li>- Timing of operations such as land preparation (plowing, harrowing, and leveling), planting, crop rotation, weeding, pest management, water management, fertilizing, harvesting, drying, and storage.</li> <li>- Estimation of required labor, equipment, inputs, and finance for each operation.</li> </ul> <p>Illiterate farmers on small-scale farms are able to explain the above verbally.</p>	<p>a) There is a crop calendar, it is updated throughout the crop cycle, and it includes both of the listed elements. <input type="checkbox"/>3</p> <p>b) There is a crop calendar, it is updated throughout the crop cycle, but it includes only the first element (timing of operations). <input type="checkbox"/>2</p> <p>c) There is a crop calendar, but it is not updated throughout the crop cycle. <input type="checkbox"/>1*</p> <p>d) There is no crop calendar. <input type="checkbox"/>0</p>	
2	Profitability Yield	<p><b>Record keeping</b></p> <p>Per crop cycle and per plot records (if applicable) are kept of</p> <ul style="list-style-type: none"> <li>- seed variety (name/vendor/date/quantity in kg/ha)</li> <li>- yield (kg/ha)</li> <li>- pesticide use (product/trade name/vendor/date/quantity in kg/ha)</li> <li>- fertilizer use (product/trade name/vendor/date/quantity in kg/ha) and application method</li> <li>- measured or calculated water use<sup>3</sup> (date/quantity in kg of harvested paddy/liters of water input)</li> <li>- costs (including labor), income, and profitability of all farm products</li> <li>- machinery operations until point of sale (expressed in either [1] fuel use in L/ha or [2] time of machinery operations' use in machine-hours/ha)</li> </ul>	<p>a) Records are kept of all applicable topics. <input type="checkbox"/>3</p> <p>b) Records are kept of all applicable topics, minus one. <input type="checkbox"/>2</p> <p>c) Records are kept of all applicable topics, minus two. <input type="checkbox"/>1</p> <p>d) No records are kept. <input type="checkbox"/>0*</p>	

<sup>1</sup> Discrepancies may occur between requirements under the Standard and national or regional law. In such cases, the stricter of the two requirements shall be held to apply, unless explicitly stated otherwise.

<sup>2</sup> If contracted labor is used, the contracting party (smallholder, group management, or large farm) will remain responsible for compliance by the contractor.

<sup>3</sup> Water use is measured as follows:

- For rainwater: rain gauge.

- For pumped groundwater: flow meters at pump or calibrated pump.

- For surface water: flow data from managers of irrigation schemes or flow-measuring devices, such as weirs.

No.	Impact	Requirement	Level(s) of compliance	Points
3	All areas	<b>Training</b>  The farmer attends training or regularly seeks professional advice on the following topics: <ul style="list-style-type: none"> <li>- Farm (group) management</li> <li>- Land preparation</li> <li>- Water management</li> <li>- Nutrient management</li> <li>- Pest management</li> <li>- Food safety</li> <li>- Postharvest operations (including crop residue management)</li> <li>- Health and safety</li> <li>- Human rights</li> <li>- Gender issues</li> </ul> A farmer who does not have access to training or professional advice participates in information exchange with other farmers or within farmer organizations.	a) The farmer followed training, sought professional advice, or participated in information exchange on at least six of the listed topics in the last 5 years. □3  b) The farmer followed training, sought professional advice, or participated in information exchange on at least four of the listed topics in the last 5 years. □2  c) The farmer followed training, sought professional advice, or participated in information exchange on at least two of the listed topics in the last 5 years. □1  d) The farmer followed training, sought professional advice, or participated in information exchange on fewer than two of the listed topics in the last 5 years. □0*	
<b>Preplanting</b>				
4	Food safety	<b>Heavy metals</b>  The soil is safe from heavy metals such as arsenic, cadmium, chromium, mercury, and lead.	a) There is documented proof that the soil is safe from heavy metals by at least one of the following methods: <ul style="list-style-type: none"> <li>- A (group) risk assessment shows no possible risks from heavy metals.</li> <li>- A (group) soil test shows no evidence of any heavy metals.</li> <li>- Any reliable external proof of absence of heavy metals.</li> </ul> b) Heavy metals are known/shown to occur in the soil, but approved soil remediation techniques are implemented, and individual farm tests conducted at the end of every crop cycle show that any heavy metal contamination in the milled grain is below maximum acceptable values, as set by WHO/Codex. □2*  c) Not a or b. □0	
5	Profitability Yield Water	<b>Salinity</b>  Soil salinity is effectively managed by the following mitigation/adaptation measures: <ul style="list-style-type: none"> <li>- management of salinity through maintained water pressure in the field</li> <li>- monitoring of salinity in field water</li> <li>- management of inflow/outflow in quantity and timing to avoid excess salinity and excess water use</li> <li>- selection of salinity-tolerant varieties</li> <li>- expert advice and subsequent action</li> </ul>	a) Documentary proof, not older than 3 years, that there is no risk of soil salinity or showing soil salinity to be of acceptable level, using at least one of the following methods: <ul style="list-style-type: none"> <li>- A (group) risk assessment shows no risks.</li> <li>- A (group) soil, water, or leaf analysis shows an acceptably low salinity level (e.g., max 5 g/L).</li> <li>- Any reliable external proof of acceptably low salinity level.</li> </ul> b) There is (risk of) salinity, but appropriate mitigation/adaptation measures are taken. □2*  c) Not a or b. □0	

No.	Impact	Requirement	Level(s) of compliance	Points
6	GHG Biodiversity	<b>Land conversion</b>  There is no farming <ul style="list-style-type: none"> <li>- in primary forest</li> <li>- on land that was deforested after 2009, unless there is a legal permit or authorization</li> <li>- in secondary forest, unless there is a legal permit or authorization, and activities do not harm the ecosystem</li> <li>- in a protected area, unless there is a legal permit or authorization, and activities do not harm the ecosystem</li> </ul>	a) There is no farming in any of the listed areas. b) Farming is practiced in any of the listed areas.	<input type="checkbox"/> 3* <input type="checkbox"/> 0
7	Biodiversity	<b>Invasive species</b>  No invasive species (e.g., water hyacinth or golden apple snail) have been introduced.	a) No invasive species are introduced. b) Invasive species are introduced.	<input type="checkbox"/> 3* <input type="checkbox"/> 0
8	Profitability Yield Water Biodiversity	<b>Leveling</b>  Rice is cultivated on flat land or on terraces. The land or terraces are leveled, up to 0.1% within-plot slope. If available, flat land is leveled by laser.  If rice is cultivated on sloping land without terraces, soil conservation practices must be used (e.g., contour farming, cover cropping, and installation of erosion barriers).	In case of flat land or terraces: a) Proof that land is sufficiently leveled or land has been leveled less than 3 years ago. b) Land has been leveled more than 3 years ago. c) Land has not been leveled.  In case of sloping land without terraces: d) Soil conservation practices are used (e.g., contour farming, cover cropping, and installation of erosion barriers). e) No soil conservation practices are used.	<input type="checkbox"/> 3 <input type="checkbox"/> 2* <input type="checkbox"/> 0  <input type="checkbox"/> 2* <input type="checkbox"/> 0
9	Profitability Yield	<b>Seed variety</b>  Seed variety is pure and free of weeds, pests, and diseases.	a) Farmer buys certified seed with ID and traceability. b) Farmer buys or produces seed with quality control (varietal purity, weed-free, germination testing, safe storage, fungal control). c) Farmer uses self-saved seeds, for a maximum of three crop cycles and with quality control (safe storage + roguing in the field before harvest). d) Farmer buys uncertified seeds without quality control or uses self-saved seeds for more than three crop cycles or without quality control.	<input type="checkbox"/> 3 <input type="checkbox"/> 3 <input type="checkbox"/> 2* <input type="checkbox"/> 0
<b>Water use</b>				
10	Profitability Yield Water GHG	<b>Water management</b>  Measures are in place to enhance water-use efficiency, as appropriate to the local production system category (1–3).		



No.	Impact	Requirement	Level(s) of compliance	Points
12	Food safety Water	<b>Inbound water quality</b>  Inbound water is obtained from clean sources that are free of biological, saline, and heavy metal contamination.	a) There is no irrigation system. b) Documented proof, not older than 3 years, that the inbound water is obtained from clean sources by at least one of the following methods: - a risk assessment for water quality shows no risks of contamination - a water sample analysis shows no contamination beyond official national or regional levels. c) In case of (risks of) contaminated water, mitigation measures are taken to reduce the potential impact of contaminated water (e.g., selection of alternative varieties or installation of a filtration system). d) Not a, b, or c.	<input type="checkbox"/> n/a <input type="checkbox"/> 3       <input type="checkbox"/> 1*       <input type="checkbox"/> 0
13	Water Community	<b>Water extraction</b>  Water extraction is legal and sustainable.  Sustainable water extraction avoids depletion of water resources beyond the watershed recharge capacity, and balances the competition for its use.	a) There is no irrigation system. b) Water extraction is in compliance with sustainable water extraction licensing policies. c) In the absence of a sustainable water extraction licensing policy: - a risk assessment shows there are no risks of unsustainable water extraction, or - there is active participation in watershed management and community water infrastructure projects, or - within the past 3 years, professional advice on sustainable water use is sought and followed. d) Not a, b, or c.	<input type="checkbox"/> n/a <input type="checkbox"/> 3       <input type="checkbox"/> 3*       <input type="checkbox"/> 0
14	Water Biodiversity	<b>Drainage</b>  Subsurface drainage after surface application of agrochemicals is sufficiently delayed to avoid contamination from agrochemical runoff.	a) There is no drainage. b) Drainage, but no use of agrochemicals. c) Drainage is delayed after surface application of agrochemicals at least 4 days for fertilizers and 14 days for pesticides, unless stated otherwise on the product label. d) Drainage is delayed after surface application of agrochemicals, but for fewer days for a valid reason, for example, snail management or unexpected rainfall. e) Drainage is not delayed after surface application of agrochemicals, or for fewer days, and for no valid reason.	<input type="checkbox"/> n/a <input type="checkbox"/> 3 <input type="checkbox"/> 3       <input type="checkbox"/> 2*       <input type="checkbox"/> 0

