NATIONAL INTERPRETATION GUIDELINE

Sustainable Rice Platform (SRP) Standard for Sustainable Rice Cultivation (Version 2.1)

VGREEN, KU in collaboration with ACFS, Department of Rice, and GIZ

June 2023

1. INTRODUCTION

Thailand is one of the world's major rice producers and rice is an economically important agricultural commodity for the country. Based on the framework of the National Strategy (2018-2031) and the Sustainable Development Goals adopted by the United Nations, the Ministry of Agriculture and Cooperatives has developed a policy on sustainable agriculture that aims to: 1) support farmers to ensure that they earn adequate incomes from a variety of sources; 2) revise the organization of agricultural production so it meets the needs of the market; 3) manage the country's water resources in an integrated and unified manner to meet all needs; 4) increase the role of agricultural cooperatives from producing agricultural goods to also being effective market channels for those products; 5) prevent and punish corruption and other inappropriate behaviour by civil servants; and 6) reform the work of state agencies to be more transparent and open to inspection. The Rice Department is among the relevant government organizations responsible for transferring knowledge and promoting the improvement of rice production in Thailand.

The National Bureau of Agricultural Commodity and Food Standards (ACFS) is a governmental agency under the Ministry of Agriculture and Cooperatives with the mission to establish, control, and promote Thai agricultural standards along the value chain to ensure the quality and safety of agricultural commodities and foods, which enhance the well-being of the Thai people, environment, and economy. Furthermore, ACFS takes a leading role in participating in international intergovernmental organizations for the elaboration of standards and also participates in bilateral and regional negotiations on the technical barriers to trade in agricultural commodities and food to protect and secure national interests.

The ACFS has established a new Thai Agricultural Standard named "Sustainable Rice" in an effort to increase crop productivity, promote sustainable rice cultivation, and increase market opportunities for Thai rice in the global market. Concerns for quality, food safety, the economy, society, and the environment are all addressed in the standard.

This standard is based on the following documents:

- TAS 4400-2009. Good Agricultural Practices for Thai Hom Mali Rice.
- TAS 4401-2008. Good Agricultural Practices for Rice.
- TAS 4403-2021. Good Manufacturing Practices for Rice Mill and Rice Processing Plant.
- TAS 9060-2021. The Labelling of Agricultural Commodities.
- SRP. 2020. The SRP Standard for Sustainable Rice Cultivation (Version 2.1), Sustainable Rice Platform. Bangkok: 2020. Available Source: http://www.sustainable rice.org, Viewed December 2020.

2. NATIONAL CHAPTER

2.1 Development of National Chapter

An SRP National Chapter serves as a representative of the SRP and its global membership at the country level to promote the adoption of the SRP Standard for Sustainable Rice Cultivation among rice smallholders. Having collaborated with the Rice Department on implementing sustainable rice value chains in Thailand, GIZ Thailand was nominated as the initial host organization during a meeting of rice sector stakeholders held in March 2019.

The first Meeting of the National Working Group (NWG) was held in September 2019, co-convened by the Rice Department and GIZ Thailand. The NWG agreed on a three-phase approach for establishing (2019-2021), growing (2022-2026), and sustaining (2027-2031) the National Chapter. It also identified three priorities to be addressed by the National Chapter: (1) Smallholder rice farmers buy in and adopt sustainable rice cultivation practices, (2) Public-private partnerships drive change along the rice value chain, and (3) Consumer awareness of sustainable rice increases. In 2020, momentum continued to grow with the NWG working in subgroups to define joint activities under the priorities, culminating in agreement on vision, targets, and activities at the second Meeting of the NWG in October 2020 (see ***Table 1***). In 2021, the NWG subgroups made tangible progress on advancing agreed activities and reported on achievements at the third Meeting of the NWG held in December 2021. The fourth Meeting of the NWG has yet to be held.

Table 1 Identified potential activities (1st Meeting) and selected activities (2nd Meeting and 2021 Mid-Year Meeting).

Priorities	**Potential activities (1st Meeting)**	**Selected activities (2nd Meeting and 2021 Mid-Year Meeting)**
Smallholder rice farmers buy in and adopt sustainable rice cultivation practices	• Storytelling • Thai Language SRP Toolkit • Capacity Building of Master Trainers • Guidelines for understanding the SRP requirements • Quantifying Impact Using SRP Performance Indicators • Data Collection Tools	Develop materials and training curriculum on SRP in Thai **Develop National Interpretation Guidelines for Thailand**
Consumer awareness	• Public awareness of sustainable rice in the domestic market • Making Thai sustainable rice internationally known • Food safety through SRP • Roadshows	Develop key messages and communications materials on SRP for common use and tailored for different audiences

Priorities	Potential activities (1st Meeting)	Selected activities (2nd Meeting and 2021 Mid-Year Meeting)
Public-private partnerships to drive change along the rice value chain	• PPP models • Access to input and service suppliers • Academic partnerships	Engage the Ministry of Commerce, Thai Rice Exporters Association, Thai Rice Mills Association, and the Farmer Parliament

At the Mid-Year Meeting of the NWG on 16 June 2021, the NWG reviewed the progress made in developing an official Thai language translation of the SRP Standard. The purpose of an official translation is to increase the accessibility of Thai-speaking stakeholders to the SRP Standard, which is available only in English. With the official translation near complete, the NWG discussed the added benefits of developing a National Interpretation Guideline (NIG) of the SRP Standard for Thailand. The purpose of an NIG is to not only translate the SRP Standard into another language but to tailor the SRP Standard's requirements to be more specific to the Thai rice production context. The NWG reviewed the Protocol for Development of SRP National/Regional Interpretation Guidelines), which outlines the required benchmarking process to determine equivalence between the SRP Standard and a proposed NIG.

The NWG endorsed VGREEN[1] (Kasetsart University) to lead the development of a research proposal for submission to the Agricultural Research Development Agency (ARDA) on *Benchmarking of Thai Agricultural Standard for Sustainable Rice with Sustainable Rice Platform Standard for International Acceptance to Increase the Market Competitiveness to Move Towards Sustainable Rice Industry*. The proposal was approved, and it was suggested by ARDA to combine this work with another study on the *Analysis of life cycle sustainability issues of rice products to move towards sustainability (Phase 2)* to become one project entitled "**Life cycle sustainability assessment and sustainable rice standard adoption to enhance the marketing competitiveness to move towards sustainable Thai rice industry**" (January 2022 – June 2023). Under this project, the benchmarking of the Thai Agricultural Standard for Sustainable Rice with the SRP Standard for Sustainable Rice Cultivation is conducted by the VGREEN team and is supported by ACFS, Rice Department, and GIZ Thailand experts.

3. THAI AGRICUTULRAL STANDARD FOR SUSTAINABLE RICE

3.1 About ACFS

As part of the government's bureaucratic reform, the National Bureau of Agricultural Commodity and Food Standards (ACFS) was established in October 2002 under the Ministry of

[1] Meeting minutes are enclosed.

Agriculture and Cooperatives. Meanwhile, to bridge the gap and reinforce the work in agricultural commodities and food safety control, the Agricultural Standards Act was developed and eventually promulgated in 2008. The Agricultural Standards Committee, which has been given authority and duties as stipulated in the Act, has the ACFS designated as its secretariat office. This reform was done in response to the government's initiatives for well-organized coordination of food safety management "from farm to table" along the entire food chain.

The core functions of ACFS are to lead and coordinate the development and promotion of best practices and sustainable management of resources in the production of good-quality and safe agricultural commodities and foods through standardization, both at the national and international level and enforcement of the Agricultural Standards Act. Other important functions of the ACFS include accrediting certification bodies, enhancing trade competitiveness, and reducing non-tariff trade barriers for agricultural commodities and foods.

The following offices and divisions undertake ACFS's role and responsibility on standardization:

The "*Office of Standard Development*" is responsible for the establishment of Thai Agricultural Standards (TAS) and associated certification schemes. This office is therefore serving as the scheme owner for Thai Agricultural Standards.

The "*Division of Agricultural Standard Promotion*" is responsible for strengthening the performance of the inspection and certification system to support standard implementation.

The "*Division of Standard Accreditation*" serves as the National Accreditation Body (NAB) which is a signatory to the Asia Pacific Accreditation Cooperation (APAC) and the International Accreditation Forum (IAF) Mutual/Multilateral Recognition Arrangement for ISO/IEC 17065 Conformity Assessment -- Requirements for bodies certifying products, processes, and services in the scope of Product Certification, Good Agricultural Practices, Organic Agriculture and Management Systems.

The "*Division of Agricultural Standards Control*" is responsible for control, oversight, and monitoring of the enforcement of the TAS standards.

3.2 Agricultural Standard Development

According to the "Agricultural Standards Act," TAS standards can be voluntary or mandatory. Where it is expedient to establish standards, the Agricultural Standards Committee shall appoint a Technical Committee, which shall include a representative from the *Office of Standard Development* as a member and a secretariat, to develop draft standards for such agricultural commodities and submit them to the Agricultural Standards Committee for consideration. Upon submission of the draft standard by the Technical Committee for consideration, if the Agricultural Standards Committee so agrees to the details thereof and is of the opinion that the draft standard should be established as a mandatory or voluntary standard according to the recommendation of the Technical Committee, the Agricultural Standards Committee shall further submit it to the

Minister for consideration and issuing of the Ministerial Regulation on the determination of mandatory standards or the Ministerial Notification on the determination of voluntary standards for such agricultural commodities, whatever the case may be.

Figure 1 describes the overall process of developing TAS standards according to the Agricultural Standards Act, B.E. 2551 (2008). ACFS will take into account the importance and necessity of developing TAS standards based on such factors as stakeholder interests, health and environmental protection, and potential international trade issues. The standard development started with the establishment of a Technical Committee comprised of experts in the field related to the TAS standard to be developed from all sectors in a balanced proportion. The secretariat (selected from the *Office of Standard Development*) studies, collects, and conducts an analysis of all available data to develop the first draft standard, ensuring its applicability, fulfilling its objectives and proving responses to national interests. The Technical Committee will consider the technical content, and the revised draft standard will be called for comments from stakeholders and interested bodies, including the public. The technical committee will consider all feedback and finalize the draft standard with the support of the Scrutiny Subcommittee. The Agricultural Standards Committee will consider, as a final step, whether to approve and announce this as a voluntary or a mandatory standard.

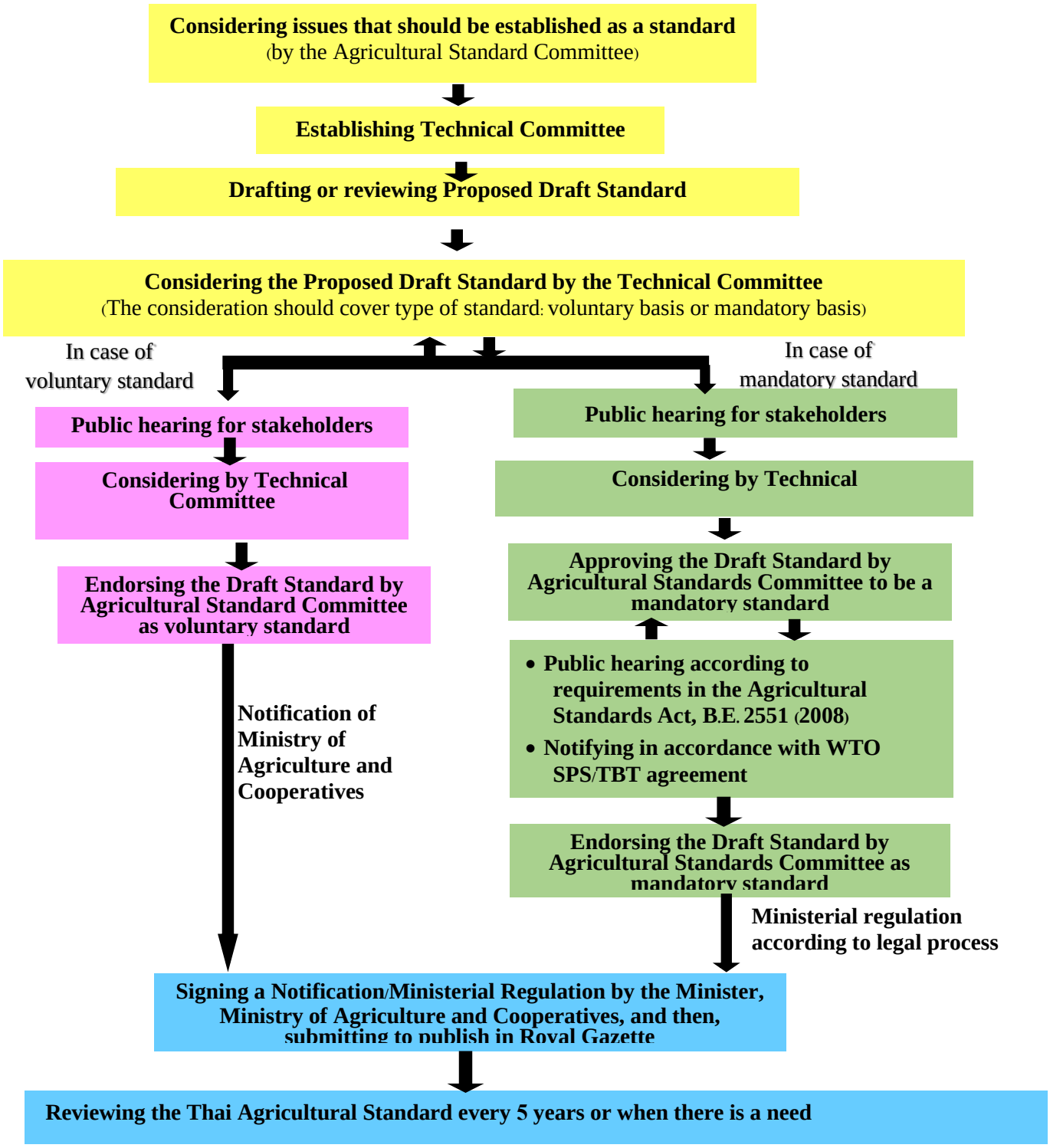

Figure 1 The process of Thai agricultural standard development.

3.3 Development of a TAS standard for sustainable rice

3.3.1 Sustainable rice production has to achieve the following objectives:

1) to produce rice that is of good quality and safe for consumption;
2) to protect the health and safety of farmers, operators, and communities;
3) to increase the yield, reduce the cost, and increase the revenue through the application by adopting resource conserving technologies, enhancing production efficiency through effective use of resources;
4) to enhance the ecosystem balance within the rice field and surrounding area, to conserve biodiversity, to protect and promote the ecosystem services, taking into account the environmental impacts, and to further reduce greenhouse gas emissions;
5) to properly treat labour on the basis of rights under the labour law in accordance with cultural contexts and local society;
6) to support farmers and business operators who produce sustainable rice products according to this agricultural standard with a traceability system throughout the supply chain and to prevent contamination and co-mingling with other non-sustainable rice in order to build consumers' trust.