No.	Impact	Requirement	Level(s) of compliance	Points
<b>Nutrient management</b>				
15	Profitability Yield Nutrients GHG Biodiversity	<b>Nutrient management</b>  Efficient and site-specific nutrient management is applied, including the following elements: <ul style="list-style-type: none"> <li>- use of natural systems of soil fertility enhancement (e.g., crop rotation and intercropping)</li> <li>- fertilizer application is based on results from soil analysis or crop nutrition assessments (e.g., leaf color chart)</li> <li>- fertilizer application is based on a documented nutrient plan following recommendations from public or private extension services</li> <li>- split application of nitrogen fertilizers or use of slow- or controlled-release fertilizers (deep placement)</li> </ul>	a) Compliance with all four listed elements. b) Compliance with three of the listed elements. c) Compliance with two of the listed elements. d) Compliance with none of the listed elements.	<input type="checkbox"/> 6 <input type="checkbox"/> 4*  <input type="checkbox"/> 2 <input type="checkbox"/> 0
16	Profitability Yield Nutrients GHG	<b>Organic fertilizer</b>  Organic material is used as fertilizer if the conditions are favorable: <ul style="list-style-type: none"> <li>- it is available on-farm (e.g., animal manure, green manure, mulch) or available locally for a reasonable price, and</li> <li>- there are non-flooded fields where it can be applied, and</li> <li>- it is well decomposed.</li> </ul>	a) All three listed favorable conditions are present, and organic material is used as fertilizer. b) One or more of the three listed favorable conditions is lacking, and organic material is not used as fertilizer. c) Not a or b.	<input type="checkbox"/> 3  <input type="checkbox"/> 3*  <input type="checkbox"/> 0
17	Profitability Yield Nutrients	<b>Inorganic fertilizer choice</b>  Inorganic fertilizers can be used only if they are registered and come from a trustworthy source.	a) There is no use of inorganic fertilizers. b) Inorganic fertilizers are registered and come from a trustworthy source. c) Not a or b.	<input type="checkbox"/> 3 <input type="checkbox"/> 3*  <input type="checkbox"/> 0
18	Profitability Yield Nutrients	<b>Inorganic fertilizer use</b>  Application method of inorganic fertilizers is in accordance with label instructions, and dosage and timing are in accordance with site-specific recommendations.	a) There is no use of inorganic fertilizers. b) Application method is in accordance with label instructions, and dosage and timing are in accordance with site-specific recommendations. c) Not a or b.	<input type="checkbox"/> 3 <input type="checkbox"/> 3*  <input type="checkbox"/> 0
<b>Pest management</b>				
19	Profitability Yield Food safety Pesticides Biodiversity	<b>Integrated pest management (IPM)</b>  Principles of IPM are applied, which include: <ul style="list-style-type: none"> <li>- evaluating pest and damage levels regularly (scouting)</li> <li>- evaluating all available pest control options</li> <li>- using action thresholds recommended by local government extension experts</li> <li>- selecting a crop protection method that maximizes human safety, minimizes environmental impact, is economically justifiable, and prevents food safety risks for all crops.</li> </ul> IPM combines non-chemical control methods and rational pesticide use. This includes biodiversity-based integrated pest management as part of crop protection activities.  On the following pages are listed, for six different types of pests, the preferred non-chemical methods of pest management and the conditions for appropriate use of chemical methods.	<i>Overall pesticide score</i> a) <b>Good IPM:</b> The farmer applies IPM principles as articulated on left: 3 points for each of the six pest requirements listed on the following pages. b) <b>Intermediate IPM:</b> A farmer can demonstrate that, in addressing pest infestations, he has evaluated all pest control options and has applied a range of control measures that include the non-chemical: at least 2 points for each of the six pest requirements listed. c) <b>Basic IPM:</b> The farmer understands the basic IPM principles and possesses basic knowledge of relevant cultural practices, beneficial organisms, and measuring pest pressure: at least 1 point for each of the six pest requirements listed. d) <b>Unsustainable pest management:</b> One or more zero scores for each of the six pest requirements listed.	<input type="checkbox"/> 3  <input type="checkbox"/> 2*  <input type="checkbox"/> 1  <input type="checkbox"/> 0

No.	Impact	Requirement	Level(s) of compliance	Points
19.1		<p><i>Weed management</i></p> <p>Non-chemical options for weed control include:</p> <ul style="list-style-type: none"> <li>- Good land preparation</li> <li>- Flooding</li> <li>- Mechanical weeding</li> <li>- Manual weeding</li> <li>- Biological control agents</li> </ul> <p>Appropriate herbicide application follows IPM principles and meets all of the following criteria:</p> <ol style="list-style-type: none"> <li>1. When feasible, non-chemical methods are used.</li> <li>2. Herbicide is applied only if non-chemical methods are not sufficiently effective on their own.</li> <li>3. It is applied during early crop growth stage, before the rice canopy closes and when weeds are small.</li> <li>4. An appropriate herbicide is used for the type of weed problem (choice of mode of action).</li> <li>5. Local information about herbicide-resistant weeds is used when choosing an appropriate herbicide.</li> </ol>	<p><i>Weed management</i></p> <p>a) Farmer applies IPM principles and meets all five criteria mentioned if herbicide is used. <input type="checkbox"/>3</p> <p>b) Farmer meets criteria 1, 2, 3, and 4 if herbicide is used. <input type="checkbox"/>2</p> <p>c) Farmer meets criteria 1, 2, and 3 if herbicide is used. <input type="checkbox"/>1</p> <p>d) Farmer does not meet criteria 1, 2, and 3 if herbicide is used. <input type="checkbox"/>0</p>	<p><i>Sub-score</i></p> <p><input type="checkbox"/>3</p> <p><input type="checkbox"/>2</p> <p><input type="checkbox"/>1</p> <p><input type="checkbox"/>0</p>
19.2		<p><i>Insect management</i></p> <p>Non-chemical insect control methods include:</p> <ul style="list-style-type: none"> <li>- Synchronized planting</li> <li>- Use of resistant/tolerant varieties</li> <li>- Promotion of beneficial natural enemies (e.g., insects, spiders) by avoiding insecticide use</li> <li>- Promotion of other predators (e.g., birds, bats, frogs)</li> <li>- Crop rotation or extended fallow period</li> <li>- Balanced nutrient application (avoiding excessive use of nitrogen)</li> <li>- Biological control agents such as Metarhizium, Beauveria</li> </ul> <p>Appropriate insecticide application follows IPM principles and meets all of the following criteria:</p> <ol style="list-style-type: none"> <li>1. When feasible, non-chemical methods are used.</li> <li>2. Insecticide is applied only if non-chemical methods are not sufficiently effective on their own.</li> <li>3. It is applied only if the presence of a specific pest at high density has been confirmed and damage is high (not preventively; apply action thresholds if locally available).</li> <li>4. It is applied more than 40 days after sowing (exceptions to the latter are acceptable if following IPM recommendations by local government extension experts).</li> </ol>	<p><i>Insect management</i></p> <p>a) Farmer applies IPM principles without the use of chemical insecticides. <input type="checkbox"/>3</p> <p>b) Farmer applies principles of IPM and meets all 4 criteria mentioned if insecticide is used. <input type="checkbox"/>1</p> <p>c) Farmer does not meet criteria 1, 2, 3, and 4 if insecticide is used. <input type="checkbox"/>0</p>	<p><i>Sub-score</i></p> <p><input type="checkbox"/>3</p> <p><input type="checkbox"/>1</p> <p><input type="checkbox"/>0</p>



No.	Impact	Requirement	Level(s) of compliance		Points
19.3		<p><i>Disease management</i></p> <p>Non-chemical disease management options include (effective for fungal, bacterial, and viral diseases):</p> <ul style="list-style-type: none"><li>- Use of resistant varieties</li><li>- Synchronized planting</li><li>- Removal host plants (weeds on bunds, rice stubble, or volunteer rice)</li><li>- Keeping the environment between soil and plant canopy either dry or moist (depending on the disease)</li><li>- Planting at low densities</li><li>- Balanced nutrient application (avoiding excessive use of nitrogen)</li><li>- Biological control agents, for example, Trichoderma</li></ul> <p>Appropriate chemical disease management follows IPM principles and meets all of the following criteria:</p> <ol style="list-style-type: none"><li>1. When feasible, non-chemical methods are used.</li><li>2. A chemical is applied only if non-chemical methods are not sufficiently effective on their own.</li><li>3. Fungicide application should not be used after heading (within 35 days of harvest).</li><li>4. Fungicide application should be used only in scenarios with high risk of fungal disease (according to recent history and predicted weather patterns).</li></ol>	<p><i>Disease management</i></p> <p>a) Farmer applies IPM principles and meets all four criteria mentioned if fungicide is used.</p> <p>b) Farmer meets criteria 1, 2, and 3 if fungicide is used.</p> <p>c) Farmer does not meet criteria 1, 2, and 3 if fungicide is used.</p>	<p><i>Sub-score</i></p> <p><input type="checkbox"/>3</p> <p><input type="checkbox"/>1</p> <p><input type="checkbox"/>0</p>	
19.4		<p><i>Mollusc management</i></p> <p>Non-chemical mollusc control options include:</p> <ul style="list-style-type: none"><li>- Physical control (destruction of egg masses, hand-picking of snails, baiting and capturing, maintaining saturation without standing water during the vulnerable period)</li><li>- Promotion of predators (e.g., wild birds, ducks)</li><li>- Use of sturdier seedlings during transplanting by sowing low-density nursery beds and planting older seedlings</li><li>- Crop rotation or extended dry fallow period</li></ul> <p>Appropriate use of molluscicides (chemical or organic) follows IPM principles and meets all of the following criteria:</p> <ol style="list-style-type: none"><li>1. When feasible, non-chemical methods are used.</li><li>2. Molluscicide is applied only if non-chemical methods are not sufficiently effective on their own.</li><li>3. Used only within the first 3 weeks after crop establishment.</li><li>4. Should not be used before manual transplanting (worker safety).</li></ol>	<p><i>Mollusc management</i></p> <p>a) Farmer practices IPM principles and meets all four criteria mentioned if molluscicide is used.</p> <p>b) Farmer meets criteria 1, 2, and 3 if molluscicide is used.</p> <p>c) Farmer does not meet criteria 1, 2, and 3 if molluscicide is used.</p>	<p><i>Sub-score</i></p> <p><input type="checkbox"/>3</p> <p><input type="checkbox"/>1</p> <p><input type="checkbox"/>0</p>	

No.	Impact	Requirement	Level(s) of compliance	Points	
19.5		<p><i>Rodent management</i></p> <p>Non-chemical rodent control options include:</p> <ul style="list-style-type: none"><li>- Synchronized planting</li><li>- Community rodent management, for example, rat eradication campaigns, and trap crops</li><li>- Trapping</li><li>- Hunting</li><li>- Use of narrow bunds (minimize rodent habitat)</li><li>- Promotion of predators (birds of prey, snakes)</li></ul> <p>Appropriate rodenticide use follows principles of IPM and meets all of the following criteria:</p> <ol style="list-style-type: none"><li>1) When feasible, non-chemical methods are used.</li><li>2) Rodenticide is applied only if non-chemical methods are not sufficiently effective on their own.</li><li>3) Only in response to current or historical evidence of rodent problems.</li><li>4) Appropriate timing is to manage rodents during the vegetative growth phase of the crop so that they don't produce an outbreak during grain filling.</li><li>5) Rodenticides should be placed under protective cover, for example, bamboo tubes or coconut husks, where they are not easily accessible to birds or exposed to rainfall.</li></ol>	<p><i>Rodent management</i></p> <p>a) Farmer applies IPM principles and meets all five criteria mentioned if rodenticide is used.</p> <p>b) Farmer meets criteria 1, 2, 3, and 4 if rodenticide is used.</p> <p>c) Farmer does not meet criteria 1, 2, 3, and 4 if rodenticide is used, or electric wiring is used to control rodents.</p>	<p>Sub-score</p> <p><input type="checkbox"/>3</p> <p><input type="checkbox"/>1</p> <p><input type="checkbox"/>0</p>	
19.6		<p><i>Bird management</i></p> <p>Non-lethal bird control options include:</p> <ul style="list-style-type: none"><li>- Synchronized planting</li><li>- Scare/deterrent devices</li><li>- Promotion of predators (e.g., birds of prey, shrikes)</li></ul>	<p><i>Bird management</i></p> <p>a) Bird pests are managed without use of lethal control.</p> <p>b) Bird pests are managed by live trapping and all non-pest species are released alive.</p> <p>c) Birds are indiscriminately persecuted by killing, poisoning, or hunting.</p>	<p>Sub-score</p> <p><input type="checkbox"/>3</p> <p><input type="checkbox"/>1</p> <p><input type="checkbox"/>0</p>	
20	Pesticides Food safety Health and safety Biodiversity	<p><b>Pesticide selection</b></p> <p>Purchased pesticides, including biologicals,</p> <ul style="list-style-type: none"><li>- are used in line with national government recommendations,</li><li>- are registered for use in rice,</li><li>- come from a trustworthy source, and</li><li>- are not on any of the following international lists:</li></ul> <ul style="list-style-type: none"><li>• Persistent Organic Pollutants (POPs) in the Stockholm Convention</li><li>• Annex III of the Rotterdam Convention</li><li>• 1A or 1B under World Health Organization (WHO) classification.</li></ul> <p>Crude farm-produced biopesticides are allowed:</p> <ul style="list-style-type: none"><li>- if not harmful to the environment and human health,</li><li>- if produced on-farm and not purchased, and</li><li>- if proven to be effective.</li></ul>	<p>a) There is no use of pesticides.</p> <p>b) Compliance with all of the listed elements for purchased or farm-produced pesticides.</p> <p>c) Non-compliance with one or more of the listed elements for purchased or farm-produced pesticides.</p>	<p><input type="checkbox"/>3</p> <p><input type="checkbox"/>3*</p> <p><input type="checkbox"/>0</p>	

No.	Impact	Requirement	Level(s) of compliance	Points
21	Pesticides Health and safety Biodiversity Community	<b>Targeted application</b>  Pesticides are not applied: <ul style="list-style-type: none"> <li>- on non-target areas</li> <li>- within 5 meters of occupied buildings, roads, or pathways unless there is no threat to humans or wildlife</li> <li>- within 5 meters of water bodies (including main irrigation channels)</li> <li>- within 1 meter of small diversion canals</li> <li>- within 5 meters of protected areas</li> <li>- during strong winds</li> <li>- in case of aerial spraying: without a license and without using drift minimization techniques</li> </ul>	a) There is no use of pesticides. b) Compliance with all listed conditions. c) Non-compliance with one or more of the listed conditions.	<input type="checkbox"/> 3 <input type="checkbox"/> 3* <input type="checkbox"/> 0
22	Pesticides Food safety Health and safety Biodiversity	<b>Label instructions</b>  Each pesticide application is in accordance with label instructions on application method, preharvest interval, and dosage.	a) There is no use of pesticides. b) Instructions followed on application method, preharvest intervals, and dosage. c) Instructions followed on application method and preharvest intervals, but suboptimal dosage. d) Incorrect application method, dosage in excess of labeled amount, or incorrect timing within preharvest interval.	<input type="checkbox"/> 3 <input type="checkbox"/> 3 <input type="checkbox"/> 1* <input type="checkbox"/> 0
23	Pesticides Food safety Health and safety	<b>Calibration</b>  Pesticide application equipment is calibrated, and it is maintained to prevent leakage or contamination of products.	a) There is no use of pesticides. b) Calibration and maintenance within current crop cycle. c) Calibration and maintenance within the past 2 years. d) No calibration and maintenance within the past 2 years.	<input type="checkbox"/> 3 <input type="checkbox"/> 3 <input type="checkbox"/> 1* <input type="checkbox"/> 0
<b>Harvest and postharvest</b>				
24	Profitability Yield Food safety	<b>Timing of harvest</b>  Rice is harvested at the appropriate time to optimize grain quality.	a) Rice is harvested when moisture content is between 21% and 24% or when 80% to 85% of the grains per panicle are straw- or yellow-colored. b) Rice is harvested between 28 and 35 days after heading in dry season and between 32 and 38 days after heading in wet season. c) Not a or b.	<input type="checkbox"/> 3 <input type="checkbox"/> 2* <input type="checkbox"/> 0
25	Food safety	<b>Harvest equipment</b>  Rice is harvested with clean equipment to prevent contamination and mixing of varieties.	a) Harvest equipment is cleaned before use. b) Harvest equipment is not cleaned before use.	<input type="checkbox"/> 3* <input type="checkbox"/> 0

No.	Impact	Requirement	Level(s) of compliance	Points
26	Profitability Yield Food safety	<p><b>Drying time</b></p> <p>Rice is dried on-farm within 24 hours after harvest to an appropriate moisture content, depending on further use:</p> <ul style="list-style-type: none"> <li>- 15–18% moisture content for direct selling, for sale within a week.</li> <li>- 14% moisture content or less for storing grains longer than 1 week.</li> <li>- 12% moisture content or less for storing seeds.</li> </ul> <p>The moisture gradient within a batch cannot be more than 1% (per batch, the moisture content of a grain cannot be more or less than 1% compared with the average moisture content).</p> <p>If rice is not dried on-farm, it is transported to a drying facility (e.g., a miller) within 12 hours after harvest (so that rice can be milled at 14% moisture content).</p>	<p>a) Rice is transported to a drying facility (e.g., a miller) within 12 hours after harvest.</p> <p>b) Rice is dried on-farm within 24 hours after harvest, with proof of the desired moisture content and moisture gradient.</p> <p>c) Rice is dried on-farm within 24 hours after harvest, without proof of the desired moisture content and moisture gradient.</p> <p>d) Rice is not transported to a drying facility (e.g., a miller) within 12 hours after harvest, and not dried on-farm within 24 hours after harvest.</p>	<p><input type="checkbox"/>3</p> <p><input type="checkbox"/>3</p> <p><input type="checkbox"/>2*</p> <p><input type="checkbox"/>0</p>
27	Profitability Yield Food safety	<p><b>Drying technique</b></p> <p>Rice is dried by using sustainable drying techniques.</p>	<p>a) No drying on-farm.</p> <p>b) Mechanical drying (e.g., flatbed drying).</p> <p>c) Sun drying with the following conditions:</p> <ul style="list-style-type: none"> <li>- layer thickness is 2–4 cm, and</li> <li>- mixing is done every 30 minutes, and</li> <li>- there is protection from rain, and</li> <li>- there is protection from contamination (e.g., on nets, mats, or canvas).</li> </ul> <p>d) Sun drying with the following conditions:</p> <ul style="list-style-type: none"> <li>- there is protection from rain and</li> <li>- there is protection from contamination (e.g., on nets, mats, or canvas).</li> </ul> <p>e) Not a, b, c, or d.</p>	<p><input type="checkbox"/>n/a</p> <p><input type="checkbox"/>3</p> <p><input type="checkbox"/>2</p> <p><input type="checkbox"/>1*</p> <p><input type="checkbox"/>0</p>
28	Profitability Yield Food safety	<p><b>Rice storage</b></p> <p>Rice is safely stored, maintaining its quality, through the following measures:</p> <ol style="list-style-type: none"> <li>1. Rice is stored away from hazardous substances, such as agrochemicals.</li> <li>2. Rice is stored with adequate measures to prevent rewetting and pest damage.</li> <li>3. Rice is cleaned before storage (removal of dirt, weeds, and insects).</li> </ol>	<p>a) No storage on-farm.</p> <p>b) Farmer applies measures 1, 2, and 3.</p> <p>c) Farmer applies measures 1 and 2.</p> <p>d) Farmer applies measure 1.</p> <p>e) Not a, b, c, or d.</p>	<p><input type="checkbox"/>n/a</p> <p><input type="checkbox"/>3</p> <p><input type="checkbox"/>2</p> <p><input type="checkbox"/>1*</p> <p><input type="checkbox"/>0</p>
29	Nutrients GHG Community	<p><b>Rice stubble</b></p> <p>Rice stubble is not burned, and is managed in a sustainable way to mitigate emissions, minimize environmental impacts, and retain or improve soil quality.</p>	<p>a) Stubble is grazed by livestock, left on the field (in a minimum-tillage system), or plowed under while the soil is dry, in time to allow aerobic decomposition before the next rice crop is planted.</p> <p>b) Stubble is plowed under while the soil is flooded or while the soil is dry, but without allowing sufficient time for aerobic decomposition before planting the next rice crop.</p> <p>c) Stubble is burned.</p>	<p><input type="checkbox"/>3</p> <p><input type="checkbox"/>1*</p> <p><input type="checkbox"/>0</p>

No.	Impact	Requirement	Level(s) of compliance	Points
30	Nutrients GHG Community	<b>Rice straw</b>  In case of intensive farming (more than one crop cycle per year) rice straw is not burned, left on the field, or plowed under. Instead, rice straw is composted and used for energy production or other purposes.  In the case of non-intensive farming (one crop cycle per year), rice straw is not burned, but can be left on the field or plowed under.	a) Compliance with all of the listed straw management elements for intensive or non-intensive farming. b) In case of intensive farming: straw is removed from the field, but not composted and used for energy production or other purposes. c) Non-compliance with the listed straw management elements for intensive or non-intensive farming.	<input type="checkbox"/> 3  <input type="checkbox"/> 1*  <input type="checkbox"/> 0
<b>Health and safety</b>				
31	Health and safety	<b>Safety instructions</b>  Workers, including working household members, receive regular safety instructions to prevent work-related accidents or diseases, and first aid supplies are available on-farm.	a) No workers or working family members, but first aid supplies are available on-farm. b) Workers, including working household members, receive regular safety instructions and first aid supplies are available on-farm. c) Workers, including working household members, receive regular safety instructions, but no first aid supplies are available on-farm. d) There is no safety instruction and no first aid supplies are available on-farm.	<input type="checkbox"/> 2  <input type="checkbox"/> 2  <input type="checkbox"/> 1*  <input type="checkbox"/> 0
32	Health and safety	<b>Tools and equipment</b>  Tools and equipment for farm operations and postharvest processes are frequently maintained and calibrated.	a) Calibration and maintenance done within the current crop cycle. b) Calibration and maintenance within the past 2 years. c) No calibration and maintenance within the past 2 years.	<input type="checkbox"/> 2  <input type="checkbox"/> 1*  <input type="checkbox"/> 0
33	Pesticides Health and safety	<b>Training of pesticide applicators</b>  Pesticide applicators receive training on handling and use of pesticides.	a) There is no use of pesticides. b) Pesticide applicators participated in a training session in the past 3 years. c) Pesticide applicators participated in a training session in the past 5 years. d) Pesticide applicators did not participate in a training session in the past 5 years.	<input type="checkbox"/> 2 <input type="checkbox"/> 2  <input type="checkbox"/> 1*  <input type="checkbox"/> 0
34	Pesticides Health and safety	<b>Personal protective equipment (PPE)</b>  Pesticide applicators use good-quality PPE, including: <ul style="list-style-type: none"> <li>- gloves</li> <li>- masks</li> <li>- boots</li> <li>- protective clothing</li> </ul> Protective clothing is washed after use.	a) There is no use of pesticides. b) Pesticide applicators use at least three of the listed PPE items, but always gloves (or at least what is required on the product label) of good quality, and clothing is washed after use. c) Pesticide applicators use at least two of the four listed PPE items, but always gloves of good quality, and clothing is washed after use. d) Pesticide applicators use fewer than two of the four items, or do not use gloves, or use items of low quality, or clothing is not washed after use.	<input type="checkbox"/> 2 <input type="checkbox"/> 2  <input type="checkbox"/> 1*  <input type="checkbox"/> 0
35	Pesticides Health and safety	<b>Washing and changing</b>  Washing and changing facilities are available for pesticide applicators.	a) There is no use of pesticides. b) Washing and changing facilities are available. c) A washing or changing facility is available. d) No washing or changing facility is available.	<input type="checkbox"/> 2 <input type="checkbox"/> 2  <input type="checkbox"/> 1* <input type="checkbox"/> 0