3.3.2 The key principles in developing a TAS standard for sustainable rice were:

1) This standard is developed to respond to the interests of rice stakeholders in the country;
2) The scope of the standard is to cover rice cultivation practices and rice processing (milling) activities, and it is applied to paddy, partially-milled rice, brown rice, and white rice
3) The requirements that are related to rice cultivation practices aim to be consistent with the requirements of the SRP Standard (Version 2.1) while ensuring they are compliant with national frameworks and are further tailored to local contexts;
4) Each requirement that is related to rice cultivation practices and that aims to be consistent with the requirements of the SRP Standard (Version 2.1) adopts the scoring method in the SRP Standard; in all cases, the required level of compliance is not lower than the essential compliance level (threshold) specified in the SRP Standard. In some cases, the required level of compliance is adjusted (i.e., increased) according to the national laws and regulations and/or the in-field implementation (i.e., 4.1.3, 4.2.3, 4.3.1.1, 4.3.1.3, 4.5.6, 4.6.5, 4.6.7, 4.7.2, 4.7.8);
5) Each requirement identifies the level of implementation and/or inspection (e.g., individual rice farmers, rice farmer groups, group of stakeholders) to clearly indicate which sector is responsible for such requirement;[2]

[2] The SRP Standard uses icons for this purpose: 

6) A segregation system must be in place to ensure there is no contamination with non-sustainable paddy or sustainable rice (e.g., covering harvesting machines, transport vehicles, storage, rice milling, and packaging) along with measures for controlling the integrity of sustainable rice throughout its production to achieve "Chain of Custody";

7) Principles on good hygiene practices and good manufacturing practices should be considered when considering the requirements for processing sustainable paddy into sustainable rice;

8) All comments received from stakeholders and the in-field practices of farmers should be taken into consideration together with the SRP Standard to ensure the feasibility and acceptance of the TAS standard;

9) The scoring method is not applied for the additional requirements related to rice cultivation practices that are included in the TAS standard, but are not contained in the SRP Standard; scoring is also not applied for requirements on rice milling and processing. These additional requirements are all mandatory, and the conformity assessment method is applied (i.e., compliance or non-compliance); and

10) It is planned that claims can only be pursued if a minimum score of 90% is achieved, all adjusted thresholds are met, and all mandatory requirements involving segregating systems and hygiene practices throughout the rice production chain are met.

Following the process of Thai agricultural standard development (***Figure 1***), the activities undertaken to develop a TAS standard for sustainable rice are described in ***Table 2***. The development process was from July 2020 - October 2021, with the endorsement of the draft standard by the Agricultural Standard Committee as a voluntary standard on 16 March 2022.

Table 2 Overall activities undertaken to develop the TAS standard for sustainable rice.

Activities	Date
Considering an issue that should be established as a standard (by the Agricultural Standards Committee)	16 July 2020
Establishing a Technical Committee on the Elaboration of Thai Agricultural Standard on Sustainable Rice	16 September 2020
Drafting Standard (by the Secretary of TC)	September 2020 – January 2021
Posting the first draft of the standard on the ACFS website for comments	21 January – 23 March 2021
Considering the Proposed Draft Standard by the "Technical Committee on the Elaboration of Thai Agricultural Standard on Sustainable Rice"	- 1st meeting on 3 March 2021 - 2nd meeting on 22 April 2021 - 3rd meeting on 4 November 2021
Posting the amended Proposed Draft Standard on the ACFS website for comments	3 May – 11 June 2021
Public hearings for stakeholders	14 July 2021
Considering by the "Scrutiny Subcommittee on Agricultural Standards Related to Plant and Plant Products (SSCP)"	- 1st meeting on 19 August 2021 - 2nd meeting on 20 August 2021 - 3rd meeting on 23 August 2021 - 4th meeting on 22 September 2021 - 5th meeting on 5 October 2021
Endorsing the Draft Standard by Agricultural Standards Committee as a voluntary standard	16 March 2022
Signing Notification by the Minister of the Ministry of Agriculture and Cooperatives	17 May 2022
Publishing in the Royal Gazette	12 July 2022
Standard Editing (English version) by Sub-committee, (SSEE)	- 1st meeting on 15 June 2022 - 2nd meeting on 24 June 2022 - 3rd meeting on 5 July 2022 - 4th meeting on 11 July 2022 - 5th meeting on 2 August 2022 - 6th meeting on 3 August 2022 - 7th meeting on 8 August 2022

3.4 Applicability of requirements in TAS for Sustainable Rice

3.4.1 Rice cultivation

Certain requirements may be non-applicable in some situations; these will be excluded from the scoring. Non- applicability (n/a) may exist in the following cases:

- When a farmer produces under rainfed conditions (no irrigation), requirements in Section 4.3.2, Section 4.3.3, Section 4.3.4, and Section 4.3.5 shall not apply.
- When a farmer does not dry his/her rice himself/herself, the requirement in Section 4.6.4 shall not apply.
- When a farmer does not paddy store his/her rice, the requirement in Section 4.6.5 shall not apply.
- When a farmer has no children under the age of 18 working on the farm, the requirement in Section 4.8.2 shall not apply.
- When a farmer has no children of school age, the requirement in Section 4.8.3 will not apply.
- When a farmer has no hired workers, the requirements in Section 4.8.4, Section 4.8.5, Section 4.8.6 and Section 4.8.7 shall not apply.

3.4.2 Rice processing

The ACFS places a high priority on the safety and integrity of "sustainable rice," certified according to the Thai Agricultural Standard for Sustainable Rice. The requirements related to hygiene practices and control of the chain of custody are therefore mandatory. Manufacturers or farmers who produce sustainable rice products such as brown rice, milled rice, or colour rice must adhere to all requirements in Sections 4.9 and 4.10. Scoring is not needed, and the requirements must be met.

Certain requirements may be non-applicable in some situations; these will be excluded from the assessment. Non- applicability (n/a) may exist in the following cases:

- When a manufacturer or a farmer produces only rice products in consumer packages, the requirements in Section 4.10.1.2 shall not apply.
- When a manufacturer or a farmer produces only rice product in non-retail containers (B2B products), the requirements in Section 4.10.1.1 shall not apply.

3.5 Structure

Thai Agricultural Standard for Sustainable Rice comprises 53 requirements structured under 10 themes (see ***Table 3***). There are two additional themes, Sections 4.9 and 4.10, compared to the SRP Standard for Sustainable Rice Cultivation, version 2.1. These two sections cover the processing of paddy into sustainable rice products and labelling and claim of rice products. The details in these sections specify requirements of chains of custody (CoC) as well as traceability.

Table 3 Themes and Requirements in the TAS for Sustainable Rice

4.1 Farm management	**4.2 Pre-planting**	**4.3 Water use**	**4.4 Nutrient management**	**4.5 Integrated Pest Management (IPM)**
4.1.1 crop calendar 4.1.2 records and record keeping 4.1.3 training	4.2.1 food safety: heavy metals 4.2.2 soil salinity 4.2.3 land conversion and biodiversity 4.2.4 invasive species 4.2.5 land levelling 4.2.6 quality rice seeds	4.3.1 water management 4.3.2 irrigation system at a community level 4.3.3 inbound water quality 4.3.4 groundwater extraction 4.3.5 drainage	4.4.1 inorganic or organic nutrient management 4.4.2 selection of organic fertiliser 4.4.3 selection of inorganic fertiliser	4.5.1 weed management 4.5.2 insect management 4.5.3 disease management 4.5.4 golden apple snail management 4.5.5 rodent management 4.5.6 bird management

4.6 Harvest and Post-Harvest Handling	**4. 7 Health and Safety**	**4.8 Labour Rights**	**4.9 Processing of Paddy to Sustainable Rice Products**	**4.10 Labelling and Claim**
4.6.1 timing of harvest 4.6.2 harvest equipment and machinery 4.6.3 drying time 4.6.4 drying technique 4.6.5 rice storage 4.6.6 rice stubble 4.6.7 rice straw	4.7.1 safety instruction and first aid 4.7.2 tools and equipment 4.7.3 training on pesticide application 4.7.4 personal protective equipment 4.7.5 washing and changing 4.7.6 restrictions for pesticide application 4.7.7 re-entry after pesticide application 4.7.8 pesticide and chemical storage 4.7.9 pesticide disposal	4.8.1 child labour 4.8.2 hazardous work 4.8.3 education 4.8.4 forced labour 4.8.5 discrimination 4.8.6 freedom of association 4.8.7 wages	4.9.1 purchasing 4.9.2 processing of paddy to rice products (milling and quality improvement) and packing 4.9.3 rice storage 4.9.4 transportation 4.9.5 document and record of sustainable rice products	4.10.1 labelling for consumer and non-retail containers 4.10.2 labelling and claim as sustainable rice

3.6 Scoring

3.6.1 Scoring methods for rice cultivation

TAS for Sustainable Rice uses scoring methods similar to the SRP Standard on Sustainable Rice Cultivation. Thus, the standard can be used both for assessment and as a directional improvement tool to promote farmer adoption, in particular the practices on-farm level done by farmers or groups of farmers, which are expressed in Section 4.1 to Requirement Section 4.8.

At the farm level, each level of compliance corresponds to different points. The highest compliance level in most requirements scores 3 points. Most requirements have additional intermediate compliance levels with 2 points or 1 point. All requirements (except requirements in Sections 4.9 and 4.10) have made explicit the lowest level of compliance, scoring zero points. There are a few exceptions to the maximum scores per requirement. The requirement in Section 4.4.1 on Nutrient management: Inorganic or Organic Nutrient Management has a maximum of 6 points and all requirements in the health and safety theme have a maximum score of 2 points. These changes have been made to obtain a balanced weighting over the different themes. The relative weighting per theme is presented in ***Figure 2***.

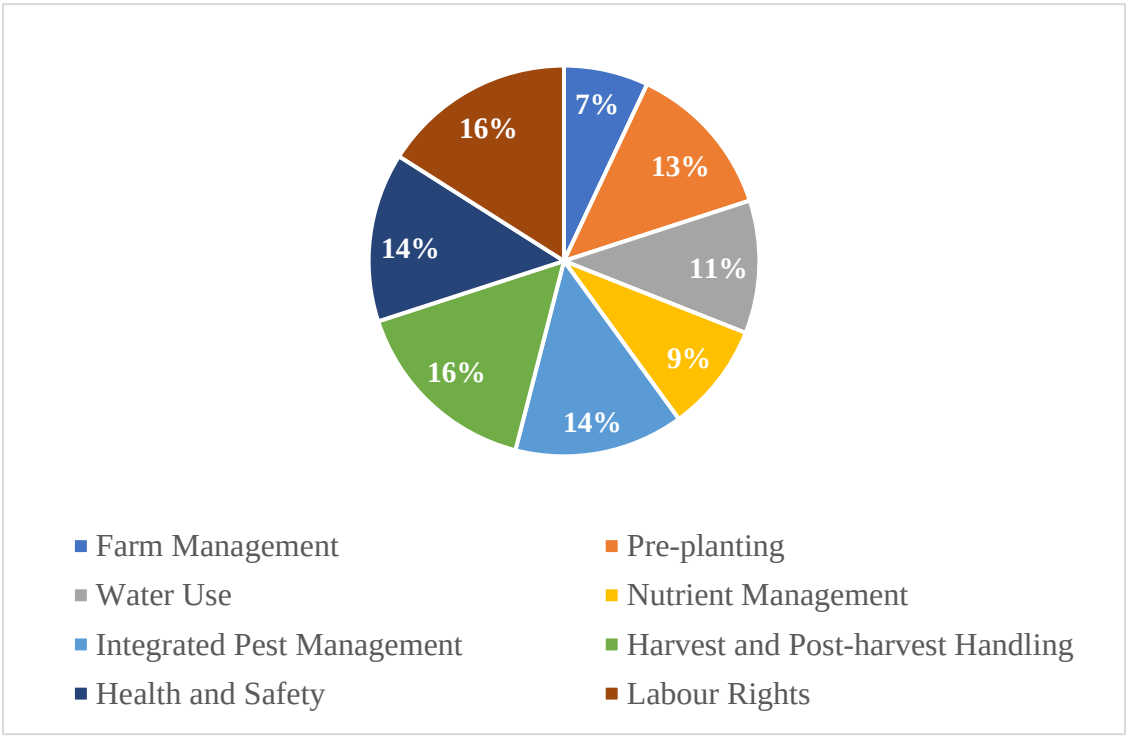

Figure 2 Weighting scores by theme at the farm level

The total score against the TAS Standard for Sustainable Rice 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 achievable number of points (132), multiplied by 100.

$$\text{Compliance Score at farm level (0-100)} = \frac{Total\ number\ of\ points\ corresponding\ to\ actual\ performance}{Maximum\ number\ of\ points\ possible} \times 100$$

In case group of farmers, the compliance score at farm level shall be calculated from the average score of sampled farms.

Certain requirements may be non-applicable in some situations; these will be excluded from the scoring. Non- applicability (n/a) may exist in the following cases:

- When a farmer produces under rainfed conditions (no irrigation), requirements in the Section 4.3.2, Section 4.3.3, Section 4.3.4, and Section 4.3.5 shall not apply.
- When a farmer does not dry his/her rice himself/herself, the requirement in the Section 4.6.4 shall not apply.
- When a farmer does not paddy store his/her rice, requirement in the Section 4.6.5 shall not apply.
- When a farmer has no children below the age of 18 working on the farm, the requirement in the Section 4.8.2 shall not apply.
- When a farmer has no children of school age, the requirement in the Section 4.8.3 will not apply.
- When a farmer has no hired workers, the requirements in the Section 4.8.4, Section 4.8.5, Section 4.8.6 and Section 4.8.7 shall not apply.

However, due to the context regarding rice farming, the conformity assessment system, and laws and regulations of Thailand, the Technical Committee on the Elaboration of Thai Agricultural Standard on Sustainable Rice decided to modify scores and scoring methods as well as to include additional requirements, compared to the SRP's Standard. The modifications in TAS for Sustainable Rice are summarised as follows:

- additional mandatory requirements that farmers must comply with, if applicable, are in Section 4.1.2.2, Section 4.1.2.3, Section 4.1.2.4, Section 4.7.6.2, Section 4.7.6.3, Section 4.8.2.1, Section 4.8.2.3.

- the thresholds are set to higher points than those of SRP's Standard, namely in Section 4.2.3, Section 4.3.1.1, Section 4.3.1.3, Section 4.3.4, Section 4.5.6, Section 4.6.1, Section 4.6.5, Section 4.6.7, Section 4.7.2, Section 4.7.8.

Since the conformity assessment system under Agricultural Standard Act, B.E. 2551 (2008) is a third-party assessment. Generally, the decisions are made based on either compliance or non-compliance. The thresholds, indicated by an asterisk (*) next to the corresponding points, suggest the level of compliance. Therefore, the points below such thresholds are intentionally omitted.

3.6.2 Scoring method for rice milling and processing

The ACFS recognized the food safety and integrity of "sustainable rice" certified according to the Thai Agricultural Standard for Sustainable Rice so that the requirements related to hygiene practices and control of a chain of custody are mandatory compliance. Manufacturers or farmers who also produced sustainable rice products such as brown rice, milled rice, and colour rice must meet all requirements in Section 4.9 and Section 4.10 (if applicable). In this case, scoring and weighing are not needed and the requirements must be complied with. The objectives of those requirements are as follows:

- Ensure the use of certified sustainable paddy as raw material in the milling and processing of sustainable rice products;
- Maintain the integrity of "sustainable rice" and prevent co-mingling of non-sustainable rice by clear separation throughout the production chain;
- Ensure food safety and food suitability of sustainable rice products by applying good hygiene practices or good manufacturing practices;
- Ensure the ability in traceability to facilitate the inspection of the effectiveness of chain of custody control via document and record;
- Ensure labelling and claim corresponded to relevant national laws and regulations and the certification scheme.

Themes of requirements for the processing of paddy to sustainable rice products, and labelling and claim are shown in ***Figure 3***.

Figure 3 Themes of requirements applied for rice mill and rice processing plant

Certain requirements may be non-applicable in some situations; these will be excluded from the scoring. Non- applicability (n/a) may exist in the following cases:

- When a manufacturer or a farmer produces only rice products in a consumer package, requirements in the Section 4.10.1.2 shall not apply.
- When a manufacturer or a farmer produces only rice products in non-retail containers, requirements in the Section 4.10.1.1 shall not apply.

3.7 Claims

TAS for Sustainable Rice is established by virtue of the Agricultural Standards Act, B.E. 2551 (2008). The Act, in its Chapter VII, indicates details for Standard Certification Marks, which is a third-party certification system. Section 54 of Chapter VII mentions the types of standard certification marks for displaying upon agricultural commodity as well as the characteristics, and display of the mark shall be in accordance with the rules, procedures, and conditions prescribed by the Ministerial Regulation, namely Ministerial Regulation concerning Characteristics, Usage and Display of Certification Mark for Thai Agricultural Standard B.E. 2563 (2020). Currently, TAS for Sustainable Rice does not provide any recommendation on the wording or claim statement to be put on the label of certified product but details will be elaborated further in its corresponding Certification Scheme.

TAS for Sustainable Rice offers a framework to enable users to use a certification mark to show that their products fully comply with the requirements of TAS for Sustainable Rice. This is a third-party certification. Producers who can use the certification mark must demonstrate full compliance, i.e. meeting the following conditions:

- meet at least the essential compliance level (threshold) for each requirement in TAS for Sustainable Rice is indicated by an asterisk (*)

- comply with all the compulsory requirements indicated by the red star (★).

- achieve a minimum score of 90% on the 1-100 scale and meet the essential compliance level (threshold) for all applicable requirements.

The mark can then be displayed on the product itself or label, packaging, or tag. The certification mark allowed to be displayed for products certified according to any voluntary standards, including that of TAS 4408-2022, is shown in ***Figure 4***.

Figure 4 Voluntary standard certification mark for displaying upon agricultural commodity certified in accordance with the voluntary standards, including TAS 4408-2022

4. BENCHMARKING

This section aims to provide a general comparison between the TAS for Sustainable Rice (4408-2022) and the SRP Standard (Version 2.1). ***Table 4*** provides comprehensive details on the key similarities and deviations that have been identified. The purpose of this benchmarking checklist is to compare betyween the TAS and SRP standard requirements.

4.1 Comparison of the TAS for Sustainable Rice and SRP Standard (Version 2.1)

Table 4 Comparison of the TAS for Sustainable Rice (4408-2022) and SRP Standard (Version 2.1).

SRP Standard (Version 2.1)	**TAS for Sustainable Rice (4408-2022)**	**Deviations (Content; Levels of compliance; Threshold)**	**Scoring**
COVER PAGE	**COVER PAGE**	Specific to TAS 4408-2022	
ACKNOWLEDGEMENTS	**ACKNOWLEDGEMENTS**	Specific to TAS 4408-2022	
INTRODUCTION	**INTRODUCTION**	Specific to TAS 4408-2022: • includes a list of normative references, including SRP Standard (Version 2.1) • includes the official announcement by MOAC of the establishment of TAS 4408-2022, aiming to enhance the quality and safety of rice	
SCOPE	**1. SCOPE**	Specific to TAS 4408-2022: • includes rice processing • includes paddy, partially milled rice, brown rice, and white rice	
LIST OF DEFINITIONS	**2. DEFINITIONS**	TAS 4408-2022 defines terms and definitions by first mapping them to the terms and definitions that have already been included in other ACFS agricultural standards. The following terms and definitions specific to TAS 4408-2022 are then added. • **alternate wetting and drying practice** • means a water management practice where irrigation is applied at intermittent intervals resulting in alternating wet and dry soil conditions.	

SRP Standard (Version 2.1)	TAS for Sustainable Rice (4408-2022)	Deviations (Content; Levels of compliance; Threshold)	Scoring
		Application of irrigation is based on water depletion measurement via a field water pipe (15 cm) below the soil surface as threshold) or soil water potential (-10 kPa) at 15 cm below the soil surface), which can save irrigation water without yield penalty, hence, also termed as "safe-AWD". • **invasive species** • means animals, plants, or other organisms introduced by man into places out of their natural range of distribution, where they become established and dispersed, generating a negative impact on the local ecosystem and species. Invasive species can negatively impact human health, the economy (i.e., tourism, agriculture), and native ecosystems. These impacts may disrupt the ecosystem processes, introduce diseases to humans or flora and fauna, and reduce biodiversity. • **cropping season** • means the duration of a single crop. For rice crops, the cropping season generally starts with land preparation and includes seeding either by drilling or sowing directly into the field and ends after the fallow period following the harvest. • **early maturing rice variety** • means a rice variety of which the growth duration from seeding to harvesting is less than the average range of days to reach harvest of a medium-maturing rice variety. However, this variety will be harvested not more than 110 days. • **medium maturing rice variety** • means a rice variety of which the growth duration from seeding to harvesting is around the average range of days to reach harvest of a general rice variety. This variety will be harvested approximately between 110 and 130 days. • **late maturing rice variety** • means a rice variety of which the growth duration from seeding to harvesting is longer than the average range of days to reach harvest of a	

SRP Standard (Version 2.1)	TAS for Sustainable Rice (4408-2022)	Deviations (Content; Levels of compliance; Threshold)	Scoring

		medium-maturing rice variety. This variety will be harvested more than 130 days.
		• **agrochemical**
		  • means commercially produced chemical substances that are generally synthetic substances such as chemical fertilisers, pesticides, soil conditioners.
		• **pesticide**
		  • means any substance intended for preventing, destroying, attracting, repelling, or controlling any pest, unwanted species of plants or animals during the production, storage, transport, distribution, and processing of food, agricultural commodities, or animal feeds or which may be administered to animals for the control of ectoparasites. The term includes substances intended for use as a plant growth regulator, defoliant, desiccant, fruit thinning agent, or sprouting inhibitor and substances applied to crops either before or after harvest to protect the commodity from deterioration during storage and transport. The term normally excludes fertilisers, plant and animal nutrients, food additives, feed additives, and animal drugs.
		• **hazardous substance type 4**
		  • means prohibited hazardous substances that are not allowed to be produced, imported, exported, transferred, or held in possession in accordance with the Ministry of Industry Notification entitled, "Inventory of Hazardous Substances" stipulated under the Hazardous Substance Act, B.E. 2535 (1992) and its amendments.
		• **pre-harvest interval**
		  • means the time interval - as indicated on the label or in the instruction for use of pesticides - between the last pesticide application and the recommended harvest date of that crop.	

SRP Standard (Version 2.1)	TAS for Sustainable Rice (4408-2022)	Deviations (Content; Levels of compliance; Threshold)	Scoring
		• **Integrated Pest Management (IPM)** • means an ecosystem management approach to keep pest populations below economic threshold 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, mechanical, physical, or biological methods to prevent and eliminate the pest.	
	3. OBJECTIVES	Specific to TAS 4408-2022	
REQUIREMENTS (No., Impact, Requirement, Level of compliance, Points)	**4. REQUIREMENTS**	The requirement numbers used in TAS 4408-2022 are the consequence of their placement within the document outline. They do not match the requirement numbers in the SRP Standard, but the sequence is the same. In all relevant requirements, edits have been made to use active voice to indicate the responsible sector (e.g., "farmers or farmer groups shall/should..."). This approach replaces the use of icons as adopted in the SRP Standard. Edits have also been made to confirm how standards are conventionally written to clearly indicate what measures are required or recommended (e.g., "shall", should") and in their proper sequence (e.g., "in the case of", "if/then"). In all relevant requirements, the lowest level of compliance (points) is marked as the threshold. **Contrary to the SRP Standard, there are no points awarded if performance is below the threshold.**	
FARM MANAGEMENT	**4.1 FARM MANAGEMENT**		
(1) Crop calendar	4.1.1 Crop calendar	Minor edits; no content adjustment.	**No change:**

SRP Standard (Version 2.1)	TAS for Sustainable Rice (4408-2022)	Deviations (Content; Levels of compliance; Threshold)	Scoring
			0, 1*, 2, 3
(2) Record keeping	4.1.2 Records and record keeping	It is an ISO principle to check all documentary requirements at this stage, therefore, all documents are listed here.	
	4.1.2.1 Overall data recording	Provides more specificity than the SRP Standard and adds data points of interest that are not required in the SRP Standard. • Basic data: (a) added seed source, (c) specified fuel for water pumping under input costs, (g) added harvesting time • Intermediate data: (a) added details and examples on preferred international units, (b) specified data to be recorded for pest management, (c) specified other information to be reported	**No change**: **0, 1*, 2, 3**
	4.1.2.2 Heavy metal	This requirement is not in the SRP Standard (Version 2.1). Added a mandatory requirement for an analytical result from the laboratory where the risk of heavy metal contamination is identified.	**C / NC**
	4.1.2.3 Sources of paddy rice	This requirement is not in the SRP Standard (Version 2.1). Added a mandatory requirement for a date of storage and quantity of paddy and rice products during storage and transport.	**C / NC**
	4.1.2.4 Record keeping	This requirement is not in the SRP Standard (Version 2.1). Added a mandatory requirement for evidence for at least 3 years. Producers are required to comply with this requirement, thus scoring is not given.	**C / NC**
(3) Training	4.1.3 Training	Requirements are rewritten to communicate needed actions more clearly and in their proper sequence.	**No change**: **0, 1*, 2, 3**
PRE-PLANTING	**4.2 PRE-PLANTING**		
(4) Heavy metals	4.2.1 Food safety: Heavy metals	Requirements are rewritten to communicate needed actions more clearly and in their proper sequence.	**No change**: **0, 1, 2*, 3, 3**

SRP Standard (Version 2.1)	TAS for Sustainable Rice (4408-2022)	Deviations (Content; Levels of compliance; Threshold)	Scoring
		Specifies that "standard levels" for heavy metals are those considered compliant with the quality requirements of soil used for trading, agriculture, and other activities under the Notification of the National Environment Board entitled "Elaborating Soil Quality Standards" issued under the Enhancement and Conservation of National Environmental Quality Act B.E. 2535. Specifies that the applicable national regulation is the Notification of the Ministry of Public Health (No. 414), B.E. 2563 under the Food Act, B.E. 2522 on Standards for Contaminants in Food. The maximum levels (MLs) of cadmium, lead, and arsenic in rice appearing in the Notification are the same as those in the current Codex Standard (CXS 193-1995).	
(5) Soil salinity	4.2.2 Soil salinity	Requirements are rewritten to communicate needed actions more clearly and in their proper sequence. Corrected unit for an acceptable level of salinity for soil to 3 dS/m (not 3 dS/cm), which is the symbol used in the International System of Units (SI) for decisiemens per meter.	**No change**: **0, 1*, 2, 3**
(6) Land conversion and biodiversity	4.2.3 Land conversion and biodiversity	References are made broadly to relevant laws, cabinet resolutions, criteria, and conditions prescribed by government agencies with mandates on this topic; land types of interest include high conservation value areas. Rice farming areas in Thailand are areas that have been cultivating rice for at least the last 2-3 decades. There has been no land conversion (e.g., from forests and protected areas) after 2009 (i.e., the year specified in SRP Standard). The levels of compliance options have been adjusted accordingly, and the threshold has been raised. There are relevant laws and regulations to regulate and control the use of land, including 15 Ramsar Sites, and 116 other important wetlands, namely:	**Modified**: **2*, 3**

SRP Standard (Version 2.1)	TAS for Sustainable Rice (4408-2022)	Deviations (Content; Levels of compliance; Threshold)	Scoring
		- National Park Act B.E. 2562 (2019) (the previous version was the National Parks Act, B.E. 2504 (1961)) - National Reserved Forests Act B.E.2507 (1964) - Enhancement and Conservation of the National Environmental Act, B.E. 2535 (1992) - Forest Act, B.E. 2484 (1941) In addition, the above-mentioned regulations have been effective much earlier than 2009, Thai farmers have to comply with these laws, therefore the requirement of TAS 4408 does not mention the year 2009 to avoid confusion. In other words, the lands used for agricultural cultivation have to comply with the above-mentioned regulations even before 2009. Therefore, land conversion is not an issue. For more information, rice farmers registered with DoAE will be checked in terms of land use type and land conversion.	
(7) Invasive species	4.2.4 Invasive species	Invasive species of plants or animals that do not live in the local context and that are introduced into the rice fields regardless of the year (i.e., the year 2009 specified in SRP Standard) are still invasive species according to the Cabinet Resolution of 20 February 2018 on Preventive, Control and Elimination Measures of Invasive Species, which the relevant agencies shall effectively implement in accordance with the guidelines. Effective management is led and carried out by government agencies as a mandate. Rice farmers are well aware of this issue. *Intentional* introduction of invasive species is not the case. The levels of compliance options have been adjusted accordingly.	**Modified:** **3***
(8) Leveling	4.2.5 Land leveling	Minor edits; no content adjustment.	**No change:** **2*, 3 (irrigated)** **3 (non-irrigated)**

SRP Standard (Version 2.1)	TAS for Sustainable Rice (4408-2022)	Deviations (Content; Levels of compliance; Threshold)	Scoring
(9) Pure quality seeds	4.2.6 Quality rice seeds	The use of quality rice seeds is required. In the local context, "Certified Seed" can also be called "Extension Seeds" or "Commercialized Seed".	**No change**: **2*, 3, 3**
WATER MANAGEMENT	**4.3 WATER USE**		
	4.3.1 Water management	Instructions in the SRP Standard are removed. Instead, requirements 4.3.1.1-3 are rewritten to clearly state the applicable case.	
(10.1) Rainfed production system	4.3.1.1 Rainfed production system	Requirements are rewritten to communicate needed actions more clearly and in their proper sequence. Added clarifying text for each measure to be implemented to cure uncertainties in the SRP Standard (e.g., specified that "appropriate time" refers to when there is consistent rainfall, and that bund preparation should take place before planting). In-field implementation of measures (1), (2), and (3) is the common practice of rice farmers in Thailand. The levels of compliance options have been adjusted accordingly, and the threshold has been raised.	**Modified**: **2*, 3**
(10.2) Irrigation system (flood-prone)	4.3.1.2 Irrigation production system - Lowland	Minor edits; no content adjustment.	**No change**: **1*, 2, 3**
(10.3) Irrigation system (not flood-prone)	4.3.1.3 Irrigation production system - Upland	Expert and public consultations determined that measures (2) and (4) in the SRP Standard were not a suitable threshold in the local context. However, measures (1) + (2) + (6) in the SRP Standard, which result in a higher number of points, were confirmed to be a common practice and an appropriate local threshold. The levels of compliance options have been adjusted accordingly, and the threshold has been raised.	**No change**: **1*, 2, 3**

SRP Standard (Version 2.1)	TAS for Sustainable Rice (4408-2022)	Deviations (Content; Levels of compliance; Threshold)	Scoring
		Re-ordered the listed measures to be implemented to follow the rational sequence/rice farming steps implemented during the season.	
(11) Irrigation system at community level	4.3.2 Irrigation system at community level	In-field implementation of measures (1), (2), and (3) is the common practice of rice farmers in Thailand. The levels of compliance options have been adjusted accordingly, and the threshold has been raised.	**Modified: 2*, 3**
(12) Inbound water quality	4.3.3 Inbound water quality	Requirements are rewritten to communicate needed actions more clearly and in their proper sequence. Documentation older than 3 years is *not* recognized (SRP permits documents older than 3 years). The levels of compliance options have been adjusted accordingly.	**Modified: 1*, 3**
(13) Groundwater extraction	4.3.4 Groundwater extraction	Groundwater extraction complies with national sustainable water policies. The applicable laws are specified in the footnotes. Measures (1), (2, and (3) are viewed as required, whereas SRP requires the implementation of any one of the three measures only. The levels of compliance options have been adjusted accordingly, and the threshold has been raised.	**Modified: 3***
(14) Drainage	4.3.5 Drainage	For consistency with other standards, in a flood year where a farmer may choose to drain within a shorter time than stated in the requirement, the farmer will "fail." The levels of compliance options have been adjusted accordingly.	**Modified: 2*, 3**
NUTRIENT MANAGEMENT	**4.4 NUTRIENT MANAGEMENT**		
(15) Nutrient management	4.4.1 Inorganic or organic nutrient management	Minor edits for clarity.	**Modified: 4*, 6**