No.	Impact	Requirement	Level(s) of compliance	Points
36	Pesticides Health and safety	<b>Applicator restrictions</b>  Pesticides are not applied by pregnant or lactating women, by children below 18 years, or by persons who suffer from chronic or respiratory diseases.	a) There is no use of pesticides. b) Pesticides are not applied by pregnant or lactating women or by children below 18 years, or by persons who suffer from chronic or respiratory diseases. c) Pesticides are applied by pregnant or lactating women or by children below 18 years, or by persons who suffer from chronic or respiratory diseases.	<input type="checkbox"/> 2 <input type="checkbox"/> 2*   <input type="checkbox"/> 0
37	Pesticides Health and safety Community	<b>Re-entry time</b>  Recommended re-entry time after the use of pesticides, or after 48 hours if the label does not give a recommendation, is observed and communicated.	a) There is no use of pesticides. b) The recommendation, or re-entry after 48 hours is observed and communicated by placing warning signs in the fields. c) The recommendation, or re-entry after 48 hours is observed and communicated verbally. d) The recommendation, or re-entry after 48 hours is not observed or not communicated.	<input type="checkbox"/> 2 <input type="checkbox"/> 2  <input type="checkbox"/> 1*  <input type="checkbox"/> 0
38	Pesticides Food safety Health and safety	<b>Pesticide storage</b>  Pesticides and inorganic fertilizers (including empty containers) are labeled and stored in a locked place, separate from fuel and food and out of reach of children.	a) There is no use of pesticides or inorganic fertilizers. b) Pesticides and inorganic fertilizers are labeled and stored in a locked and separate place. c) Pesticides and inorganic fertilizers are labeled and stored in a general farm storage area. d) Pesticides and inorganic fertilizers are not labeled or stored.	<input type="checkbox"/> 2  <input type="checkbox"/> 2  <input type="checkbox"/> 1*  <input type="checkbox"/> 0
39	Pesticides Health and safety	<b>Pesticide disposal</b>  Empty pesticide containers and obsolete pesticides are disposed of properly.	a) There is no use of pesticides. b) Farmer participates in a collection, return, or disposal system. c) In the absence of such a system: - empty containers are rinsed three times with water and made unusable by crushing or puncturing before burying them on the farm and are not recycled. - surplus spray and wash water is applied over an unmanaged part of the farm, away from water bodies. - obsolete pesticides (past shelf life or banned pesticides) are returned to the dealers or, if not possible, disposed of in a manner that minimizes exposure to humans and the environment. d) There is a collection, return, or disposal system, but it is not used. e) In the absence of such a system, empty pesticide containers and obsolete pesticides are not disposed of as described under (c).	<input type="checkbox"/> 2 <input type="checkbox"/> 2  <input type="checkbox"/> 2*        <input type="checkbox"/> 0  <input type="checkbox"/> 0

No.	Impact	Requirement	Level(s) of compliance	Points
<b>Labor rights</b>				
40	Child labor	<p><b>Child labor</b></p> <p>Children below 15 years are not engaged as permanent or seasonal workers. If local legislation has established a higher minimum age, this higher age applies. Age of employees is always verified (ILO Convention 138).</p>	<p>a) No children below the minimum age are working on the farm, unless they are members of a small-scale family farm, and the following conditions are met:</p> <ul style="list-style-type: none"> <li>- they perform light age-appropriate duties,</li> <li>- the work is not harmful to their health and development,</li> <li>- the work does not interfere with their education,</li> <li>- the work does not exceed 14 hours per week, and</li> <li>- children are always supervised by an adult.</li> </ul> <p>b) Children below the minimum age are working on the farm, but there are deliberate and evidenced efforts to stop the children from working and to place them into education.</p> <p>c) Children below the minimum age are working on the farm, and no deliberate and evidenced efforts are made to stop the children from working and to place them into education.</p>	<p><input type="checkbox"/>3*</p> <p><input type="checkbox"/>1</p> <p><input type="checkbox"/>0</p>
41	Child labor	<p><b>Hazardous work</b></p> <p>Children below 18 years do not conduct hazardous work or any work that jeopardizes their physical, mental, or moral well-being (ILO Convention 182). The following conditions are met:</p> <ul style="list-style-type: none"> <li>- Children do not carry heavy loads.</li> <li>- The work is not at dangerous locations.</li> <li>- The work is not at night (between 2200 and 0600).</li> <li>- Children do not use harvest knives.</li> <li>- Children do not work with dangerous substances or equipment.</li> </ul>	<p>a) There are no children below 18 years working on the farm.</p> <p>b) Children below 18 years are working on the farm and all listed conditions are met.</p> <p>c) Children below 18 years are working on the farm and they use harvest knives, but all of the other listed conditions are met.</p> <p>d) Children below 18 years are working on the farm, and one or more of the other listed conditions are not met.</p>	<p><input type="checkbox"/>n/a</p> <p><input type="checkbox"/>3*</p> <p><input type="checkbox"/>2</p> <p><input type="checkbox"/>0</p>
42	Child labor	<p><b>Education</b></p> <p>Children living on the farm in the age of compulsory schooling go to school all year long.</p>	<p>a) There are no children living on the farm within the age of compulsory schooling.</p> <p>b) Children living on the farm within the age of compulsory schooling go to school all year long.</p> <p>c) Children living on the farm within the age of compulsory schooling go to school, but not all year long.</p> <p>d) Children living on the farm within the age of compulsory schooling do not go to school, but deliberate and evidenced efforts are made to place them into education, for example, by lobbying for a nearby school or by providing on-site schooling.</p> <p>e) Children living on the farm within the age of compulsory schooling do not go to school, and no deliberate and evidenced efforts are made to place them into education.</p>	<p><input type="checkbox"/>n/a</p> <p><input type="checkbox"/>3</p> <p><input type="checkbox"/>2</p> <p><input type="checkbox"/>1*</p> <p><input type="checkbox"/>0</p>

No.	Impact	Requirement	Level(s) of compliance	Points
43	Labor rights	<b>Forced labor</b>  No forced, prison, or bonded labor is used (ILO Convention 29, 105). All of the following conditions are met: <ul style="list-style-type: none"> <li>- No withholding of (part of) the worker's salary, benefits, property, or documents (e.g., identity cards and travel documents) in order to force such worker to continue to work.</li> <li>- Workers are not charged recruiting or hiring fees that require them to be indebted to the farm (or recruiting agency).</li> <li>- Workers are allowed to leave the farm's premises at the end of their shifts.</li> <li>- Spouses and children of contracted workers are not forced to work on the farm.</li> <li>- The farm does not participate in or allow human trafficking.</li> </ul>	a) There are no workers. b) Full compliance with the listed conditions. c) Less than full compliance with the listed conditions.	<input type="checkbox"/> n/a <input type="checkbox"/> 3* <input type="checkbox"/> 0
44	Labor rights	<b>Discrimination</b>  No discrimination or disrespectful treatment of workers, including working household members (ILO Convention 100, 111). All of the following conditions are met: <ul style="list-style-type: none"> <li>- No discrimination on the basis of gender, ethnic background, national origin, religion, disability, sexual orientation, pregnancy, worker organization membership, or political affiliation with regard to hiring, remuneration, benefits, training, advancement, discipline, termination, retirement, or any other employment-related decision.</li> <li>- No job-related medical testing as a condition of employment (except lawful drug testing).</li> <li>- No behavior, gesture, language, or physical contact that is sexually abusive, coercive, or threatening.</li> </ul>	a) There are no workers. b) Full compliance with the listed conditions. c) Less than full compliance with the listed conditions.	<input type="checkbox"/> n/a <input type="checkbox"/> 3* <input type="checkbox"/> 0
45	Labor rights	<b>Freedom of association</b>  Workers have the right to establish and/or join an association of their choice and to take part in collective bargaining on working conditions (ILO Convention 87, 98). All of the following conditions are met: <ul style="list-style-type: none"> <li>- Workers can freely establish and join workers' organizations, both internal (such as workers' representations) and external (such as trade unions), and take part in collective bargaining on working conditions.</li> <li>- Labor organizations are allowed to conduct activities on-farm.</li> <li>- Effective functioning of labor organizations is not blocked and representatives of such organizations are not being discriminated against.</li> <li>- The farmer complies with collective bargaining agreements.</li> </ul>	a) There are no workers. b) Full compliance with the listed elements. c) Less than full compliance with the listed elements.	<input type="checkbox"/> n/a <input type="checkbox"/> 3* <input type="checkbox"/> 0
46	Labor rights	<b>Wages</b>  Wages and benefits of workers: <ul style="list-style-type: none"> <li>- meet or exceed the minimum required under local and national laws,</li> <li>- are paid in a timely manner and on a regular basis, and</li> <li>- are paid in a legal currency, or in another form acceptable to workers without creating any form of dependency.</li> </ul>	a) There are no workers. b) Full compliance with the listed elements. c) Less than full compliance with the listed elements.	<input type="checkbox"/> n/a <input type="checkbox"/> 3* <input type="checkbox"/> 0



This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.



# **Sustainable Rice Platform**

## **SRP Performance Indicators for Sustainable Rice Cultivation**

Version 1.0

April 2015

[www.sustainablerice.org](http://www.sustainablerice.org)

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# 1. Introduction

The Sustainable Rice Platform (SRP) is a multi-stakeholder partnership to promote resource efficiency and sustainability both on-farm and throughout the rice value chain. The SRP is developing a range of tools to promote sustainable rice cultivation, including Guidelines, a Standard, training modules and decision-making tools. These tools are intended to be used either separately or together as appropriate to the farmer context.

Through a multi-stakeholder process, the SRP has developed the **SRP Standard for Sustainable Rice Cultivation v.1.0**, which we are now pleased to make available to SRP members. The SRP Standard has been developed based on priorities defined in a set of 12 **Performance Indicators (PIs)**, complemented with several topics essential for acceptance in potential destination markets. The Standard defines a set of key requirements with different levels of performance allowing for a stepwise improvement and compliance process.

The PIs are designed to support the Standard by measuring changes resulting from adoption of on-farm sustainable best practice, e.g. through compliance with the SRP Standard, or other interventions of interest to SRP members. The PIs thus offer a valuable and flexible tool to enhance our understanding of the effectiveness of individual interventions and to create a basis to communicate on progress towards sustainability in any rice system.

The field implementation phase will be an important next step to ensure relevance, robustness and user-friendliness of the Standard and PIs. Feedback from this implementation phase will help us to refine the tools to maximize value to SRP members, and establish their utility as scalable tools for driving wide-scale adoption of sustainable best practice.

SRP is therefore pleased to offer its members an opportunity to participate in this implementation phase, to be conducted in a number of countries representing a range of production and ecosystem contexts. SRP members are welcome to participate in field-validation of the Standard and PIs, either independently or separately, using their own facilities, with support and coordination from the SRP Secretariat.

Field-testing will require a common methodology to allow aggregation and analysis of data from different locations. It is anticipated that an online data entry tool will be offered to members in the near future to facilitate and standardize data entry processes, and automate analysis of field data by users themselves. The system will provide spatial information to allow linkages with other data such as weather maps.

This document provides an introduction to the **Performance Indicators**, a description of each PI and the methodologies required for sampling and data collection. The Annex provides Scorecards to be used in evaluating 4 specific PIs: pesticide use efficiency (PI 8), health & safety (PI 10), child labor (PI 11) and women's empowerment (PI 12).

This document is intended to be used in conjunction with the SRP Standard and the Field Implementation Protocol. The updated Standard, PIs, Implementation Protocol and reporting templates are all available for download at the Members' Area of the SRP website: [www.sustainablerice.org](http://www.sustainablerice.org), or from the SRP Secretariat: [Secretariat@sustainablerice.org](mailto:Secretariat@sustainablerice.org).

## 2. SRP Performance Indicators (PIs)

### 2.1 Introduction

The SRP PIs are designed to assess sustainability improvements resulting from changes in farm practice. The PIs cover key sustainability topics, selected according to the following criteria:

- Perceived relevance to key sustainability issues in the rice sector
- Applicability across diverse rice farming systems
- Ability of farmer to improve on indicator
- Ease of measurement (cost, effort, complexity)
- Ability to quantify performance
- Ability to measure indicators against agreed targets and thresholds.