SRP Standard (Version 2.1)	TAS for Sustainable Rice (4408-2022)	Deviations (Content; Levels of compliance; Threshold)	Scoring
		Measures (1) and (2) are viewed as required therefore a minimum of two measures must be complied with. The levels of compliance options have been adjusted accordingly.	
(16) Organic fertilizer choice	4.4.2 Selection of organic fertilizer	Minor edits for clarity. Application of organic fertilizers is desired (i.e., "shall be used") in the presence of favorable conditions. The levels of compliance options have been adjusted accordingly.	**Modified**: **2*, 2, 3**
(17) Inorganic fertilizer choice	4.4.3 Selection of inorganic fertilizer	Minor edits for clarity. "Registered" refers to inorganic fertilizers that can be used in rice cultivation that are recognized by national authorities and can be found in the relevant listings that they maintain.	**No change**: **3*, 3**
PEST MANAGEMENT	**4.5 INTEGRATED PEST MANAGEMENT**	Introductory text and explanation on IPM are moved to Annex B (as normative). The international list of banned substances is moved to 4.7.6.2 with the inclusion of banned pesticide lists (hazardous substances type 4) according to the Notification of the Ministry of Industry announcement entitled Inventory of Hazardous Substances under Hazardous Substance Act, B.E. 2535. This requirement is mandatory.	
(18.1) Weed management	4.5.1 Weed management	Minor edits for clarity. Specifies that product registration with the Department of Agriculture under MOAC is required in addition to the product(s) not appearing on the international lists mentioned in the SRP Standard. All principles of IPM are viewed as equally important. As such, measures (1), (2), (3), (4), and (5) are required as principal practices. The levels of compliance options have been adjusted accordingly.	**Modified**: **2*, 3, 3, 3**

SRP Standard (Version 2.1)	TAS for Sustainable Rice (4408-2022)	Deviations (Content; Levels of compliance; Threshold)	Scoring
(18.2) Insect management	4.5.2 Insect management	[Same as 4.5.1 above], and provides more restrictions on the use of board-spectrum insecticides based on Thailand's situation. In principle, broad-spectrum insecticides are not used during the first 40 days after planting. Broad-spectrum insecticides are also not used thereafter unless it is necessary following the advice of an agricultural extension officer.	**Modified**: **2*, 3, 3, 3**
(18.3) Disease management	4.5.3 Disease management	[Same as 4.5.1 above]	**Modified**: **2*, 3, 3, 3**
(18.4) Mollusc management	4.5.4 Golden Apple Snail management	[Same as 4.5.1 above]	**Modified**: **2*, 3, 3, 3**
(18.5) Rodent management	4.5.5 Rodent management	[Same as 4.5.1 above]	**Modified**: **2*, 3, 3, 3**
(18.6) Bird management	4.5.6 Bird management	Shooting (hunting) is viewed as non-compliant with the intention of "non-lethal" bird management. The levels of compliance options have been adjusted accordingly, and the threshold has been raised.	**Modified**: **2*, 3, 3**
HARVEST AND POST HARVEST	**4.6 HARVEST AND POST-HARVEST HANDLING**		
(19) Timing of harvest	4.6.1 Timing of harvest	It is specified that measure (1) in the SRP Standard is the common practice of rice farmers. The levels of compliance options have been adjusted accordingly, and the threshold has been raised.	**Modified**: **3***
(20) Harvest equipment	4.6.2 Harvest equipment and machinery	Requirements are rewritten to communicate needed actions more clearly. It is specified that measures (1) and (2) in the SRP Standard shall be followed by rice farmers who perform mechanical harvesting, as the desired practice. The levels of compliance options have been adjusted accordingly.	**Modified**: **3***
(21) Drying time	4.6.3 Drying time	Requirements are rewritten to communicate needed actions more clearly.	**Modified**:

SRP Standard (Version 2.1)	TAS for Sustainable Rice (4408-2022)	Deviations (Content; Levels of compliance; Threshold)	Scoring
		Eliminated SRP compliance level (d) as an option. The levels of compliance options have been adjusted accordingly.	**2*, 3, 3**
(22) Drying technique	4.6.4 Drying technique	Requirements are rewritten to communicate needed actions more clearly. Eliminated SRP compliance level (d) as an option. The levels of compliance options have been adjusted accordingly.	**Modified:** **2*, 3**
(23) Rice storage	4.6.5 Rice storage	It is specified that measures (1), (2), (3), and (4) are the minimum required to ensure food safety and are viewed as equally important. Added measure (6), to separately store paddy from other paddy to prevent co-mingling, as the TAS scope also covers processing. Requires that measures (1), (2), (3), (4), and the additional measure (6) on segregation must be applied. The levels of compliance options have been adjusted accordingly, and the threshold has been raised.	**Modified:** **2*, 3**
(24) Rice stubble	4.6.6 Rice stubble	Re-written to emphasize that burning is strictly prohibited as a baseline, in line with the national priorities for sustainable agriculture.	**No change:** **1*, 2, 3**
(25) Rice straw	4.6.7 Rice straw	Re-written to emphasize that burning is strictly prohibited as a baseline, in line with the national priorities for sustainable agriculture. It is desired that rice farmers undertake additional measures for rice straw utilization. The levels of compliance options were not changed.	**Modified:** **1*, 2**
HEALTH AND SAFETY	**4.7 HEALTH AND SAFETY**		
(26) Safety instruction and first aid	4.7.1 Safety instruction and first aid	Minor edits for clarity.	**No change:** **1*, 2**

SRP Standard (Version 2.1)	**TAS for Sustainable Rice (4408-2022)**	**Deviations (Content; Levels of compliance; Threshold)**	**Scoring**
(27) Tools and equipment	4.7.2 Tools and equipment	Maintenance and checking before use shall be done on a *yearly* basis in accordance with the crop production cycle (which is 1 or more growing seasons per year). The levels of compliance options have been adjusted accordingly, and the threshold has been raised.	**Modified**: **2***
(28) Training of pesticide applicators	4.7.3 Training of pesticide applicators	Minor edits for clarity.	**No change**: **1*, 2**
(29) Personal protective equipment (PPE)	4.7.4 Personal protective equipment (PPE)	Minor edits for clarity. Clarifies the scope that contractors should be informed and follow this requirement under the supervision of the farmers.	**No change**: **1*, 2, 2**
(30) Washing and changing	4.7.5 Washing and changing	Minor edits for clarity.	**No change**: **1*, 2**
(31) Applicator restrictions	4.7.6 Restrictions for pesticide application		
	4.7.6.1 Prohibited pesticide applicators	Minor edits for clarity.	**No change**: **2***
	4.7.6.2 Prohibited pesticides	This requirement is not in the SRP Standard (Version 2.1) as a stand-alone, though it is partly covered in the IPM section. Added this mandatory requirement, which is found in all TAS standards. Reference is made to the relevant Notification of the Ministry of Industry on Hazardous Substances.	**C / NC**
	4.7.6.3 Prohibited pesticides from destination countries	This requirement is not in the SRP Standard (Version 2.1). Added this mandatory requirement, which is found in all TAS standards.	**C / NC**
(32) Re-entry time	4.7.7 Re-entry after pesticide application	Minor edits for clarity.	**No change**: **1*, 2**

SRP Standard (Version 2.1)	TAS for Sustainable Rice (4408-2022)	Deviations (Content; Levels of compliance; Threshold)	Scoring
(33) Pesticide and chemical storage	4.7.8 Pesticide and chemical storage	Minor edits for clarity. Labelling *and* secure storage are essential to mitigate misuse and safety risks, which have been included in the good agricultural practices in Thailand. As such, both measures (1) and (2) are required. The levels of compliance options have been adjusted accordingly, and the threshold has been raised.	**Modified**: **2***
(34) Pesticide disposal	4.7.9 Pesticide disposal	Minor edits for clarity. The requirement still identifies a triple rinsing method for all empty pesticide container disposal due to the reduction of exposure risk to human health and the environment.	**No change**: **1*, 2**
LABOR RIGHTS	**4.8 LABOUR RIGHTS**		
(35) Child labor	4.8.1 Child labor	Minor edits for clarity.	**No change**: **3***
(36) Hazardous work	4.8.2 Hazardous work	-	
	4.8.2.1 Safety rules	This requirement is not in the SRP Standard (Version 2.1). Added this mandatory requirement, according to the national labour law.	**C / NC**
	4.8.2.2 Children and hazardous work	Minor edits for clarity. Specifies the applicable Labour Protection Act, B.E. 2541, and its amendments as the governing set of regulations defining hazardous work conditions.	**No change**: **3***
	4.8.2.3 Age data recording	This requirement is not in the SRP Standard (Version 2.1) as a stand-alone item, though it is mentioned in some requirements. It is added and mandatory, according to the national labour law.	**C / NC**
(37) Education	4.8.3 Education	Minor edits for clarity.	**No change**: **1*, 2, 3**

SRP Standard (Version 2.1)	TAS for Sustainable Rice (4408-2022)	Deviations (Content; Levels of compliance; Threshold)	Scoring
(38) Forced labor	4.8.4 Forced labor	Minor edits for clarity.	**No change**: **3***
(39) Discrimination	4.8.5 Discrimination	Minor edits for clarity.	**No change**: **3***
(40) Freedom of association	4.8.6 Freedom of association	Minor edits for clarity.	**No change**: **3***
(41) Wages	4.8.7 Wages	Minor edits for clarity.	**No change**: **3***
	4.9 PROCESSING OF PADDY TO SUSTAINABLE RICE PRODUCTS	This section is outside the scope of the SRP Standard but is mandatory for TAS standards to ensure chain of custody and transparency throughout the value chain.	**C / NC**
	4.9.1 Purchasing	This requirement is necessary for the traceability system.	**C / NC**
	4.9.2 Processing of paddy to rice products (milling and quality improvement) and packing	This requirement is necessary for good manufacturing and hygiene management practices.	**C / NC**
	4.9.3 Rice Storage	This requirement is necessary to ensure the segregation of sustainable rice from other rice to prevent contamination.	**C / NC**
	4.9.4 Transportation	This requirement is necessary to ensure the segregation of sustainable rice from other rice to prevent contamination as well as the hygiene management practices during transportation.	**C / NC**
	4.9.5 Document and record on sustainable rice products	This requirement is necessary to ensure the traceability system.	**C / NC**
	4.10 Labelling and claim	This requirement is necessary for labelling and claims according to the relevant local laws.	**C / NC**

SRP Standard (Version 2.1)	TAS for Sustainable Rice (4408-2022)	Deviations (Content; Levels of compliance; Threshold)	Scoring
	4.10.1 Labelling display method	This requirement is necessary for the labelling display method according to the relevant local laws.	**C / NC**
	4.10.2 Information displayed on the packaging	This requirement is necessary for the labelling display method according to the relevant local laws.	**C / NC**
ANNEX A: Risk assessment checklist for soil and water quality	**ANNEX A: Checklist for risk assessment on soil and water quality**	Minor edits for clarity.	
ANNEX B: Principles of Integrated Pest Management	**ANNEX B: Principles of Integrated Pest Management**	Moved content from SRP Standard IPM introduction section.	
ANNEX C: Alternate Wetting and Drying Technique	**ANNEX C: Alternate Wetting and Drying Technique**	Added an annex to detail information on Alternate Wetting and Drying techniques, to support farmers in conducting this practice in-field.	

Annex A to Thai Agricultural Standard for Sustantainble Rice (TAS 4408-2022)

(Normative)

Checklist for Risk Assessment on Soil and Water Quality

This checklist for risk assessment on soil and water quality is to be used in conjunction with the assessment on heavy metals (Section 4.2.1), on soil salinity (Section 4.2.2) and on inbound water quality (Section 4.3.3).

If all answers are "no", the farm is considered to be at low risk for any of the most common problems with soil or water quality. If any question is answered "yes", actions are suggested in the table below to address that specific risk.

Question	No	Yes	Recommended action (if the answer is "yes")
Part 1 Soil contamination risk			
1. Has any part of your rice field been used for any of the following during the past 50 years?			For questions 1 and 2, - study the types and sources of waste disposed on rice field; - check soil quality by having the soil tested for the contaminants that are most likely to be present in the waste, if there is no information about the type of waste or the testing result of heavy metal contamination, such as cadmium, arsenic, mercury, and lead, and persistent organic pollutants; - if the testing result of soil quality shows a level of contamination that is higher than the normal standard range, seek advice from an expert on soil remediation; - if the tests show nothing out of range, repeat the soil test once every 5 years (if the waste production has stopped) or yearly (if the waste production is continuing)
1) Sewage sludge application (Cadmium is most likely hazard)			
2) Industrial waste disposal			
3) Artisanal or industrial mining (Mercury, cadmium, lead and arsenic are most likely hazards)			
4) Mine drainage (Mercury, cadmium, lead and arsenic are most likely hazards)			
5) Battery recycling or disposal (Cadmium, lead and mercury are most likely hazards)			
2. Is your rice field adjacent to a busy road e.g., a highway, expressway? (Cadmium and lead from automobile exhaust are most likely hazards)			

Question	No	Yes	Recommended action (if the answer is "yes")
Part 1 Soil contamination risk			
3. Is your rice field located downwind from a coal-powered electrical plant (within 5 km [3/])? (Mercury is most likely hazard)			
4. Is your rice field located downstream from an active or former water treatment plant, livestock production facility, or fisheries operation?			
5. (During the past 50 years) have any of the following products been used on your rice field?			For 1) to 3) of question 5, if the agrochemical products containing compounds as specified in 1) to 3) of question 5 are applied on the rice field, - discontinue their use and seek expert advice that is applicable to the field; - find out about how much of all agrochemical products were used and when (for how many years, ending when); - test the soil for the contaminants of concern. If the tests show dangerous levels of contamination: • seek expert advice about soil remediation; • test the paddy produced on this rice field whether there are the same contaminants; • make and implement a plan for mitigating risk of exposure from the substances contaminated in the soil to yourself and to consumers, and repeat soil testing once every 5 years as required by the remediation plan.
1) Cadmium-containing fungicides such as cadmium carbonate, cadmium chloride, cadmium succinate, cadmium sebacate, others that consist of cadmium			
2) Mercury-containing fungicides such as phenyl mercuric acetate, calomel chloride, mercury chloride, others that consist of mercury			
3) Arsenic-containing pesticides such as arsenic acid, arsenic trioxide, arsonate, arsenite, aresonic acid, others that consist of arsenic			
4) Phosphate fertiliser from a high-cadmium source			

[3/] km is the symbol used in SI for "kilometer".

Question	No	Yes	Recommended action (if the answer is "yes")
Part 1 Soil contamination risk			
6. Have there been any reports of groundwater or surface water contamination in your surrounding with heavy metal such as arsenic, cadmium, mercury?			
7. Has your irrigation source ever tested over the standard limits for any contaminant?			

Question	No	Yes	Recommended action (if the answer is "yes")
Part 2 Soil and water salinity risk			
8. Has your irrigation source ever had high salinity levels?			For question 8 to12, - Check soil and irrigation water for salinity at least once a year, especially towards the end of the dry season. - seek expert advice on mitigation options if soil or water tests show salinity levels of concern (result of a laboratory test will show the salinity levels of concern).
9. Is your rice field located within 3 km of a body of salt water?			
10. Has your rice field received direct salt water intrusion within the past 5 years? (e.g., flood, typhoon waves, tsunami, etc.)			
11. Does your rice field experience tide-related changes in water table?			
12. Does your water table depth change by more than 10 cm between seasons?			
13. Have there been any government or community warnings in your area about soil or water salinization?			
14. Does your irrigation source get depleted towards the end of the dry season?			

Annex B

(**Normative**)

Principles of Integrated Pest Management

B.1 Principles of Integrated Pest Management (IPM) include:

1) surveying and evaluating pest threat and damage levels regularly (scouting);
2) using economic thresholds recommended by government officials involved in pest control;
3) evaluating all available pest control methods;
4) selecting a pest control method that maximises human safety, minimises environmental impact, is economically justifiable, and prevents food safety risks for all crops.

B.2 IPM combines preventive and pest control methods.

Preventive pest control methods help to manage conditions to avoid pest build-up and can include resistant varieties, crop rotation, intercropping, sanitation, ecological engineering, and others.

Pest control methods help to treat pest build-up that has occurred and can include mechanical control (e.g., hand weeding), biological control (e.g., biological control agents), and chemical control (e.g., synthetic pesticides).