Table 1 below summarizes the indicators and basis for measurement. In order to develop reliable conclusions, the PIs must be measured over a minimum of two cropping seasons. The PIs include both quantitative and qualitative assessments.

**Table 1: SRP Performance Indicators**

Name of indicator	Measurement	Source
<b>SRP Guiding Principle: Improved Livelihoods</b>		
1. Profitability: net income from rice	\$/ ha/ crop cycle \$/ ha/ year	Farm records Household survey
2. Labor productivity	kg paddy rice/ days \$ net income from rice/ days	Farm records Household survey
3. Productivity: grain yield	Kg paddy/ha	Farm records Household survey
<b>SRP Guiding Principle: Consumer Needs</b>		
4. Food safety	Kg safe milled rice/kg milled rice x100	Laboratory test
<b>SRP Guiding Principle: Resource Use Efficiency</b>		
5. Water use efficiency: total water productivity	Kg paddy/L (rainfall + irrigation)	Farm records Household survey
6 Nutrient use efficiency: N	Kg paddy/kg elemental N Kg elemental N removal / kg elemental N input	Farm records Household survey
7 Nutrient use efficiency: P	Kg paddy/kg elemental P Kg elemental P removal / kg elemental P input	Farm records Household survey
8 Pesticide use efficiency	Balanced scorecard	Farm records Household survey
<b>SRP Guiding Principle: Climate Change Mitigation</b>		
9. Greenhouse gas emissions	Mg/CO <sub>2</sub> eq/ha	Farm records Household survey
<b>SRP Guiding Principle: Labor Conditions</b>		
10. Health & safety	Balanced scorecard	Household survey
11. Child labor	Balanced scorecard	Household survey
<b>SRP Guiding Principle: Social Development</b>		
12. Women's empowerment	Balanced scorecard	Household survey

In addition to data recorded by the farmers (in their Farmer Field Books), it will be necessary for certain data to be collected by partners or extension workers.

The next sections outline the overall methodology for measuring the performance indicators, followed by a more detailed description of the performance indicators including definitions, rationale, measurement units, and more detailed information on the measurement details and data collection. The Annex contains the Scorecards to be used for assessing 4 PIs:

- Pesticide use efficiency (PI No. 8)
- Health and safety (PI No. 10)
- Child labor (PI No. 11)
- Women's empowerment (PI No. 12)

## **2.2 Data collection methodology**

### ***Responsibilities***

The implementing partner is responsible for the data collection process. An implementing partner may be a research institute, company, extension worker, project owner, group manager or miller. Data collection can be organized in different ways. When one relies on farmer records, it is important to ensure that the farmers have the capacity, willingness and information to measure accurately. One can also visit farmers frequently (e.g. weekly) to discuss their activities over the previous period.

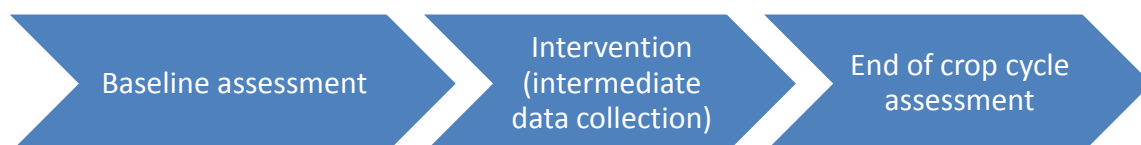
### ***Number of indicators to measure***

We recommend the measurement of all indicators as this will provide the best information about possible trade-offs and as such a more reliable picture on the total concept of sustainability. We do however acknowledge that the relative importance of indicators may depend on the particular context, the intervention strategy or available resources. Implementing partners are therefore free to decide which indicators they want to measure.

### ***Frequency of data collection***

It is recommended to set a baseline at the beginning of the project, in order to be able to benchmark improvement. The ability to set baselines will depend on the availability of historical farm records.

Collection of farm records, household surveys and laboratory tests should take place at the end of each crop cycle. Where applicable and possible, it is recommended to also collect data during the crop cycle as this can serve to validate the quality of record keeping.



It is recommended to measure performance indicators for at least 2 consecutive crop cycles between April 2015 and June 2016.

### ***Sampling approach***

We recommend applying a sampling approach per project. The implementing partner will select a number of farmers targeted by the project based on their representativeness, capacity and willingness to participate. If both women and men are part of the target population, stratification by gender is required in order to generate gender-disaggregated data.

Population size will determine the number of farmers to be sampled. Since population size may vary considerably across countries and projects, we propose the following guidelines to calculate sample size:

- A minimum of 5 farmers will be selected if the population size is equal to 50 farmers or less.
- If the target group is between 50 and 3500 farmers, the implementing partner will select 10% of the population for the sample size.
- If the target group is above 3500 farmers, the implementing partner will select 350 farmers.

The implementing partner is encouraged to collect additional data from a control group of non-participating farmers. This will provide a baseline to define plausible contributions of project interventions to improvements among target farmers.

Control farmers may live in the same village as farmers in the project, in neighbouring villages or in other locations, provided they are matched with project farmers in terms of similarities in their farming systems and socio-economic characteristics such as farm size, irrigation system, number and type of employees should also be matched. It is however important to avoid selecting control farmers who may be influenced by project interventions (spin-off from the project) or who may benefit from other ongoing interventions.

We propose the following guidelines to calculate the sample size for the control groups:

- If the sample size is 5 farmers, a minimum of 5 farmers will be selected for the control group.
- If the sample size is 10% of the target group, the control group shall be 5% of the sample size.
- If the sample size is 350 farmers, the control group shall comprise 35 farmers.

Table: sample sizes

Population (N)	Sample size target group	Control Group
$N \leq 50$	5	5
$N = 50-3500$	10%	5% of sample size
$N \geq 3500$	350	35

### **Data collection tool**

SRP the developing an IT based data collection tool to facilitate the task of consistent data collection, data aggregation and analysis. The data collection tool will be supported with standardized formats for farm record keeping on the required records to measure the performance indicators.

## 2.3 Detailed description of the performance indicators

### 1. Profitability: net income from rice

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**Indicator:** net income from rice

The indicator measures profitability, defined as the farmer's net income from rice cultivation per crop cycle and per year

**Unit:** US \$/ha/crop cycle and US\$/ha/year

An increase over time would be considered positive.

**Rationale:** The rationale for this indicator is based on the SRP guiding principle of improved livelihoods. The assumption is that increased net income leads to increased household capacity to pay for food, health services and education. Increased net income increases the attractiveness of rice cultivation and provides increased ability to invest in the farm.

**Measurement details:** The indicator is calculated as the gross income received from the sale of the rice crop minus the total fixed and variable costs of growing the rice crop. The calculation should include both rice marketed and rice used for subsistence as well as the opportunity cost of family labor:

- the value of subsistence consumption is based on market prices; the average price of 1kg rice sold that season)
- the opportunity costs of labor are determined by the fees for one day of rural labor in the project area during the applicable period

**Data collection:** Detailed data on costs and income are recorded in a Farmer Field Book during the season by a sample of farmers (see Section 4.2 for sample size). Data are collected per farmer, at least at the end of every rice crop cycle. An extension worker or research partner can also collect and check the data via a household survey. More frequent data collection over the crop season is encouraged in order to ensure quality of farmer records. Alternative data collection methods such as the use of mobile devices by extension workers are also encouraged.

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## 2. Labor productivity

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**Indicator:** Labor productivity

The indicator measures labor productivity, defined as the total amount of days worked, per kg of rice produced.

**Unit:** kg paddy rice/days and US\$ net income from rice/days

An increase over time would be considered positive.

**Rationale:** The rationale for this indicator is based on the SRP guiding principle: Improved Livelihoods. The assumption is that increased labor productivity leads to increased profitability, more time to spend on other activities, increased attractiveness of rice cultivation and increased willingness to invest in the farm.

**Measurement details:** Labor productivity includes labor all rice-related farm activities such as field clearing, plowing, planting, irrigation and fertilizer application, pest management, and harvesting. Labor includes temporary, permanent, and seasonal workers paid in cash as well as non-paid labor carried out by household members, other relatives and acquaintances.

**Data collection:** Detailed data on labor inputs (both family and hired) are recorded in a Farmer Field Book over the rice season by a sample of farmers (see Section 4.2 for sample size). Data are collected per farmer, at least at the end of every rice crop cycle. An extension worker or research partner can also collect and check the data via a household survey. More frequent data collection over the crop season is encouraged in order to ensure quality of farmer records. Alternative data collection methods such as the use of mobile devices by extension workers are also encouraged.

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### 3. Productivity: grain yield

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**Indicator:** Grain yield

The indicator measures productivity, defined as the recovered grain yield per hectare.

**Unit:** kg paddy/ha / crop cycle and kg paddy/ha / year

An increase over time would be considered positive.

**Rationale:** The rationale for this indicator is based on the SRP guiding principle: Improved Livelihoods. The assumption is that increased productivity leads to increased household food security, an increase in marketable surplus and increased national and international food security.

**Measurement details:**

Yield is measured in kilograms of wet grain yield harvested, with an adjustment to 14% moisture content calculated based on the measured moisture content at the time of weighing. Before weighing, the grain should be threshed and dried to an appropriate moisture content for selling, milling or storage, depending on the intended immediate use. A moisture meter should be used to document the actual moisture content at the time of weighing. This value can be used to calculate the final grain yield, which must be reported at 14% moisture content. The entire harvest should be weighed and divided by the total land area.

If the farmer records separate yield measurements for different fields within a farm, these should be averaged across the whole farm (total amount of grain harvested/total land area of the farm) and reported as one value per household.

Rice yields should be disaggregated by:

- type (specialty, normal, etc.) to provide information on the farmer's choice (e.g. high yielding varieties, or low-yielding, high-value specialty products such as red glutinous rice)
- cropping season.

**Data collection:** Detailed data on yields are recorded in a Farmer Field Book during the rice season by a sample of farmers (see Section 4.2 for sample size). Data is collected per farmer, at least at the end of every rice crop cycle. An extension worker or research partner can also collect and check the data via a household survey. Alternative data collection methods such as the use of mobile devices by extension workers are also encouraged.

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## 4. Food safety

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**Indicator:** Food safety

The indicator measures food safety, defined as the percentage of milled rice that falls within safety requirements for heavy metals, pesticide residues and mycotoxins.

**Unit:** kg safe milled rice/kg milled rice x100

The target should be 100%

**Rationale:** The rationale for this indicator is based on the SRP guiding principle: Consumer Needs. The assumption is that safe rice products lead to consumer assurance. Safer food reduces rice-related human exposure to specific contaminants and leads to a healthier population.

**Measurement details:** Food safety is calculated as the total amount of safe milled rice, in kilograms, divided by the total amount of milled rice and multiplied by 100.

- From a food safety point of view it is highly recommended to test at least once for *heavy metals* (arsenic, cadmium, mercury, chromium and lead). Alternatively, one can decide to test based upon a risk assessment. If no risks have been identified then there is no need for further tests. If moderate levels of heavy metals have been detected then subsequent tests need to be conducted.

- Tests for *mycotoxins* must be conducted at least once; if there is no reason for concern, they can be repeated at intervals of 5 or 6 seasons. If there is concern tests need to be repeated every season. As mycotoxin infections are triggered by diseases at the panicle stage, tests for mycotoxins should be conducted in the event of detection of a risk of panicle diseases.

- A preliminary test must be conducted for *pesticide residues* whenever pesticide residues exceeding MRLs have been reported by any national government within the last 5 years.

To ensure food safety, above tests should be tested for all farms in the first season. In subsequent seasons, additional samples of only some farms can be taken for verification, with locations selected through a process to be determined (the quantity based on analytical budgets, and to locations selected either randomly, or on basis of areas of concern). If resources are constraint and requirements for food safety allow for it, the initial tests could also be based upon a sample (see Section 4.2).

SRP will consider selecting one or two labs to standardize the analytical procedure for use by all SRP participants. These should have automated LCMS-MS capability enabling analysis for many pesticides at one time.

**Data collection:** If a mill has traceability to farm level, the miller or extension worker can collect the samples at the mill after milling. Without this traceability, one could collect samples of paddy from a sample of farms, send them to a centralized sample collection system, and then have them all milled by the laboratory immediately prior to analysis. This last option is still second best to testing the product after it has gone through the real-world milling process, but it is more meaningful for improving food safety at the farm level. In both cases, records are kept of the size of the batch from which the sample was taken (in kg).

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## 5. Water use efficiency

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**Indicator:** Total water productivity

The indicator measures water use efficiency, defined as the total amount of recovered yield per input of water.

**Unit:** kg paddy rice/ L (rainfall + irrigation)

An increase over time would be considered positive.

**Rationale:** The rationale for this indicator is based on the SRP guiding principle: Resource Use Efficiency. The assumption is that savings in irrigation or rain water can be used for other important purposes (i.e. water availability increases).

**Measurement details:** Accurate field dimensions are required for this parameter. The farmer records in the Farmer Field Book details on the water input or energy consumption for each irrigation event. Water inputs are disaggregated by source; rainwater, ground water, surface water.

- Rainfall (mm), either within individual farmer fields or at a village level, is recorded using a rain gauge after each rainfall event. Alternatively, rainfall data can be sourced from local meteorological organizations or using global rainfall prediction models that are available through agencies such as NASA. The use of rain gauge data can be used to ground truth rainfall model data.

- Ground water irrigation. The farmer records the total number of irrigation events and the depth of water in the field at the start and end of each irrigation event. The initial water depth at the start of each irrigation should be negative where AWD irrigation scheduling is used, reflecting the water level below the soil surface. Where possible the farmer records the amount of pumped ground water, by installing a flow meter or calibrated pump and then records the time it is open or the amount of energy used to pump the water. Alternatively the discharge capacity (in terms of liters per second or equivalent units) and size of the pump, depth of groundwater (m) and the amount of energy consumed, either volume (diesel, gasoline) or kWh (electricity), during each irrigation event or total irrigation energy consumption per season should be recorded.

- Surface water irrigation. The farmer records the number of irrigation events and the depth of water in the field at the start and end of each irrigation event. The initial water depth at the start of each irrigation should be negative where AWD irrigation scheduling is used, reflecting the water level below the soil surface. Where possible the farmer should install an appropriate flow measuring device for open or closed channels, such as a weir, flume, submerged orifice or current meter.

**Data collection:** Detailed data on rainfall and irrigation are recorded in a Farmer Field Book during the rice season by a sample of farmers (see Section 4.2 for sample size). Data are collected per farmer, at least at the end of every rice season. However, this indicator, especially, would benefit from more frequent data collection to ensure completeness and quality of data. An extension worker or research partner can also collect and check the data via a household survey. Alternative data collection methods such as the use of mobile devices by extension workers are also encouraged.

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## 6. Nutrient use efficiency: N

**Indicator:** Nutrient use efficiency: N or Partial nutrient balance: N

The nutrient use efficiency is defined as the recovered gain yield per unit of nitrogen input. The partial nutrient balance measures the input/output ratio of nitrogen.

**Unit:** kg paddy rice/kg elemental N or Kg elemental N removal / kg elemental N input  
An increase over time would be considered positive, provided farmers do not mine their soil.

**Rationale:** The rationale for this indicator is based on the SRP guiding principle: Resource Use Efficiency. The assumption is that improved N management leads to improved yields or reduced input costs, higher farm profitability, increased food security, less N lost to the environment; reduced eutrophication of waterways, reduced emissions of greenhouse gases (GHG) from paddy fields, and reduced energy consumption and GHG emissions from production and transport of fertilizers.

**Measurement details:** Records are kept of the total amount in kilograms of each type of fertilizer or soil conditioner applied to the rice field either prior to planting or during the season, for each field.

Record keeping should commence after harvest of the previous crop on the same field (whether rice or other crop). Records should be kept of all types of fertilizers applied (mineral, organic or synthetic). Sources of N that are not readily controlled by the farmer are excluded (e.g. biological nitrogen fixation from algae, indigenous soil N supply and N contributed through decomposition of roots from previous seasons).

Sources of N	Percentage of elemental N (%)
Rice straw	0.5-0.8 (0.65)
Cattle manure	0.4-0.6 (0.5)
Poultry manure	1.4-1.6 (1.5)
Pig manure	0.7-1.0 (0.85)
Compost ( mostly cattle manure)	1.5
Compost ( mostly poultry manure)	0.3
Compost (mostly kitchen scraps)	0.6

For the partial nutrient balance, one has to convert the tonnes of exported grain and straw on a N basis using average N content values.

**Data collection:** Detailed data on fertilizer use are recorded in a Farmer Field Book by a sample of farmers (see Section 4.2 for sample size). Data are collected per farmer, at least at the end of every rice crop cycle. An extension worker or research partner can also collect and check the data via a household survey. More frequent data collection over the crop season is encouraged in order to ensure quality of farmer records. Alternative data collection methods such as the use of mobile devices by extension workers are also encouraged.

## 7. Nutrient use efficiency: P

**Indicator:** Nutrient use efficiency: P or Partial nutrient balance: P

The nutrient use efficiency is defined as the recovered gain yield per unit of phosphorus input. The partial nutrient balance measures the input/output ratio of phosphorus.

**Unit:** kg paddy rice/kg elemental P and Kg elemental P removal / kg elemental P input  
An increase over time would be considered positive, provided farmers do not mine their soil.

**Rationale:** The rationale for this indicator is based on the SRP guiding principle: Resource Use Efficiency. The assumption is that improved P management leads to improved yields or decreasing input costs, higher profitability for the farmer; less P lost to the environment, reduced eutrophication of waterways, and reduced energy consumption and GHG emissions from production and transportation of fertilizers.

**Measurement details:** Records are kept of the total amount in kilograms of each type of fertilizer or soil conditioner applied to the field growing rice either prior to planting or during the season on each field.

Record keeping should commence after harvest of the previous crop on the same field (whether rice or other crop). All types of fertilizers applied should be recorded (mineral, organic or synthetic).

The farmer, extension worker or research partner records the P content using known ( i.e. label) or estimated percentage of elemental P in each fertilizer input to calculate total P. Default values for available P content in non-commercial (non-labeled) material as a percentage of fresh weight (not dried) are provided in the table below.

Sources of P	Percentage of elemental P (%)
Rice straw	0.07-0.12 (0.095)
Cattle manure	0.1-0.2 (0.15)
Poultry manure	0.5-0.8 (0.65)
Pig manure	0.2-0.3 (0.25)
Compost ( mostly cattle manure)	1.2
Compost (mostly kitchen scraps)	0.2
Rice straw	0.1

For the partial nutrient balance, one has to convert the tonnes of exported grain and straw on a P basis using average P content values.

**Data collection:** Detailed data on fertilizer use are recorded in a Farmer Field Book by a sample of farmers (see Section 4.2 for sample size). Data are collected per farmer, at least at the end of every rice crop cycle. An extension worker or research partner can also collect and check the data via a household survey. More frequent data collection over the crop season is encouraged in order to ensure quality of farmer records. Alternative data collection methods such as the use of mobile devices by extension workers are also encouraged.

## 8. Pesticide use efficiency

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**Indicator:** Pesticide use efficiency

This indicator measures optimized pesticide use.

**Unit:** The measurement unit is a 0-100 score based upon answers to multiple choice questions which describe a combination of practices and outcomes related to pesticide use efficiency. An increase over time would be considered positive.

**Rationale:** The rationale for this indicator is based on the on the SRP guiding principle: Resource Use Efficiency. The assumption is that improved pesticide management leads to increased farm profitability (through increasing yield and/or decreasing input costs), reduced environmental contamination by pesticides (leading to improved biodiversity and human health) and greater food security.

**Measurement details:** Measurement is based upon a scorecard covering the following topics:

1. Use of registered products
2. Calibration and maintenance of pesticide application equipment
3. Following label instructions
4. Targeted application
5. Weed management (number of applications)
6. Insect management (number of applications)
7. Disease management (number of applications)
8. Mollusk management (number of applications)
9. Rodent management (number of applications)
10. Bird management

The scorecard can be found in Annex 1.

The answers on the questions can be triangulated by observations and farm records. Farm records should be kept in a Farmer Field Book on the following topics:

- The trade name and active ingredient of the pesticide
- Total amount of pesticides applied to each rice crop cycle season per kilogram or liter of pesticide applied.
- For multiple applications of the same pesticide, the farmer should record each separate application.

**Data collection:** The scorecard is measured by a survey at least at the end of each rice crop cycle with a sample of farmers (see Section 4.2 for sample size). An extension worker or research partner can also collect and check the data via a household survey. More frequent data collection over the crop season is encouraged in order to ensure quality of farmer records. Alternative data collection methods such as the use of mobile devices by extension workers are also encouraged.

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## 9. Greenhouse gas emissions

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**Indicator:** Greenhouse gas emissions

This indicator measures the amount of methane emitted per unit of land area.

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**Unit:** Mg CO<sub>2</sub>e/ha

A decrease is considered to be positive.

**Rationale:** This indicator is based on the SRP guiding principle: Climate Change Mitigation. The assumption is that reduced methane emissions from rice fields during crop growth decrease the contribution of rice cultivation to climate change.

Measurement details: Measurement is based upon an IPCC-approved methodology based upon the following indicators:

1. Number of days of crop growth (starting at transplanting for a transplanted crop).
2. Total amount, in kilograms, of organic material incorporated into the soil (i.e. straw, manure or compost).
3. Number of days of flooding prior to crop establishment
4. Number and duration of drying events ( the number of times when the water depth falls at least 10 cm below the soil surface; or the number of times in which the soil dries to the point of light cracking).

Data are collected for the largest parcel of land. The quantity of methane is calculated according to the IPCC guidelines. Data is collected per farmer at the end of every season.

Responses can also be triangulated by observations and farm records.

**Data collection:** The data collection is conducted on a sample of farmers (see section 4.2. for sample size) per farmer at least at the end of the rice crop cycle. An extension worker or research partner can also collect and check the data via a household survey. More frequent data collection over the crop season is encouraged in order to ensure quality of farmer records. Alternative data collection methods such as the use of mobile devices by extension workers are also encouraged.

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## 10. Health & safety

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**Indicator:** Workers' health & safety

**Unit:** The measurement unit is a 0-100 score based upon answers to multiple choice questions which describe a combination of practices and outcomes related to health and safety. An increase over time would be considered positive.

**Rationale:** This indicator is based on the SRP guiding principle: Labor Conditions. The assumption is that increased health and safety measures lead to reduced health and safety risks. Improved worker health lead to reduced health-related costs, improved continuity of work and improved livelihoods.

**Measurement details:** Measurement is based upon a scorecard covering the following topics:

1. Incidence of work-related accidents and illnesses
2. Safety instructions and first aid
3. Re-entry periods after pesticide application
4. Availability and use of PPE
5. Suitable maintenance of equipment for safe operation
6. Pesticide applicator training
7. Age and gender of pesticide applicator
8. Washing and changing facility for pesticide applicator
9. Storage of pesticides
10. Disposal of pesticide container

The scorecard can be found in Annex 1.