B.3 This standard encourages ongoing preventive pest control actions, and punctual pest control actions in the right time when preventive methods are not effective on their own. Pesticides are used only if and when economic thresholds are exceeded and the severity of the pest is expected to cause significant damage or loss. Actions should be as targeted as possible to avoid unintended impacts. Measured actions can support cost-reduction for farmers.

B.4 Common preventive pest control methods and conditions for appropriate use of pesticides for six types of pests are as in Section 4.5.1 to Section 4.5.6.

4.2 Comparison of scoring methods for TAS for Sustainable Rice and SRP Standard (Version 2.1)

Table 5 provides the detailed information on the scoring method to indicate the levels of compliance in the SRP Standard (Version 2.1) and the adjusted levels of compliance, including the threshold used in the TAS for Sustainable Rice (4408-2022).

Table 5 Requirements and level of compliance of SRP Standard (Version 2.1) and TAS for Sustainable Rice (4408-2022).

SRP Standard (Version 2.1)			TAS for Sustainable Rice		
Requirement	**Level of compliance**	**Point**	**Requirement**	**Level of compliance**	**Point**
			4. REQUIREMENTS Sustainable rice production **shall** comply with the following requirements:		
Theme 1: Farm management			**4.1 Farm Management**		
(1) **Crop Calendar** A written crop calendar is developed in advance for each cropping season. If needed, it is updated to adapt to changing circumstances (e.g., weather, pest pressures). A crop calendar shows the expected dates of field activities, and the actual dates of	a) Crop calendar includes the expected and actual dates for all four activities (if applicable). b) Crop calendar includes the expected and actual dates for activities 1 and 2 (if applicable) only.	3 2 1*	**4.1.1 Crop Calendar** Farmers or farmer groups develop a written crop calendar in advance for each cropping season. If needed, the calendar is updated to adapt to changing circumstances (e.g., weather, pest pressures). A crop calendar shows the expected dates of field activities, and the actual dates of	a) Crop calendar shows the expected and actual dates for all four activities (if applicable). b) Crop calendar shows the expected and actual dates for activities 1) and 2) (if applicable) only. c) Crop calendar shows the expected and actual	3 2 1*

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implementation of those activities. Activities can include (if applicable): 1. Timing of major operations (e.g., land preparation, planting, harvest). 2. Timing of major fertilization (e.g., split plan) and water management activities (e.g., irrigation). 3. Timing of evaluating pest threat and damage levels (i.e., scouting). 4. Timing of labor and/or contracted services (e.g., machines).	c) Crop calendar includes the expected and actual dates for activity 1 only. d) There is no crop calendar, or it is otherwise incomplete. 	0	implementation of those activities. Activities **can** include (if applicable): 1) timing of major operations (e.g., land preparation, planting, harvest); 2) timing of major fertilisation (e.g., split plan) and water management activities (e.g., irrigation); 3) timing of evaluating pest threat and damage levels (i.e., scouting); 4) timing of labour and/or contracted services (e.g., machines).	dates for activity 1) only. d) There is no crop calendar, or it is otherwise incomplete.  	0
(2) Record Keeping			**4.1.2 Records and Record Keeping**		
Records are kept for each cropping season. These records shall at least reflect basic data level (easily collected by farmers) and should include data at the intermediate level (which may require collection by external partners). Basic data (if applicable) in local units:	a) Records are kept of applicable data at the intermediate level. b) Records are kept of applicable data using a mix of basic and intermediate data levels. c) Records are kept of applicable data at the basic data level.	3 2 1* 0	4.1.2.1 Farmers or farmer groups record rice cultivating activities performed in each cropping season as follows: 1) Relevant basic data, namely: a) field size; b) seed variety **and its source**; c) input costs (land rent, labour, seeds, agrochemicals, fuel for water pumping, agricultural services);	a) Records are kept of applicable data at the intermediate level. b) Records are kept of applicable data using a mix of basic and intermediate data levels. c) Records are kept of applicable data at the basic data level. d) No records are kept.	3 2 1* 0

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1. Field size 2. Seed variety 3. Input costs (land, labor, seed. agrochemicals, water, services) 4. Number of irrigations during and after land preparation 5. Fertilizer applied (number of times applied, amount applied, synthetic or organic) 6. Pesticide applied (number of times applied) 7. Amount of paddy harvested 8. Sales price of paddy Intermediate data (if applicable): 1. Same as above but local units are converted into international units 2. More precise data to enable quantitative analysis of sustainable practices applied, such as on: • Water management (e.g., irrigation water volume, total rainfall, number of days of	d) No records are kept. 		d) number of irrigations during and after land preparation (in case of irrigated production system); e) fertiliser application (number of times applied, amount applied, type of fertilisers – synthetic or organic – applied); f) number of times for the application of pesticide (if applied); g) **harvesting time** and amount of paddy harvested; h) sales price of paddy. 2) Intermediate data (can be collected by farmers or farmer groups in cooperation with groups of stakeholders [4/] or by groups of stakeholders): a) the above basic data in local units converted into international units, international system of units	 	

[4/] Group of stakeholders refer to farmer groups such as associations, cooperatives, operators of rice milling and processing plants, exporters, supply chain partners, government agencies and non-governmental organizations.

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flooding, number and duration of dry-down events) • Nutrient management (e.g. N and P analysis of fertilizer applied, amount of organic material incorporated into soil) • Pest management (e.g., pest damage data, record of pest control products applied) • And other topics For specific details on basic and intermediate data level measuring units please refer to the SRP Performance Indicators.			(SI) or units recognised by SI, or other internationally recognised units. **For example, the unit for an area is in hectares, the unit for weight is in kilograms, the unit for volume is in litres, and the cost is in US dollars**. b) more precise data to enable quantitative analysis of sustainable practices applied, namely: - water management (e.g., irrigation water volume, total rainfall, number of irrigation, number and duration of dry-down events); - nutrient management (e.g., N and P analysis of fertiliser applied, amount of organic material incorporated into soil); - pest management e.g., **pest scouting** and pest damage data, record of pesticide applied (**e.g., trade name, common name, active**		

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			ingredients, mixing ratio, volume applied per area, application date and re-entry time after the use of pesticides), management of invasive species (if any); - others, **such as harvest method, cleaning of paddy harvester, stubble and rice straw management, disposal methods of used pesticide containers and expired and left-over pesticides, method and duration of moisture reduction (if any), moisture of paddy while weighing at the time of sale (data may be collected from rice mill), assessment data according to the Checklist for Risk Assessment on Soil and Water Quality, testing results of soil and water salinity in rice fields.** - **problems and observations encountered**		

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			in the cultivation of each cropping season (if any), such as off-typed rice variety problem, and the management thereof.		
-	-	-	4.1.2.2 In case where a risk of heavy metal contamination is identified or found according to the Checklist for Risk Assessment in Annex A, farmers, farmer groups or groups of stakeholders shall have an analytical result obtained from a laboratory.	a) The Checklist for Risk Assessment in Annex A shows there is no risk.	n/a
-	-	-		b) An analytical result obtained from a laboratory with the validity not exceed 5 years is available if the Checklist for Risk Assessment in Annex A indicated risk. (The analysis is based on the result of implementation in Section 4.2.1 and 4.2.2.	C* ★
-	-	-		c) There is no analytical result in case of any risk is found after assessing by using the Checklist for Risk Assessment in Annex A, or the analytical	NC

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				result has validity more than 5 years.  	
-	-	-			
-	-	-	4.1.2.3 Farmers, farmer groups or business operators shall record the date of storage and the quantity of paddy and rice products during storage and transport, so that the source of paddy and rice products is traceable.	a) The record includes the date of storage and the quantity of paddy or rice products during storage and transport to be traceable (if applicable).	C* 
-	-	-		b) In case of storage and/or transport, the record does not include the date of storage and the quantity of paddy or rice products during storage and transport to be traceable, or otherwise the record has insufficient information for traceability.  	NC
-	-	-			

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-	-	-	4.1.2.4 Farmers, farmer groups or groups of stakeholders shall keep records of their operations in accordance with Section 4.1.2.1 to Section 4.1.2.3 and important evidence related to their operations for at least 3 years or at least 1 cycle of certification.	a) The records and important evidence related to their operations for at least 3 years or at least 1 cycle of certification. b) No records are kept, or they are kept less than the limited time. 	C*  NC
-	-	-			
-	-	-			
(3) **Training** Farmer training, information, and support needs are assessed for all topics in the SRP Standard. Farmer receives needed training, information, and support. SRP Authorized Trainers are the preferred external partners or professional sources for training on	In the last 5 years: a) Farmer training, information, and support needs assessed; farmer received needed training from an SRP Authorized Trainer; and farmer	3	**4.1.3 Training** Farmers, farmer groups or groups of stakeholders, as applicable, **shall** 1) assess farmers' needs on trainings, information, and supports for implementing all requirements in this standard;	In the last 5 years: a) Farmer training, information, and support needs assessed; farmer received needed training on TAS standard for sustainable rice; and farmer demonstrates that content is applied.	3

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SRP. SRP also recognizes information exchange with other farmers or within farmer organizations. Farmer demonstrates that relevant content is applied.	demonstrates that content is applied. b) Farmer training, information, and support needs assessed; farmer received needed training; and farmer demonstrates that content is applied. c) Farmer training, information, and support needs assessed; and farmer received needed training. d) Farmer training, information, and support needs not assessed.	2 1* 0	2) provide farmers with the needed trainings, information, and supports from professional experts of this standard. Otherwise, farmers may exchange information with other farmers or within farmer organisations; 3) demonstrate that the contents of this standard are applied. During the past 5 years, farmers, farmer groups or groups of stakeholders have provided evidence of compliance to the requirements of this standard. (Qualifications of TAS trainers will be defined to ensure their competencies and they will be trained on: (1) TAS 4408 requirements and interpretation and (2) TAS 4408 auditing method and checklist.)	b) Farmer training, information, and support needs assessed; farmer received needed training; and farmer demonstrates that content is applied. c) Farmer training, information, and support needs assessed; and farmer received needed training. d) Farmer training, information, and support needs not assessed.	2 1* 0
Theme 2: Pre-planting			**4.2 Pre-planting**		
(4) Heavy metals Milled grain shall be safe from heavy metals. Milled grain is safe when there are no detectable levels	a) There is proof (not older than 5 years) that the milled grain is safe from heavy metals.	3	**4.2.1 Food Safety: Heavy metals** Rice planting areas are not at risk of heavy metal contamination in	a) There is proof (not older than 5 years) that the milled grain is safe from heavy metals.	3

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of heavy metals in the milled grain as set by international authorities on food safety[3], or by national law or regulations (whichever is stricter). Risk of soil contamination from heavy metals such as arsenic, cadmium, chromium, mercury, and lead has been analyzed.[4] In the presence of (risk of) soil contamination from heavy metals: 1. A group level soil analysis is conducted in contaminated areas at least every 5 years. 2. Soil remediation techniques are implemented.[5]	b) There is proof (not older than 5 years) (by a group soil analysis or a reliable external source) that the level of heavy metals in the soil of the group or region does not exceed background levels. c) A group risk assessment (not older than 5 years) does not show risk from heavy metal contamination (see Annex A: Risk Assessment Checklist). d) In case of risk, a group level soil analysis is carried out at least every 5 years; in case of the presence	3 2* 1	rice products which may affect soil and water quality. Farmers, farmer groups or groups of stakeholders are required to assess the risk of soil contamination in accordance with the Checklist for Risk Assessment in Annex A, Part 1. If a risk is identified, the level of heavy metals in the soil such as arsenic, cadmium, lead, chromium, mercury[5/] **shall** be analysed. If such level is higher than the standard level[6/], corrective measures are required. The validity of the assessment data and analytical results **shall not** exceed 5 years. In the presence of heavy metal contamination, rice grain **shall** be safe from such heavy metals, according to the requirements of the **Notification of the Ministry of Public Health (No. 414) B.E. 2563**	b) There is proof (not older than 5 years) (by a group soil analysis or a reliable external source) that the level of heavy metals in the soil of the group or region does not exceed background levels. c) A group risk assessment (not older than 5 years) does not show risk from heavy metal contamination (see Annex A: Risk Assessment Checklist). d) In case of risk, a group level soil analysis is carried out at least every 5 years; in case of the presence of soil contamination from heavy metals, soil	3 2* ★ 1

[5/] Only in cases where risks are identified by the assessment results in accordance with Annex A.

[6/] It shall comply with the quality requirements of soil used for trading, agriculture and other activities under the Notification of National Environment Board entitled, "Elaborating Soil Quality Standards" issued under the Enhancement and Conservation of National Environmental Quality Act B.E. 2535.

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	of soil contamination from heavy metals, soil remediation techniques are implemented. e) None of the above. 	0	**issued under the Food Act B.E. 2522 on Standards for Contaminants in Food and its amendments.** Evidence **shall** be kept to demonstrate that rice is safe from heavy metals. In addition, validity of the analytical results **shall not** exceed 5 years.	remediation techniques are implemented. e) None of the above. 	0
(5) Soil Salinity Risk of soil salinity has been analyzed.6 Soil salinity is monitored, when at acceptable levels (i.e., not in excess of 3 dS/cm for soil or 5 g/L for water), and effectively managed, when the levels are deemed high. In the presence of (risk of) soil salinity, mitigation/adaptation measures include: • Selection of salinity-tolerant varieties. • Monitoring of salinity in field water.	a) There is documented proof, not older than 3 years (per any method in footnote 12), that: • There is no (risk of) soil salinity within the group or region, or • Soil salinity within the group or region is at an acceptable level (i.e., not in excess of 3 dS/cm	3 2	**4.2.2 Soil Salinity** Farmers, farmer groups or groups of stakeholders **shall** assess the risk of soil salinity according to the Risk Assessment Checklist in Annex A, Part 2. If a risk is identified, the salinity of soil and water in rice field **shall** be analysed. The acceptable level of salinity shall not exceed 3 dS/m [7] for soil or 5 g/L [8] for water. When the levels exceed the limits, effective measures for mitigation or adaptation are required, such as:	a) There is documented proof, not older than 3 years, that: • There is no (risk of) soil salinity within the group or region, or • Soil salinity within the group or region is at an acceptable level (i.e., not in excess of 3 dS/m for soil or 5 g/L for water). *Note*:	3

[7] dS/m is the symbol used in SI for "decisiemens per meter".

[8] g/L is the symbol recognized to be used in SI for "gram per liter".

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• Management of salinity through maintained water pressure in the field. • Management of inflow/outflow in quantity and timing to minimize salinity. • Expert advice and subsequent action.	for soil or 5 g/L for water). b) There is (risk of) soil salinity, and mitigation/adaptation measures taken are effective (e.g., yield gap as compared to an area not affected by soil salinity narrows). c) There is (risk of) soil salinity, and mitigation/adaptation measures are taken. d) None of the above.	1* 0	1) selection of salinity-tolerant varieties; 2) monitoring of salinity in field water, provided with the analytical results of not exceeding 3 years; 3) management of salinity through maintained water pressure in the field; 4) management of inflow/outflow in quantity and timing to minimise salinity; expert advice and subsequent action.	*Methods to analyse risk of soil salinity include:* *(1) A group soil or field water analysis, conducted by qualified laboratories, shows a maximum salinity level of 3 dS/cm for soil or 5 g/L for water.* *(2) A group risk assessment in Annex A shows no risks soil salinity.* *(3) Records of public authorities that show a maximum salinity level of 3 dS/m for soil or 5 g/L for water.* b) There is (risk of) soil salinity, and mitigation/adaptation measures taken are effective (e.g., yield gap as compared to an area not affected by soil salinity narrows). c) There is (risk of) soil salinity, and mitigation/adaptation measures are taken. d) None of the above.	 2 1* 0

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Requirement	**Level of compliance**	**Point**	**Requirement**	**Level of compliance**	**Point**
(6) Land Conversion and Biodiversity Rice farming after 2009[7] has not been causing conversion within a (proposed) protected area, Key Biodiversity Areas™, Ramsar Sites (wetland), primary forest, secondary forest (native), or other natural ecosystems and land types such as prairie. At the field level, farmer maintains and/or enhances applicable site-specific biodiversity elements: • In-field habitat / refuge • Field margins • Non-cropped area • Plant species which host beneficial natural enemies • Trees (replanted if harvested) Farming practices maintain and/or enhance ecosystem services.	a) There has been no conversion of described areas after 2009, and farming practices maintain and/or enhance site-specific biodiversity and ecosystem services. b) There has been no conversion of described areas after 2009, and farming practices maintain and/or enhance site-specific biodiversity. c) There has been no conversion of described areas after 2009. d) There has been conversion of described areas after 2009.	3 2 1* 0	**4.2.3 Land Conversion and Biodiversity** Rice planting area **shall not** affect the environment in accordance with the requirements of the relevant laws, criteria and conditions prescribed by government agencies and **shall not** be **a high conservation value area, such as wetlands, watershed areas, forest areas**. In carrying out rice cultivation activities, farmers or farmer groups **should**: 1) conserve and enhance applicable site-specific biodiversity elements, including: a) in-field habitat / refuge for natural enemies; b) field margins; c) non-cropped area; d) plant species and beneficial natural enemies, including plants which host beneficial natural enemies;	a) There has been no conversion of described areas, and farming practices maintain and/or enhance site-specific biodiversity and ecosystem services. b) There has been no conversion of described areas, and farming practices maintain and/or enhance site-specific biodiversity. c) There has been conversion of described areas.	3 2* 0

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			e) trees in surrounding area (replanted if harvested or cut-off). 2) maintain and/or enhance ecosystem services. *Note:* *There are relevant laws and regulations to regulate and control the use of land, including 15 Ramsar Sites, and 116 other important wetlands, namely:* *- National Park Act B.E. 2562 (2019) (the previous version was the National Parks Act, B.E. 2504 (1961))* *- National Reserved Forests Act B.E.2507 (1964)* *- Enhancement and Conservation of the National Environmental Act, B.E. 2535 (1992)* *- Forest Act, B.E. 2484 (1941)* *In addition, the above-mentioned regulations have been effective much earlier than 2009, Thai farmers have to comply with these laws, therefore the requirement of TAS 4408 does not mention the year 2009 to avoid confusion. In other words, the lands*		

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			used for agricultural cultivation have to comply with the above-mentioned regulations even before 2009. Therefore, land conversion is not an issue. For more informaiton, rice farmes registered with DoAE will be checked in terms of land use type and land conversion.		
(7) **Invasive Species** No invasive species (e.g., water hyacinth, golden apple snail) have been introduced intentionally by the farmer or group since 2009[13]. In the presence of invasive species, effective management measures are taken against invasive species, while protecting native species.	a) No invasive species are introduced intentionally by the farmer or group since 2009. b) Invasive species are introduced intentionally by the farmer/group since 2009; and are effectively managed. c) Invasive species are introduced intentionally by the farmer/group since	3* 1 0	**4.2.4 Invasive Species** No invasive species have been intentionally introduced into the field (types of invasive species specified in this requirement cover plant or animal species that have never existed in the local but have been intentionally introduced into the field since 2009 [9]). In the presence of invasive species or in the habitat of invasive species, effective management **shall** be undertaken by farmers or farmer	a) No invasive species are introduced intentionally by the farmer or group since 2009. b) Invasive species are introduced intentionally by the farmer/group since 2009; and are not effectively managed.	3* 0

[9] Invasive species of plants or animals that do not live in the local and introduced into the rice fields before the year of 2009 are still invasive species according to the Cabinet Resolution on February 20, 2018 on Preventive, Control and Elimination Measures of Invasive Species, which the relevant agencies shall effectively implement in accordance with the guidelines.

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	2009; and are not effectively managed. 		groups against invasive species, while protecting native species[10/].		
(8) Leveling *Instructions: Identify the system that applies to the majority of land under cultivation. Respond for that system:* • *Flat land or terraces* • *Sloping land without terraces* • *Dry land (without irrigation)* Rice cultivated on flat land or on terraces: • If laser leveling is used, the land or terraces are leveled up to 1/1000 within- plot slope. • If laser leveling is not used, visual observation confirms that the field does not have high and	For flat land or terraces: a) Land has been leveled up to 1/1000 within-plot slope b) Land has been leveled. c) Land has not been leveled. **OR** For sloping land without terraces: a) Both physical and cultural soil conservation practices are used.	3 2* 0 3 2* 0	**4.2.5 Land Levelling** Farmers or farmer groups **shall** follow a system applied to the majority of cultivation land. The levelling requirements for 3 systems are as follows:		
			4.2.5.1 In case rice is cultivated on a flat land or on terraces, the land **shall be** levelled as follows: 1) If laser levelling is used, the land or terraces shall be levelled to have a plot slope suitable for the area condition. 2) If laser levelling is not used, visual observation shall be applied to ensure that the field does not have any high and low spots when filled with water and	a) Land has been levelled to have a plot slope suitable for the area condition (1/1000) when using laser levelling. b) Land has been levelled by not having any high and low spots when observation c) Land has not been levelled.	3 2* 0

[10/] Focus on the prevention and control of the epidemic, elimination, surveillance of invasive species in order to prevent invasion and impact on local ecosystems or species.

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low spots when filled with water and crop stand is uniform in height (i.e., no undulating). Rice cultivated on sloping land without terraces: • Physical soil conservation practices are used (e.g., contour farming, installation of erosion barriers) • Cultural soil conservation practices are used (e.g., non-invasive cover cropping, mulching)	b) Only physical soil conservation practices are used. c) No soil conservation practices are used. **OR** For dry land (without irrigation): a) No leveling is required, but in the case of sloping land either physical (e.g., contour farming) or cultural (e.g., mulching) soil conservation practices are used.	3	crop stand is uniform in height (i.e., no undulating).		
			4.2.5.2 In case rice is cultivated on a sloping land without terraces, levelling is unnecessary, but farmers or farmer groups **shall apply**: 1) physical soil conservation practices (e.g., contour farming, installation of erosion barriers), or 2) cultural soil conservation practices (e.g., non-invasive cover cropping, mulching).	a) Both physical and cultural soil conservation practices are used. b) Only physical soil conservation practices are used. (Activity 1)) c) No soil conservation practices are used.	3 2* 0
			4.2.5.3 In case rice is cultivated on an upland without irrigation (dry land), no levelling is required. However, if it is a sloping land, either physical practices (e.g., contour farming) or cultural practices (e.g., mulching) **should** be used for soil conservation.	a) No leveling is required, or in the case of sloping land either physical (e.g., contour farming) or cultural (e.g., mulching) soil conservation practices are used. b) Neither physical (e.g., contour farming) nor cultural (e.g., mulching) soil conservation practices are used when it is a sloping land	3 0

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(9) Pure Quality Seeds Pure quality seeds are free of weeds seeds, pests, and diseases.8 Certified seeds must comply with applicable national law/regulation or the regulation of the destination market. Seeds with quality control (not certified) must meet criteria including varietal purity, weed seed-free, germination testing, safe storage, fungal control, and others. Self-saved seeds with quality control must meet criteria including safe storage, roguing (removal of all off-types or mixtures of plants) in the field before harvest, and others. The practice of self-saving seeds should not exceed 3 crop cycles	a) Farmer uses certified seed that is suitable for local conditions and meets criteria for certified seeds. b) Farmer uses seed with quality control that is suitable for local conditions and meets criteria for seeds with quality control. c) Farmer uses self-saved seeds that meet criteria for self-saved seeds with quality control for a maximum of 3 crop cycles. d) Farmer uses: • Uncertified seeds, • Seeds without quality control,	3 3 2* 0	**4.2.6 Quality Rice Seeds** Farmers shall choose rice seeds of quality, suitable for the area by using rice seeds obtained from **one of the following cases**: 1) Certified Seeds ~~or Extension Seeds~~ that are certified in accordance with the standard for seed production 2) quality seeds that meet the requirements of relevant regulations e.g., purity of seeds, quantity of weed seeds, percentage of germination, safe storage, and fungal control, etc. 3) self-saved seeds with quality control by eliminating all off-typed rice plants in the field before harvesting, safe storage, and cleaning to separate foreign matter (including off-type plants). The practice of self-saving seeds should not exceed 3 crop cycles.	a) Farmer uses "Certified Seed" or "Extension Seed" that is suitable for local conditions and meets criteria not lower than that for Certified Seeds. ***Note**: Actually, "Breeder Seed", "Foundation Seed" and "Registered Seed" have higher quality than "Certified Seed" as it is used to extend the quantity corresponding to the standard for seed production according to rice seed category. As a result, the "Breeder Seed", "Foundation Seed" or "Registered Seed" can be used for planting.* b) Farmer uses seed with quality control that is	3 3

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	• Self-saved seeds without quality control, or • Self-saved seeds for more than 3 crop cycles. 		However, it is recommended to use rice seed varieties that have officially been certified, or rice varieties that have been authorized by the rights holders, or native rice species preserved by the communities for their own use.	suitable for local conditions and meets the quality requirements of relevant regulations. c) Farmer uses self-saved seeds that meet criteria for self-saved seeds with quality control for a maximum of 3 crop cycles. d) Farmer uses: • Seeds not classify as "Certified Seeds" or its quality equivalent, • Seeds without quality control, • Self-saved seeds without quality control, or • Self-saved seeds for more than 3 crop cycles. 	2* 0

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Theme 3: Water Use			**4.3 Water Use**		
(10) Water Management			**4.3.1 Water Management**		
(10.1) Rainfed Production System Measures are in place to enhance water-use efficiency including: 1. Timely and appropriate crop establishment according to local climate. 2. Direct seeding or effective puddling, and strong bunds 3. Use of varieties suitable for local climate (e.g., short or medium-duration varieties). 4. Provision of on-site rainwater harvesting and storage for supplementary irrigation.	a) Farmer implements all four measures. b) Farmer implements measures 1, 2, and 3 only. c) Farmer implements measures 1 and 2 only. d) None of the above.	3 2 1* 0	**4.3.1.1 Rainfed Production System** In case rice field is in a rainfed area, farmers **shall** implement measures to enhance efficient use and management of water, including: 1) start cultivation at an appropriate time with consistent rainfall according to local climate; 2) prepare effective puddling with strong bunds to reserve water prior to direct seeding or transplanting; 3) use the varieties suitable for local climate (e.g., early or late-maturing rice varieties); 4) provide an on-site rainwater storage for supplementary irrigation.	a) Farmer implements all four measures. b) Farmer implements measures 1), 2), and 3) only. c) None of the above.	3 2* 0
(10.2) Irrigated Production System – Flood Prone Measures are in place to enhance water-use efficiency including:	a) Farmer implements measure 1 and any two additional measures. b) Farmer implements measure 1 and any one	3 2	**4.3.1.2 Irrigated Production System - Lowland** In case rice field is in a flood-prone irrigated lowland, with constant or	a) Farmer implements measure 1) and any two additional measures. b) Farmer implements measure 1) and any one	3 2

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Requirement	**Level of compliance**	**Point**	**Requirement**	**Level of compliance**	**Point**
1. Timely crop establishment to avoid submergence of the crop during expected floods. 2. At least one dry-down event (i.e., midseason drainage of 7 days drained period/aeration), if possible. 3. Leveling with provision for minor drainage conditions. 4. Use of flood-tolerant varieties	additional measure listed. c) Farmer implements measure 1 only. d) None of the above.	1* 0	recurring flooding, farmers **shall** implement measures to enhance efficient use and management of water, including: 1) adjust crop calendar to avoid submergence of the crop during expected flooding period; 2) allow at least one dry-down event per cropping season (if applicable), by leaving soil to dry continuously for 7 days; 3) level the field with provision for minor drainage conditions; 4) use flood-tolerant rice varieties.	additional measure listed. c) Farmer implements measure 1) only. d) None of the above.	1* 0
(**10.3**) **Irrigated Production System – Not Flood Prone** Measures are in place to enhance water-use efficiency including: 1. One dry tillage before flooding if soil is cracked. 2. Leveling and strong bunds. 3. Dry seeding, or transplanting following land soak, effective puddling, and tillage within a 1-week period. 4. Alternate wetting and drying.	a) Farmer implements all six measures. b) Farmer implements measures 1, 2, and 6 only. c) Farmer implements measures 2 and 4 only. d) None of the above.	3 2 1* 0	**4.3.1.3 Irrigated Production System – Upland** In case rice field is in a non-flood prone irrigated upland, which is relatively high topography with limited water retention capacity and is dry more easily than that of the lowland, farmers shall implement measures to enhance efficient use and management of water, including: 1) plough the field depending on the area conditions before flooding if soil is cracked;	a) Farmer implements all six measures b) Farmer implements measures 1), 2), and 6) only c) Farmer implements measures 2) and 5) only. d) None of the above.	3 2 1* 0

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Requirement	**Level of compliance**	**Point**	**Requirement**	**Level of compliance**	**Point**
5. Use of short or medium-duration varieties with similar yield potential as long duration varieties. 6. Termination of irrigation at least 10- 15 days before harvesting.			2) level the field and build strong bunds; 3) choose early-maturing rice varieties with similar yield potential as medium-maturing rice varieties; 4) apply direct seeding or transplanting within a one-week period following land preparation and puddling; 5) apply AWD as in Annex C; 6) terminate irrigation at least 10-15 days before harvesting.		
(11) **Irrigation System at Community Level** The irrigation system under command of the farmer or group (supplied by surface and/or ground water) complies with the following criteria: The command area has sufficient internal canals for supply and drainage. There are no leakages in dikes. Sluices (if any) are functioning well. There is stakeholder involvement in decision making on the irrigation system.	Farmer produces under rainfed conditions (no irrigation). a) All four of the listed criteria are met. b) Any three of the listed criteria are met. c) Any two of the listed criteria are met d) None of the above.	n/a 3 2* 1	**4.3.2 Irrigation System at Community Level** In case rice field is in an irrigated area, farmers or farmer groups **shall** have a plan for good water management at a community level by practicing as follows: 1) there is participation with stakeholders in decision making on the irrigation system; 2) the command area has sufficient internal canals for supply and drainage; 3) there are no leakages in dikes;	a) Farmer produces under rainfed conditions (no irrigation). b) All four of the listed practice criteria are met. c) Any three of the listed practice criteria are met. d) None of the above.	n/a 3 2* 0

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			4) sluices (if any) are functioning well.		
(12) **Inbound Water Quality** Inbound water is obtained from clean sources that are free of biological, saline, and heavy metal contamination.[10,11] In the presence of (risks of) contaminated water, remediation techniques include, for example, installation of a filtration system or selection of alternative varieties if available.	a) Farmer produces under rainfed conditions (no irrigation). b) There is documented proof, not older than 3 years (per any method in footnote 16), that the inbound water is obtained from clean sources. c) Same as b, but the documented proof is older than 3 years d) In case of (risks of) contaminated water, mitigation measures are taken to reduce the potential impact of contaminated water e) None of the above.	n/a 3 2 1* 0	**4.3.3 Inbound Water Quality** Inbound water that farmers or farmer groups use in the rice field shall be obtained from clean sources that are not in an environmental condition that may cause risks of biological contamination, heavy metals and salinity. The risk of water contamination **shall be** assessed in accordance with the Checklist for Risk Assessment in Annex A Part 1 and Part 2 (except for in rainfed production systems). In the presence of risks of contamination and salinity, analysis shall be conducted and remedial measures shall be in place, for example, use of a treatment system, planting of salinity-tolerant rice varieties. Results of risk assessment and analysis can be carried out at a group or an individual level. The validity of the data on risk assessment and the analytical results **shall not** exceed 3 years.	a) Farmer produces under rainfed conditions (no irrigation). b) There is documented proof, not older than 3 years, that the inbound water is obtained from clean sources. c) In case of (risks of) contaminated water, mitigation measures are taken to reduce the potential impact of contaminated water d) None of the above. ***Note 1**:* *Methods to analyse inbound water quality include:* *(1) A group water sample analysis, conducted by qualified laboratories, shows no contamination beyond official national or regional levels.*	n/a 3 1* 0

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				(2) *A group water quality risk assessment shows no risks of water contamination* ***Note 2**:* *Point of measurement of inbound water quality:* • *If no drained water merges with the irrigation canal, water quality should be tested at the main irrigation canal.* • *If drained water merges with the irrigation canal, water quality should be tested at the inlet used by the farmer or group (i.e., after the point of merging).* 	
(13) **Groundwater Extraction** Groundwater extraction is legal and sustainable. Sustainable groundwater extraction avoids depletion of water resources beyond the watershed recharge capacity, and balances the competition for its use.	a) Farmer produces under rainfed conditions (no irrigation). b) Groundwater extraction complies with sustainable water	n/a 3	**4.3.4 Groundwater Extraction** If farmers or farmer groups wish to drill and pump groundwater, they **shall**: 1) meet the requirements of regulations related to groundwater	a) Farmer produces under rainfed conditions (no irrigation). b) Groundwater extraction complies with sustainable water extraction licensing policies and related regulations. There is	n/a 3*

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	extraction licensing policies. c) Within the past 3 years, professional advice on sustainable groundwater use is sought and followed. d) There is active participation in watershed management and community groundwater water infrastructure projects. e) None of the above.	2* 1 0	drilling[11/] to achieve sustainable use of groundwater; 2) participate in watershed management and projects related to the community's groundwater infrastructure; 3) avoid excess of pumping leading to depletion of water resources beyond the watershed recharge capacity, and balance water use without competition of the use in accordance with the requirements of related regulations[12/]; 4) comply with the policy on a sustainable use of groundwater and have records on the advice sought from the Department of Groundwater Resources or the responsible local government agency in the area and the	active participation in watershed management and community groundwater water infrastructure projects, and professional advice on sustainable groundwater use is sought and followed within the past 3 years. (Activity 1) to 4))	

[11/] Groundwater Act, B.E. 2520 and its amendments, and the Notification of the Ministry of Industry, No. 2 (B.E. 2521) issued under the Ground Water Act B.E. 2520 entitled, "Establishment of Technical Criteria and Measures for Groundwater Drilling and Revocation of Groundwater Drilling", and its amendments.