**Data collection:** The scorecard is measured by a household survey at least at the end of each rice crop cycle with a sample of farmers (see Section 4.2 for sample size).

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## 11. Child labor

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**Indicator:** Child Labor

This indicator measures the incidence of child labor and respect for children's right to education.

**Unit:** The measurement unit is a 0-100 score based upon answers to multiple choice questions describing a combination of practices and outcomes related to child labor.  
An increase over time would be considered positive.

**Rationale:** The indicator is based on the SRP guiding principle: Labor Conditions. The assumption is that the absence of child labor leads to reduced health risks and greater opportunity to attend school.

**Measurement details:** Measurement is based upon a scorecard covering the following topics:

1. Employment of children below the age of 15 years old as permanent or seasonal workers
2. Children below the age of 18 years old doing hazardous work
3. Children of school age attending school all year long

The scorecard can be found in Annex 1.

The scores can be triangulated by observations and records, e.g. school enrolment records.

**Data collection:** The scorecard is measured by a household survey at least at the end of each rice crop cycle with a sample of farmers (see Section 4.2 for sample size).

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## 12. Women's empowerment

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**Indicator:** Women's empowerment

The indicator measures women's power to make decisions relevant to their well being.

**Unit:** The measurement unit is a 0-100 score based upon answers to multiple choice questions which describe a combination of practices and outcomes related to women's empowerment. An increase over time would be considered positive.

**Rationale:** The indicator is based on the SRP guiding principle: Social Development. The assumption is that empowerment of women leads to improved maternal health, improved family health and well-being. In situations where women are directly involved in rice production, women's empowerment (e.g. by increasing women's access to knowledge) is also expected to lead to higher levels of productivity and profitability.

**Measurement details:** Measurement is based upon a scorecard covering the following topics:

1. Women's control over decisions regarding household agricultural production
2. Women's control over decisions regarding their own labor input
3. Women's satisfaction regarding their labor input
4. Women's access to information and capacity building
5. Women's access to seasonal resources for farm activities
6. Women's control over long-term resources for farm activities
7. Women's control over decisions regarding household income
8. Women's control over their personal income
9. Women's participation in collective-decision making
10. Violence against women

In this indicator we refer to the main decision making female(s) in the household (generally spouses).

The scorecard can be found in Annex 1.

For this indicator an attempt should be made to ask an equal number of both men and women (although not both from the same household).

**Data collection:** The scorecard is measured by a household survey at least at the end of each rice crop cycle with a sample of farmers (see Section 4.2 for sample size).

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## Annex 1: Scorecards

### A. Pesticide Use Efficiency (PI No. 8)

No	Indicator	Corresponding requirement	Level(s) of performance	Score
1	Use of registered products	Purchased pesticides, including biologicals: <ul style="list-style-type: none"> <li>are used in line with national government recommendations,</li> <li>are registered for use in rice,</li> <li>come from a trustworthy source, and</li> <li>are not on any of the following international lists:               <ul style="list-style-type: none"> <li><a href="#">Persistent Organic Pollutants (POP's) in the Stockholm Convention</a></li> <li><a href="#">Annex III of the Rotterdam Convention</a></li> <li><a href="#">1A or 1B under World Health Organization (WHO) classification</a>.</li> </ul> </li> </ul> Crude farm produced bio-pesticides are allowed: <ul style="list-style-type: none"> <li>if not harmful to the environment and human health,</li> <li>if produced on farm and not purchased, and</li> <li>if proven to be effective.</li> </ul>	a) There is no use of pesticides.	10
			b) Compliance with all of the listed elements for purchased or farm-produced pesticides.	10
			c) Non-compliance with one or more of the listed elements for purchased or farm-produced pesticides.	0
2	Targeted application	Pesticides are not applied: <ul style="list-style-type: none"> <li>on non-target areas</li> <li>within 5 meters of occupied buildings, roads or pathways unless there is no threat to human or wildlife</li> <li>within 5 meters of water bodies (including main irrigation channels)</li> <li>within 1 meter of small diversion canals</li> <li>within 5 meters of protected areas</li> <li>during strong winds.</li> </ul>	a) Managed without pesticides	10
			b) Compliance with all listed conditions	10
			c) Non-compliance with one or more of the listed elements for purchased or farm-produced pesticides.	0
3	Label instructions	Each pesticide application is in accordance with label instructions on application method, pre-harvest interval and dosage.	a) There is no use of pesticides.	10
			b) Instructions followed on application method, pre-harvest intervals and dosage.	10
			c) Instructions followed on application method, pre-harvest intervals, but sub-optimal dosage.	5
			d) Incorrect application method, dosage in excess of labeled amount, or timing within pre-harvest interval.	0
4	Calibration	Pesticide application equipment is calibrated, and it is maintained to prevent leakage or contamination of products.	a) There is no use of pesticides.	10
			b) Calibration and maintenance within current crop cycle	10
			c) Calibration and maintenance within the past 2 years	5
			d) No calibration and maintenance within the past 2 years	0

No	Indicator	Corresponding requirement	Level(s) of performance	Score
5	Weed management	<p>Non-chemical methods of weed control include:</p> <ul style="list-style-type: none"> <li>• Good land preparation</li> <li>• Flooding</li> <li>• Mechanical weeding</li> <li>• Manual weeding</li> <li>• Biological control agents</li> </ul> <p>Appropriate herbicide application follows principles of IPM and meets all of the following criteria:</p> <ul style="list-style-type: none"> <li>• It is applied during early crop growth stage before rice canopy closes) and when weeds are small</li> <li>• An appropriate herbicide is used for the type of weed problem (choice of mode of action)</li> <li>• Local information about herbicide-resistant weeds is used when choosing an appropriate herbicide</li> </ul>	a) Weeds are controlled without herbicides.	10
			b) Weeds are controlled with a combination of physical and chemical techniques, with a maximum of 1 herbicide application per season, which must meet the criteria for appropriate use.	5
			c) Weeds are controlled with up to 4 herbicide applications (must have distinct modes of action) per crop cycle, meeting all criteria for appropriate use.	2
			d) Weeds are not effectively controlled or are managed with inappropriate herbicide use.	0
6	Insect management	<p>Non-chemical insect control methods include:</p> <ul style="list-style-type: none"> <li>• Synchronised planting</li> <li>• Use of resistant/tolerant varieties</li> <li>• Promotion of beneficial natural enemies (e.g. insects, spiders) by avoiding insecticide use</li> <li>• Promotion of other predators (e.g. birds, bats, frogs)</li> <li>• Crop rotation or extended fallow period</li> <li>• Balanced nutrient application (avoiding excessive use of nitrogen)</li> <li>• Biological control agents, e.g. Metarizhium, Beauveria</li> </ul> <p>Appropriate insecticide use follows principles of IPM and must meet all of the following criteria:</p> <ul style="list-style-type: none"> <li>• It is applied only if presence of specific pest at high density has been confirmed and damage is high (not preventively; apply action thresholds if locally available)</li> <li>• It is applied more than 40 days after sowing</li> <li>• (Exceptions to the latter are acceptable if following IPM recommendations by local government extension experts)</li> </ul>	a) Insect pests are managed without use of chemical insecticides.	10
			b) Insect pests are managed with maximum of 1 application of insecticides per crop cycle, only in the conditions for appropriate use.	5
			c) Insect pests are managed with a maximum of 2 insecticides per crop cycle, both of which should be within the conditions of appropriate use.	2
			d) Insect pests are not effectively managed or insecticides are used preventively or insecticides are applied before heading (except for stem borer).	0

No	Indicator	Corresponding requirement	Level(s) of performance	Score
7	Disease management	<p>Non-chemical disease management options include (effective for fungal, bacterial and viral diseases):</p> <ul style="list-style-type: none"> <li>• Use resistant varieties</li> <li>• Synchronize planting</li> <li>• Remove host plants (weeds on bunds, rice stubble or volunteer rice)</li> <li>• Keep the environment between soil and plant canopy either dry or moist (depending on the disease)</li> <li>• Planting at low densities</li> <li>• Balanced nutrient application (avoiding excessive use of nitrogen)</li> <li>• Biological control agents, e.g. Trichoderma</li> </ul> <p>Acceptable chemical disease management options for fungal diseases meet all of the following criteria:</p> <ul style="list-style-type: none"> <li>• Where feasible, non-chemical methods are used</li> <li>• It is applied only if non-chemical methods are not sufficiently effective on their own</li> <li>• Fungicide application should not be used after flowering (within 35 days of harvest)</li> <li>• Fungicide application should only be used in scenarios with high risk of fungal disease (according to recent history and predicted weather patterns)</li> </ul> <p>Fungicide treatment of seeds is allowable for direct-seeded systems</p>	a) Diseases are managed without use of chemical control.	10
			b) Fungal panicle diseases with clear historical evidence in the field (e.g. false smut, dirty panicle, neck and panicle blast) are managed with 1 fungicide application, only in the conditions for appropriate use. .	5
			c) Fungal diseases are managed with maximum 2 fungicide applications per crop cycle, only in the conditions for appropriate use.	2
			d) Diseases are not effectively managed or fungicides are applied in excess of requirements.	0
8	Mollusk management	<p>Non-chemical mollusk control options include:</p> <ul style="list-style-type: none"> <li>• Physical control (vigilant destruction of egg masses, hand-picking of snails, baiting- and capturing, maintaining saturation without standing water during the vulnerable period)</li> <li>• Promotion of predators (birds)</li> <li>• Use of sturdier seedlings during transplanting</li> <li>• Crop rotation or extended dry fallow period</li> </ul> <p>Appropriate use of molluskicides (chemical or organic) follows principles of IPM and must meet all of the following criteria:</p> <ul style="list-style-type: none"> <li>• Should not be used before manual transplanting (worker safety)</li> <li>• Used only within first 3 weeks after crop establishment</li> </ul>	a) Mollusk pests are managed without use of molluskicides	10
			b) Mollusk pests are managed with maximum 1 application of molluskicides per crop cycle, but only if applied for rice younger than 30 days old.	5
			c) Mollusk pests are managed with a maximum of 1 molluskicide application per crop cycle, but it is done during fallow.	2
			d) Mollusk pests are not managed effectively (i.e. re-planting is necessary), or molluskicide is over-applied or applied on rice older than 30 days.	0
9	Rodent management	<p>Non-chemical rodent control options include:</p> <ul style="list-style-type: none"> <li>• Synchronised planting</li> <li>• Community rodent management, e.g. rat eradication campaigns, trap crops</li> <li>• Use of a trap crop</li> </ul>	a) Rodent pests are managed without use of rodenticides.	10
			b) Rodent pests are managed with maximum 1 application of rodenticide per crop cycle, but only if used before heading.	5

No	Indicator	Corresponding requirement	Level(s) of performance	Score
		<ul style="list-style-type: none"><li>• Trapping</li><li>• Hunting</li><li>• Use of narrow bunds (minimize rodent habitat)</li><li>• Promotion of predators (birds of prey, snakes)</li></ul> <p>Appropriate rodenticide use must meet all of the following criteria:</p> <ul style="list-style-type: none"><li>• Appropriate timing is to manage rodents during the vegetative growth phase of the crop so that they don't produce an outbreak during grain-filling.</li><li>• Only in response to current or historical evidence of rodent problems</li><li>• Rodenticides should be placed under protective cover, e.g. bamboo tubes or coconut husks, where they are not easily accessible to birds or exposed to rainfall</li></ul>	c) Rodent pests are managed with more than 1 application of rodenticide per crop cycle, but only if used before heading.	2
			d) Rodents are not managed effectively, or rodenticide is used too late to provide effective protection.	0
10	Bird management	Non-lethal bird control options include: <ul style="list-style-type: none"><li>• Synchronized planting</li><li>• Scare/deterrent devices</li><li>• Promotion of predators (e.g. birds of prey, shrikes)</li></ul>	Bird pests are managed without use of lethal control	10
			Bird pests are managed by live trapping and all non-pest species are released alive	5
			Birds are indiscriminately persecuted by killing, poisoning or hunting	0
Score (0-100)				