[12/] Regulations of the Ministry of Natural Resources and Environment on Criteria, Procedures and Conditions for Consideration of License issuance and Renewal License of Groundwater Business B.E. 2560 (2017), and the Notification of the Ministry of Industry No. 3 (B.E. 2521) issued under the Groundwater Act, B.E. 2520, entitled, "Establishment of Technical Criteria and Measures for Conserving Groundwater Use", and its amendments

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			practice of such advice within 3 years.		
(14) Drainage Intentional surface (sideways) drainage after surface application of agrochemicals is sufficiently delayed to avoid contamination from agrochemical runoff, or according to the product label. Agrochemical runoff can negatively impact biodiversity or surroundings and waterways.	a) Farmer produces under rainfed conditions (no irrigation). b) There is no intentional surface (sideways) drainage, due to having good practices in place. c) There is surface (sideways) drainage, but no use of agrochemicals. d) Surface (sideways) drainage is delayed after surface application of agrochemicals by at least 4 days for fertilizers and 14 days for pesticides, or according to the product label. e) Surface (sideways) drainage is delayed after surface	n/a 3 3 2* 1	**4.3.5 Drainage** Where necessary, intentional surface (sideways) drainage after application of agrochemicals is sufficiently delayed by at least 4 days for inorganic (chemical) fertilisers and 14 days for pesticides, or as instructed on the product label to avoid contamination from agrochemical runoffs which can adversely affect biodiversity or the environment and natural water resources.	a) Farmer produces under rainfed conditions (no irrigation). b) There is no intentional surface (sideways) drainage, due to having good practices in place. c) There is surface (sideways) drainage, but no use of agrochemicals. d) Surface (sideways) drainage is delayed after surface application of agrochemicals by at least 4 days for fertilizers and 14 days for pesticides, or according to the product label. e) None of the above.	n/a 3 3 2* 0

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	application of agrochemicals, but for fewer days due to unexpected need to protect crops. f) None of the above. 	0			
Theme 4: Nutrient Management			**4.4 Nutrient Management**		
(15) Nutrient Management (Inorganic and/or Organic) Efficient and site-specific nutrient management is applied and documented.[12] Measures for efficient nutrient management include: 1. Timing of fertilizer (inorganic and/or organic; N, P, and/or K) application is according to plant needs[13], locally adapted recommendations, and product label instructions (if available). 2. Amount of fertilizer (inorganic and/or organic; N, P, and/or K) applied is based on	a) Farmer complies with all elements listed in the requirement. b) Farmer complies with any two elements listed. c) Farmer complies with any one element listed. d) Farmer is non-compliant with any of the elements listed. 	6 4* 2 0	**4.4.1 Inorganic or Organic Nutrient Management** Appropriate and effective nutrient management **shall** be applied and recorded by farmers, as follows: 1) timing of fertiliser application is according to growing period and plant needs, recommendations for each area or the product label instructions (if available); 2) appropriate rate of fertiliser is applied based on soil fertility level and expected yield, recommendations for each area	a) Farmer complies with all measures listed in the requirement. b) Farmer complies with any two measures listed. c) Farmer is non-compliant with any of the measures listed. ***Note 1***: *Due to variation depending on local conditions, it recommends that measures for site-specific nutrient management are further specified in SRP National Interpretation Guidelines.*	6 4* 0

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knowledge of soil fertility and expected yield, locally adapted recommendations, and product label instructions (if available). 3. Natural systems of soil fertility enhancement (e.g., crop rotation, intercropping, and/or non-invasive cover cropping) are used.			or the product label instructions (if available); 3) natural methods to enhance soil fertility are used, such as growing green manure crops.	***Note 2***: *Examples of fertilizer application according to plant needs include: applying N up to 30% of the total amount when plants have 3-5 leaves, and using leaf color charts or SPAD meters to identify timing of the next application; or splitting N application between basal, active tillering, and panicle initiation after sowing, and applying P and K during basal stage; or using controlled-release fertilizers.*	
(16) **Organic Fertiliser Choice** Organic material (e.g., animal manure, green manure, mulch, rice straw) is used as fertilizer if the conditions are favorable. Favorable conditions include: 1. It can be applied in non-flooded fields in comp osted or decomposted state.	a) Farmer uses organic material as fertilizer if all three conditions are present. b) Farmer uses organic material as fertilizer if conditions 1 and 2 are present, but not condition 3.	3 2 2*	**4.4.2 Selection of Organic Fertiliser** Organic materials, such as animal manure, green manure, rice straw, rice stubble, **shall** be used by farmers as fertilisers **if they are in the proper conditions** as follows: 1) applying completely composted or decomposing	a) Farmer uses organic material as fertilizer if all three conditions are present b) Farmer uses organic material as fertilizer if only conditions 1) and 2) are present, but not condition 3). c) Farmer does not use organic material as	3 2 2*

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2. There is sufficient time for its decomposition prior to flooding. 3. It is available local (approximately within 50 km radius) and in sufficient quantity.	c) Farmer does not use organic material as fertilizer because one or more of the listed conditions cannot be met. d) Farmer does not use organic material as fertilizer even though farmer is aware of conditions and all conditions are present. e) Farmer incorporates organic material into flooded soils.	1 0	organic materials in non-flooded fields; 2) allowing sufficient time for its decomposition prior to flooding; 3) applying organic materials available locally and in an appropriate quantity.	fertilizer because one or more of the listed conditions cannot be met. d) Farmer incorporates organic material into flooded soils.	0
(17) **Inorganic Fertiliser Choice** Inorganic fertilizers can be used only if they are registered and come from a noncounterfeit source.	a) There is no use of inorganic fertilizers. b) Farmer uses inorganic fertilizers that are registered and come from a noncounterfeit source. c) Farmer uses inorganic fertilizers	3 3* 0	**4.4.3 Selection of Inorganic Fertiliser** **Only** registered inorganic fertilisers (chemical fertilisers) can be used by farmers.	a) There is no use of inorganic fertilizers. b) Farmer uses inorganic fertilizers that are registered and come from a noncounterfeit source. c) Farmer uses inorganic fertilizers that are not registered and/or come	3 3* 0

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	that are not registered and/or come from a counterfeit source. 			from a counterfeit source. 	
Theme 5: Pest Mangement			**4.5 Integrated Pest Management (IPM)**		
(18.1) Weed Management Preventative weed control methods can include: • Good land preparation • Use of certified seeds • Crop rotation • Flooding (if water is abundant) Farmer follows IPM principles and the following criteria: 1. Preventative weed control methods are used, before considering curative methods. 2. Herbicide is used only if other curative methods (e.g., manual and mechanical weeding) are not effective on their own and severity	a) No curative weed control methods are required. Curative weed control methods are required and: b) Farmer effectively controls weeds without the use of herbicide. c) Farmer meets all six criteria listed. d) Farmer meets criteria 1, 2, 3, 4, and 5 only. e) Farmer meets criteria 1, 2, and 3 only. f) Farmer does not meet criteria 1, 2, and 3	3 3 3 2* 1 0	**4.5.1 Weed Management** Farmers **shall** follow IPM principles (as in Annex B) and the following criteria: 1) Preventive mechanical methods are used as the first priority for weed control, such as: a) good land preparation; b) use of Certified Seeds; c) crop rotation; d) flooding (if water is abundant). 2) Herbicide is used only if other control methods (e.g., mechanical method) are not effective and severity of the weeds is expected to cause significant damage or loss.	a) No curative weed control methods are required. If farmer need to control weeds by curative methods, farmer meets IPM principles as in Annex B, and: b) Farmer effectively controls weeds without the use of herbicide. c) Farmer meets all six criteria listed. d) Farmer meets criteria 1), 2), 3), 4), and 5) only. e) None of above. 	3 3 3 2* 0

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of the weeds is expected to cause significant damage or loss. 3. Herbicide selection is in line with national government recommendations, is registered for use in rice, comes from a non-counterfeit source, and is not on any of the following international lists: ✓ Persistent Organic Pollutants in the Stockholm Convention ✓ 1A or 1B under World Health Organization classification ✓ Annex III of the Rotterdam Convention[14] 4. Herbicide application is targeted to avoid non-application zones. 5. Herbicide application method is according to the product label instructions, follows specified preharvest interval, and does not exceed specified dosage (for worker safety and food safety). 6. Herbicide selection and use responds to the target weed species, considers timing of the			**3)** Herbicides registered with the Department of Agriculture (DOA), Ministry of Agriculture and Cooperatives (MOAC) and permitted for application in rice can be used, only when necessary and records are kept on their sources. **Prohibited herbicides in the negative list specified in Section 4.7.6.2 are not used.** 4) Herbicide is applied only in targeted areas. 5) For worker safety and food safety, herbicide application is in accordance with the product label instruction. The application follows specified pre-harvest interval (PHI) and does not exceed dosage specified on the product label or as officially recommended. 6) Herbicide selection and application respond to the target weed species. Optimal timing of application during growing period before closing of the rice canopy, and local information		

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closing of the rice canopy, and considers local information on herbicide-resistant weeds (for efficiency)			on herbicide-resistant weeds are taken into consideration (for efficiency of use).		
(**18.2**) **Insect Management** Preventative insect control methods can include: • Balanced nutrient application (e.g., avoid excessive application of nitrogen) • Promotion of beneficial natural enemies (e.g., insects, spiders) and increasing habitat diversity around rice fields • Synchronized planting • Use of resistant/tolerant varieties • Promotion of other predators (e.g., birds, bats, frogs) • Crop rotation or extended fallow period Farmer follows IPM principles and the following criteria: 1. Preventative insect control methods are used, before considering curative methods.	a) No curative insect control methods are required. Curative insect control methods are required and: b) Farmer effectively controls insects without the use of insecticide. c) Farmer meets all seven criteria listed. d) Farmer meets criteria 1, 2, 3, 4, 5 and 6. e) Farmer meets criteria 1, 2, 3 and 4. f) Farmer does not meet criteria 1, 2, 3 and 4.	3 3 3 2* 1 0	**4.5.2 Insect Management** Farmers shall follow IPM principles (as in Annex B) and the following criteria: 1) Preventive methods are used as the first priority for insect control, such as: a) balanced nutrient application, e.g., avoid excessive application of nitrogen; b) enhancing natural enemies such as insects (predators and parasitoids), spiders, and habitat diversity in the surrounding areas; c) synchronizing planting time with that of the community; d) choosing pest resistant or tolerant varieties; e) encouraging the presence of predators such as birds, bats, frogs; f) using crop rotation or extending fallow period.	a) No curative insect control methods are required. If farmer need to control insects by curative methods, farmer meets IPM principles as in Annex B, and: b) Farmer effectively controls insects without the use of insecticide. c) Farmer meets all seven criteria listed. d) Farmer meets criteria 1, 2, 3, 4, 5 and 6. e) None of above. f) Farmer does not meet criteria 1, 2, 3 and 4	3 3 3 2* 0 0

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2. Insecticide is used only if other curative methods (e.g., insect pheromones, biological control agents) are not effective on their own, if action thresholds are exceeded, and if the presence of a specific insect is expected to cause significant damage or loss. 3. Broad spectrum insecticide is not used within the first 40 days after planting in the production field (unless in accordance with IPM recommendations given by local government extension experts). 4. Insecticide selection is in line with national government recommendations, is registered for use in rice, comes from a non-counterfeit source, and is not on any of the following international lists: ✓ Persistent Organic Pollutants in the Stockholm Convention ✓ 1A or 1B under World Health Organization classification			2) Insecticide is used only if other control methods (e.g., use of hormone or biological substance) are not effective and severity of the insects is expected to cause significant damage or loss. 3) Broad-spectrum insecticides are not used after 40 days of planting, unless the application is in accordance with IPM recommendations given by local agricultural extension officers. *(Note: It is worthwhile to note that broad-spectrum insecticides are not used during the entire crop cycle unless it is necessary following the suggestion by agricutural extension officer.)* 4) Insecticides registered with DOA, MOAC and permitted for application in rice can be used, only when necessary and records are kept on their sources. Prohibited insecticides in the negative list specified in Section 4.7.6.2 are not used. 5) Insecticide is applied only in		

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✓ Annex III of the Rotterdam Convention[15] 5. Insecticide application is targeted to avoid non-application zones. 6. Insecticide application method is according to the product label instructions, follows specified preharvest interval, and does not exceed specified dosage (for worker safety and food safety). 7. Insecticide selection and use responds to the target insect species, considers optimum timing for the target species, and considers local information on insecticide resistant insects (for efficiency).			targeted areas. 6) For worker safety and food safety, insecticide application is in accordance with the product label instruction. The application follows specified PHI and does not exceed dosage specified on the product label or as officially recommended. 7) Insecticide selection and application respond to the target insect pest species. Optimal timing of application to the target, and local information on insecticide-resistance are taken into consideration (for efficiency of use).		
(**18.3**) **Disease Management** Preventative disease control methods can include (effective for fungal, bacterial, and viral diseases): • Balanced nutrient application (e.g., avoid excessive application of nitrogen)	a) No curative disease control methods are required. Curative disease control methods are required and:	3	**4.5.3 Disease Management** Farmers shall follow IPM principles (as in Annex B) and the following criteria: 1) Preventive rice disease control methods are used, such as:	a) No curative disease control methods are required. If farmer need to control diseases by curative methods, farmer meets IPM principles as in Annex B, and:	3

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• Planting at optimum densities • Use of resistant varieties • Synchronized planting • Removal of host plants (e.g., weeds on bunds, rice stubble, volunteer rice) • Keeping the environment between soil and plant canopy either dry or moist (depending on the disease) Farmer follows IPM principles and the following criteria: 1. Preventative disease control methods are used, before considering curative methods. 2. Fungicide is used only if other curative methods (e.g., biological control agents) are not effective on their own and severity of the disease is expected to cause significant damage or loss. 3. Fungicide selection is in line with national government recommendations, is registered for use in rice, comes from a non-counterfeit source, and is not on	b) Farmer effectively controls diseases without the use of fungicide. c) Farmer meets all six criteria listed. d) Farmer meets criteria 1, 2, 3, 4, and 5. e) Farmer meets criteria 1, 2, and 3. f) Farmer does not meet criteria 1, 2, and 3	3 3 2* 1 0	a) balanced nutrient application, e.g., avoid excessive application of nitrogen; b) growing rice at an optimal density; c) choosing disease resistant varieties; d) synchronizing planting time with that of the community; e) removal of host plants such as weeds on bunds, stubbles, and volunteer rice plants; f) keeping the environment between soil and plant canopy either dry or moist (depending on the disease). 2) Fungicide is used only if other control methods (e.g., biological control agents) are not effective and severity of the disease is expected to cause significant damage or loss. 3) Fungicides registered with DOA, MOAC and permitted for application in rice can be used, only when necessary and records are kept on their sources. Prohibited fungicides in the	b) Farmer effectively controls diseases without the use of fungicide. c) Farmer meets all six criteria listed. d) Farmer meets criteria 1, 2, 3, 4, and 5. e) None of above. f) Farmer does not meet criteria 1, 2, and 3.	3 3 2* 0 0

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any of the following international lists: ✓ Persistent Organic Pollutants in the Stockholm Convention ✓ 1A or 1B under World Health Organization classification ✓ Annex III of the Rotterdam Convention[16] 4. Fungicide application is targeted to avoid non-application zones. 5. Fungicide application method is according to the product label instructions, follows the specified preharvest interval or is at least 30 days before harvest (if preharvest interval is not available), and does not exceed specified dosage (for worker safety and food safety). 6. Fungicide responds to the target disease type, considers recent history of fungal disease and predicted weather patterns, and considers local information on fungicide-resistant diseases (for efficiency).			negative list specified in Section 4.7.6.2 are not used. 4) Fungicide is applied only in targeted areas. 5) For worker safety and food safety, fungicide application is in accordance with the product label instruction. The application follows specified PHI and does not exceed dosage specified on the product label or as officially recommended. 6) Fungicide selection and application respond to the target disease of concern. Information on fungicide-resistant diseases is considered for the purchase of appropriate fungicide (for efficiency of use).		