## B. Health and Safety (PI No. 10)

No	Indicator	Corresponding requirement	Level(s) of performance	Score
1	Incidence of work-related accidents	<p>The frequency of work-related accidents resulting in minor and major injuries or ill health for workers or any person in or outside the farm.</p> <p>Examples of accidents that could result in injuries or ill health include but are not limited to:</p> <ul style="list-style-type: none"> <li>Fires, explosions, emissions, spills, accidents with vehicles or machinery, collapses, cuts</li> </ul> <p>Examples of injuries or ill health include but are not limited to:</p> <ul style="list-style-type: none"> <li>Fractures, cuts, infections, burns, respiratory and other diseases related to pesticide use, snake bites, leptospirosis</li> </ul> <p>We distinguish a minor and major degree of severity of injuries or ill health:</p> <ul style="list-style-type: none"> <li>Minor: injuries or diseases with a short-term impact and that require medical assistance or cause to miss at least one day of work</li> <li>Major: semi-permanent, permanent injury or ill health diseases or death</li> </ul>	a) No minor and major work related injuries or ill health	10
			b) No major work related injuries or ill health, but minor cases in a lower frequency compared to the last crop cycle	5
			c) Any major work related injuries or minor cases in an equal or higher frequency compared to the last crop cycle	0
2	Safety instructions and first aid	Workers, including working household members, receive regular safety instruction to prevent work related accidents or diseases, and first aid supplies are available on-farm	a) No workers or working family members, and first aid supplies are available on-farm.	10
			b) Workers, including working household members, receive regular safety instruction and first aid supplies are available on-farm.	10
			c) Workers, including working household members, receive regular safety instruction, but no first aid supplies are available on-farm.	5
			d) There is no safety instruction and there are no first aid supplies available on-farm.	0
3	Calibration	Tools and equipment for farm operations and post-harvest processed are frequently maintained and calibrated.	a) Calibration and maintenance within current crop cycle.	10
			b) Calibration and maintenance within the past 2 years.	5
			c) No calibration and maintenance within the past 2 years.	0
4	Training pesticide applicators	Pesticide applicators receive training on handling and use of pesticides.	a) There is no use of pesticides.	10
			b) Pesticide applicators participated in a training session in the past 3 years.	10
			c) Pesticide applicators participated in a training session in the past 5 years.	5
			d) Pesticide applicators did not participate in a training session in the past 5 years.	0



5	Personal Protective Equipment (PPE)	Pesticide applicators use good quality Personal Protective Equipment (PPE), including: <ul style="list-style-type: none"><li>gloves</li><li>masks</li><li>boots</li><li>protective clothing.</li></ul> Protective clothing is washed after use.	a) There is no use of pesticides.	10
			b) Pesticide applicators use at least 3 of the listed PPE items, but always gloves, (or at least what is required on the product label) of good quality and clothing is washed after use.	10
			c) Pesticide applicators use at least 2 of the listed PPE4 items, but always gloves, of good quality and clothing is washed after use.	5
			d) Pesticide applicators use less than 2 of the 4 items, or do not use gloves, or use items of low quality, or clothing is not washed after use.	0
6	Washing and changing facility	Washing and changing facilities are available for pesticide applicators.	a) There are no workers employed who apply pesticides.	10
			b) Washing and changing facilities are available.	10
			c) A washing or changing facility is available.	5
			d) No washing or changing facility is available.	0
7	Applicator restrictions	Pesticides are not applied by pregnant or lactating women, by children below 18 years, or by persons who suffer from chronic or respiratory diseases.	a) There is no use of pesticides.	n/a
			b) Pesticides are not applied by pregnant or lactating women or by children below 18 years, or by persons who suffer from chronic or respiratory diseases.	3
			c) Pesticides are applied by pregnant or lactating women or by children below 18 years, or by persons who suffer from chronic or respiratory diseases.	0
8	Re-entry times	Recommended re-entry times after use of pesticides are observed and communicated (or 48 hours if label does not give a recommendation).	a) There is no use of pesticides.	10
			b) Recommended, or 48-hours re-entry times are observed and communicated by placing warning signs on the fields.	10
			c) Recommended, or 48-hours re-entry times are observed and communicated verbally.	5
			d) Recommended, or 48 hours re-entry times are not observed or not communicated.	0
9	Pesticide storage	Pesticides and inorganic fertilizers (including empty containers) are labeled and stored in a locked place, separate from fuel, food and out of reach of children.	a) There is no use of pesticides or inorganic fertilizers.	10
			b) Pesticides and inorganic fertilizers are labeled and stored in a locked and separate place.	10
			c) Pesticides and inorganic fertilizers are labeled and stored in a general farm storage area.	5
			d) Pesticides and inorganic fertilizers are not labeled or stored.	0
10	Pesticide disposal	Empty pesticide containers and obsolete pesticides are properly disposed of.	a) There is no use of pesticides.	10
			b) Farmer participates in a collection, return or disposal system.	10
			c) In absence of such a system: <ul style="list-style-type: none"><li>empty containers rinsed 3 times with water and made unusable by crushing or puncturing before burying them on the farm and are not recycled.</li><li>surplus spray and wash water is applied over an unmanaged part of the farm, away from water bodies.</li><li>obsolete pesticides (past shelf life or banned pesticides) are returned to the dealers and if not possible disposed of in a manner that minimizes exposure to humans and the environment.</li></ul>	10
			d) There is a collection, return or disposal system, but it is not used. In absence of such a system, empty pesticide containers and obsolete pesticides are not disposed of as described under c).	0

## C. Child Labor (PI No. 11)

No	Indicator	Corresponding requirement	Level(s) of performance	Score
1	Employment of children <15 years old as permanent or seasonal workers	Children below 15 years are not engaged as permanent or seasonal workers. If local legislation has established a higher minimum age, this higher age applies. Age of employees is always verified (ILO Convention 138).	<ul style="list-style-type: none"><li>a) There are no children below the minimum age are working on the farm, unless they are members of a small scale family farm, and the following conditions are met:<ul style="list-style-type: none"><li>they perform light age-appropriate duties,</li><li>the work is not harmful to their health and development,</li><li>the work does not interfere with their education,</li><li>the work does not exceed 14 hours per week,</li><li>children are always supervised by an adult.</li></ul></li></ul>	25
			b) Children below the minimum age are working on the farm, but there are deliberate and evidenced efforts to stop the children from working and to get them into education.	10
			c) Children below the minimum age are working on the farm, and no deliberate and evidenced efforts were made to stop the children from working and to get them into education.	0
2	Hazardous work	Children below 18 years do not conduct hazardous work or any work that jeopardizes their physical, mental or moral wellbeing (ILO Convention 182). The following conditions are met: <ul style="list-style-type: none"><li>Children do not carry heavy loads,</li><li>The work is not at dangerous locations,</li><li>The work is not at night (between 22.00 pm and 06.00 am),</li><li>Children do not use harvest knives,</li><li>Children do not work with dangerous substances or equipment</li></ul>	a) There are no children below 18 years working on the farm.	25
			b) Children below 18 years are working on the farm and all listed conditions are met.	25
			c) Children below 18 years are working on the farm and they use harvest knives, but all of the other listed conditions are met.	10
			d) Children below 18 years are working on the farm, and one or more of the other listed conditions are not met.	0
3	Education	Children living on the farm in the age of compulsory schooling go to school all year long.	a) There are no children living on the farm within the age of compulsory schooling.	50
			b) Children living on the farm within the age of compulsory schooling go to school all year long.	50
			c) Children living on the farm within the age of compulsory schooling go to school, but not all year long.	25
			d) Children living on the farm within the age of compulsory schooling do not go to school, but deliberate and evidenced efforts are taken to get them into education, e.g. by lobbying for a nearby school or by providing on-site schooling.	10
			d) Children living on the farm within the age of compulsory schooling do not go to school, and no deliberate and evidenced efforts are taken to get them into education.	0
Total score (0-100)				

## D. Women's Empowerment (PI No. 12)

No	Indicator	Corresponding requirement	Level(s) of performance	Score
1.	Women's control over decisions regarding household agricultural production	Women should have decision-making power over the choice of the products and markets of the household's agricultural production	a) Women have at least equivalent decision-making power	10
			b) Women have some but less than equivalent decision-making power	2
			c) Women have none or marginal decision-making power	0
2.	Women's control over decisions regarding their own labor input	Women should have decision-making power over how much labor they contribute to agriculture, the timing of their labor input and the type of activities they do	a) Women have at least equivalent decision-making power	10
			b) Women have some but less than equivalent decision-making power	2
			c) Women have none or marginal decision-making power	0
3.	Women's satisfaction regarding their labor input	Women's labor input in agricultural production should be in balance with their productive and domestic tasks, leisure and possible other income generating activities	a) Women are satisfied	10
			b) Women are partly satisfied (e.g. no balance during peak labor-requiring periods)	2
			c) Women are structurally unsatisfied	0
4.	Women's access to information and capacity building	Women should have access to information, training and extension services related to women activities	a) Women have equal access	10
			b) Women have less access	2
			c) Women have good access	0
5.	Women's access to seasonal resources for farm activities	Women should have decision-making power and equal access to seasonal resources for farm activities including hired labor, seeds, fertilizers, pest control products and credit	a) Women have at least equivalent decision-making power and equal access	10
			b) Women have some but less than equivalent decision-making power and less than equal access	2
			c) Women have none or marginal decision-making power and no access	0
6.	Women's control over long-term resources for farm activities	Women should have decision-making power and share ownership of long-term resources (decisions that are typically made =< once per year, which affect the whole farm, including: land, forests, gardens, livestock, agricultural equipment, irrigation system, credit, buildings)	a) Women have at least equivalent decision-making power and ownership	10
			b) Women have some but less than equivalent decision-making power or ownership	2
			c) Women none or marginal decision-making power or ownership	0
7.	Women's control over decision-making regarding household income	Women and men should have decision-making power for the total household income	a) Women have at least equivalent decision-making power	10
			b) Women have some but less than equivalent decision-making power	2
			c) Women have none or marginal decision-making power	0
8.	Women's control over their personal income	Women should have equivalent or greater control of income they generate themselves	a) Women have equivalent or greater control	10
			b) Women have some but less than equivalent control	2
			c) Women have no or very limited control	0
9.	Women's participation in collective-decision making	Women should be able to participate in group decision-making processes regarding rice production and marketing (e.g. irrigation scheduling, leadership committees of cooperatives, credit groups)	a) Women participate in group leadership, are active in group decisions and their voices are valued	10
			b) Women are present during group decisions, but their contributions are not given full weight	2
			c) Women are excluded from group decision making	0
10.	Violence against women	There must not be any violence that results in, or is likely to result in, physical, sexual or mental harm or suffering to women, including threats of such acts, coercion or arbitrary deprivation of liberty, whether occurring in public or in private life (UN resolution 48/104 of 20 December 1993)	a) There are no cases of violence	10
			b) There is at least one case of violence	0
Total score (0-100)				

\* In this indicator we refer to the main decision making female(s) in the household (generally spouses).

\*\* Agricultural production refers to any farm production, not only rice.