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(18.4) Mollusc Management Preventative mollusc control methods can include: • Physical control (e.g., destruction of egg masses) • Reduction of water level so that snail attack is inhibited during the most vulnerable phase (i.e.,. early growth phase) • Promotion of predators (e.g., wild birds, ducks, fish) • Use of sturdier seedlings during • transplanting by sowing low-density nursery beds and planting older seedlings • Crop rotation or extended dry fallow period Farmer follows IPM principles and the following criteria: 1. Preventative mollusc control methods are used, before considering curative methods. 2. Molluscicide is used only if other curative methods (e.g., collection) are not effective on their	a) No curative mollusc control methods are required. Curative mollusc control methods are required and: b) Farmer effectively controls molluscs without the use of molluscicide. c) Farmer meets all six criteria listed. d) Farmer meets criteria 1, 2, 3, 4, and 5. e) Farmer meets criteria 1, 2, and 3. f) Farmer does not meet criteria 1, 2, and 3.	3 3 3 2* 1 0	**4.5.4 Golden Apple Snail Management** Farmers shall follow IPM principles (as in Annex B) and the following criteria: 1) Preventive methods are used as the first priority for golden apple snail control, such as: a) mechanical method such as destruction of egg masses; b) reduction of water level to prevent entry of golden apple snail into the rice field during the early growth phase; c) promotion of predators, such as wild birds, ducks, fish; d) use of sturdy seedling for transplanting by reducing seed density rate for sowing in nursery beds, and transplanting seedlings that are older than usual; e) crop rotation or extension of dry fallow period. 2) Molluscicide is used only if other control methods (e.g., collection) are not effective and severity of the golden apple	a) No curative mollusc control methods are required. If farmer need to control Golden Apple Snail by curative methods, farmer meets IPM principles as in Annex B, and: b) Farmer effectively controls molluscs without the use of molluscicide. c) Farmer meets all six criteria listed. d) Farmer meets criteria 1, 2, 3, 4, and 5. e) None of above. f) Farmer does not meet criteria 1, 2, and 3.	3 3 3 2* 0 0

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own and severity of the mollusc is expected to cause significant damage or loss. 3. Molluscicide selection is in line with national government recommendations, is registered for use in rice, comes from a non-counterfeit source, and is not on any of the following international lists: ✓ Persistent Organic Pollutants in the Stockholm Convention ✓ 1A or 1B under World Health Organization classification ✓ Annex III of the Rotterdam Convention[17] 4. Molluscicide application is targeted to avoid non-application zones. 5. Molluscicide application method is according to the product label instructions, is not used before manual transplanting, follows specified preharvest interval, and does not exceed specified dosage (for worker safety and food safety).			snails is expected to cause significant damage or loss. 3) Molluscicides registered with DOA, MOAC and permitted for application in rice can be used, only when necessary and records are kept on their sources. Prohibited molluscicide in the negative list specified in Section 4.7.6.2 are not used. 4) Molluscicide is applied only in targeted areas. 5) For worker safety and food safety, molluscicide application is in accordance with the product label instruction, and is not used before transplanting. The application follows specified PHI and does not exceed dosage specified on the product label or as officially recommended. 6) Molluscicide selection and application respond to the golden apple snails. The application is only within the first 3 weeks after transplanting (for efficiency of use).		

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Requirement	**Level of compliance**	**Point**	**Requirement**	**Level of compliance**	**Point**
6. Molluscicide responds to target mollusc species and is used only within the first 3 weeks after crop establishment (for efficiency).					
(**18.5**) **Rodent Management** Preventative rodent control methods can include: • Community rodent management (e.g., rat eradication campaigns, trap crops) • Synchronized planting • Use of narrow bunds (to minimize rodent habitat) • Promotion of predators (e.g., birds of prey, snakes) Farmer follows IPM principles and the following criteria: 1. Preventative rodent control methods are used, before considering curative methods. 2. Rodenticide is used only if other curative methods (e.g., trapping, hunting) are not effective on their own, if there is historical evidence of rodent problems, and if severity	a) No curative rodent control methods are required. Curative rodent control methods are required and: b) Farmer effectively controls rodents without the use of rodenticide. c) Farmer meets all six criteria listed. d) Farmer meets criteria 1, 2, 3, 4, and 5. e) Farmer meets criteria 1, 2, and 3. f) Farmer does not meet criteria 1, 2, and 3.	3 3 3 2* 1 0	**4.5.5 Rodent Management** Farmers shall follow IPM principles (as in Annex B) and the following criteria. 1) Preventive methods are used as the first priority for rodent control, such as: a) rodent management at the community level is in place (e.g., rat eradication policy and campaigns, traps); b) synchronizing planting time with that of the community; c) narrowing bund size (to reduce rodent habitats); d) promotion of predators (e.g., birds of prey, snakes). 2) Rodenticide is used only if other control methods (e.g., trapping, hunting) are not effective and severity of the rodents is	a) No curative rodent control methods are required. If farmer need to control rodents by curative methods, farmer meets IPM principles as in Annex B, and: b) Farmer effectively controls rodents without the use of rodenticide. c) Farmer meets all six criteria listed. d) Farmer meets criteria 1, 2, 3, 4, and 5. e) None of above. f) Farmer does not meet criteria 1, 2, and 3.	3 3 3 2* 0 0

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of the rodent is expected to cause significant damage or loss. 3. Rodenticide selection is in line with national government recommendations, is registered for use in rice, comes from a non-counterfeit source, and is not on any of the following international lists: ✓ Persistent Organic Pollutants in the Stockholm Convention ✓ 1A or 1B under World Health Organization classification ✓ Annex III of the Rotterdam Convention[18] 4. Rodenticide application is targeted to avoid non-application zones. 5. Rodenticide application method is according to the product label instructions, follows specified preharvest interval, and does not exceed specified dosage (for worker safety and food safety).			expected to cause significant damage or loss. 3) Rodenticides registered with DOA, MOAC and permitted for application in rice can be used, only when necessary and records are kept on their sources. Prohibited rodenticide in the negative list specified in Section 4.7.6.2 are not used. 4) Rodenticide is applied only in targeted areas. 5) For worker safety and food safety, rodenticide application is in accordance with the product label instruction. The application follows specified PHI and does not exceed dosage specified on the product label or as officially recommended. 6) Rodenticide to be selected and applied respond to the target rodent species of concern. It is applied before the reproduction phase of rice to avoid any outbreak during grain filling, and be placed under protective cover (e.g., bamboo tubes,		

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6. Rodenticide responds to target rodent species, is used before the reproductive growth phase of the crop to avoid an outbreak during grain filling, and is placed under protective cover (e.g., bamboo tubes, coconut husks) where not easily accessible to birds or exposed to rainfall (for efficiency).			coconut shells) to prevent access of birds or exposure to rainfall).		
(**18.6**) **Bird Management** Non-lethal bird control methods can include: • Synchronized planting • Scare/deterrent devices • Promotion of predators (e.g., birds of prey, shrikes) • Chemical repellents that do not kill birds and without negative side effects	a) No bird control is required. Bird control is required and: b) Bird pests are managed by non-lethal bird control methods. c) Bird pests are managed by live trapping and all non-pest species are released alive. d) Bird pests are managed through discriminatory shooting (hunting). e) Birds are indiscriminately persecuted by killing,	3 3 2 1* 0	**4.5.6 Bird Management** Farmers **shall** follow IPM principles (as in Annex B) by using non-lethal bird control methods, such as: 1) synchronizing planting time with that of the community; 2) use of scare/deterrent devices; 3) promotion of predators (e.g., birds of prey); 4) use of chemical repellents that do not kill birds and do not have any negative side-effects.	a) No bird control is required If farmer need to control birds, b) Bird pests are managed by non-lethal bird control methods. c) Bird pests are managed by live trapping and all non-pest species are released alive. d) Birds are indiscriminately persecuted by killing, poisoning, and/or hunting.	3 3 2* ★ 0

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Requirement	**Level of compliance**	**Point**	**Requirement**	**Level of compliance**	**Point**
	poisoning, and/or hunting.				
Theme 6: Harvest and Post Harvest			**4.6 Harvest and Post-Harvest Handling**		
(19) Timing of Harvest Rice is harvested at the appropriate time to optimize grain quality.[19] General indications of appropriate timing of harvest are: 1. When 80% to 85% of the grains per panicle are straw- or yellow-colored. 2. When moisture content is between 21% and 24%. 3. Between 28 and 35 days after heading in dry season, or between 32 and 38 days after heading in wet season. 4. Between 130 and 136 days after sowing for late, 113 and 125 for medium, and 110 days for early-maturing varieties.	a) Farmer follows criteria 1 or 2. b) Farmer follows criteria 3 or 4. c) Farmer follows criteria 5. d) None of the above.	3 2* 1 0	**4.6.1 Timing of Harvest** Farmers shall harvest paddy at an appropriate time to optimise grain quality. The appropriate harvesting time or mature stage, which can differ among the varieties, **shall** be the timing that 80% to 85% of the grains per panicle are in light yellow or yellow and that grains in the lower parts of the panicle should be in the "hard-dough" stage (firm but not brittle). At this stage, the paddy does not stick to palm when pressing.	a) Farmer follows all criteria b) None of the above	3* 0

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Requirement	**Level of compliance**	**Point**	**Requirement**	**Level of compliance**	**Point**
5. Grains in the lower parts of the panicle should be in the "hard-dough" stage (firm but not brittle); grains that stick to your hand are too wet.					
(20) **Harvest Equipment** Rice is harvested with clean equipment to prevent contamination and mixing of varieties. Machines (if used) are adjusted to optimum settings and operated according to the crop and field conditions resulting in minimum quality and shattering loss.	For manual harvesting: a) Heavy equipment is cleaned before use. b) Heavy equipment is not cleaned before use. For mechanical harvesting: c) Harvest equipment is cleaned before use and machine settings are adjusted. d) Either harvest equipment is cleaned before use, or machine settings are adjusted. e) Harvest equipment is not cleaned before use and machine settings are not adjusted.	3* 0 3* 1 0	**4.6.2 Harvest Equipment and Machinery** Farmers **shall** manage the equipment and machinery used in harvesting as follows: 1) check and clean the equipment before using to prevent contamination and co-mingling of rice varieties; 2) adjust the machinery at optimum settings to minimise losses in quality and quantity.	For manual harvesting: a) Heavy equipment is cleaned before use. b) Heavy equipment is not cleaned before use. For mechanical harvesting: a) Harvest equipment is cleaned before use and machine settings are adjusted. b) Harvest equipment is not cleaned before use and machine settings are not adjusted.	3* 0 3* 0

SRP Standard (Version 2.1)			TAS for Sustainable Rice		
Requirement	**Level of compliance**	**Point**	**Requirement**	**Level of compliance**	**Point**
(21) **Drying Time** Rice drying on-farm starts within 24 hours after harvest. The final moisture content is documented and depends on the further use of the rice: • 14-18% moisture content for direct selling, for sale within 3 days. • 16% or less moisture content for sale within 1 week. • 14% moisture content or less for storing grains longer than 1 week. • 12% moisture content or less for storing seeds. Within a batch, the moisture content of a grain is not more than 1% after drying compared with the average moisture content (i.e., moisture gradient). If rice is not dried on-farm (e.g., at farmer's concrete yard), it is transported to a drying (e.g., miller) or processing facility within 12 hours after harvest.	a) Farmer transports rice to a drying or processing facility within 12 hours after harvest. b) Farmer starts drying rice on-farm within 24 hours after harvest and reaches 16% or less moisture content and not more than 1% moisture gradient within 1 week. c) Farmer starts drying rice on-farm within 24 hours after harvest and reaches 14-18% or less moisture content and not more than 1% moisture gradient within 3 days. d) Farmer starts drying rice on-farm within 24 hours after harvest but cannot document 18% or less moisture	3 3 2* 1	**4.6.3 Drying Time** In case farmers do not reduce moisture content on-farm, the paddy shall be transported to business operators (e.g., rice mill, rice processing plant) within 12 hours after harvest. In case farmers reduce moisture content on-farm, the drying process shall start within 24 hours after harvest and then the final moisture content of paddy shall be checked. In general, the approximate moisture content of paddy for storage and distribution within 3 days, should not be higher than 18% by mass (wet basis).	a) Farmer transports rice to a drying or processing facility within 12 hours after harvest. b) Farmer starts drying rice on-farm within 24 hours after harvest and reaches 16% or less moisture content and not more than 1% moisture gradient within 1 week. c) Farmer starts drying rice on-farm within 24 hours after harvest and reaches 18% or less moisture content and not more than 1% moisture gradient within 3 days. d) Farmer does not transport rice to a drying or processing facility within 12 hours after harvest or start drying rice on-farm within 24 hours after harvest.	3 3 2* 0

SRP Standard (Version 2.1)			TAS for Sustainable Rice		
Requirement	**Level of compliance**	**Point**	**Requirement**	**Level of compliance**	**Point**
	content or not 1% or less moisture gradient. e) Farmer does not transport rice to a drying or processing facility within 12 hours after harvest or start drying rice on-farm within 24 hours after harvest. 	0			
(22) **Drying Technique** Rice is dried by using sustainable drying techniques. For sun drying: 1. Layer thickness is 2-4 cm. 2. Rice is turned periodically. 3. Rice is protected from rain. 4. Rice is protected from mycotoxins, animals, and people (e.g., on nets, mats, or canvas). For mechanical drying: 5. Use of quality dryers certified to produce optimum grain quality (no	a) Farmer does not do the drying himself/herself. a) Farmer uses mechanical drying and follows criteria 5 and 6 b) Farmer uses sun drying and follows criteria 1, 2, 3 and 4. c) Farmer uses sun drying and follows criteria 3 and 4. d) None of the above.	n/a 3 2* 1 0	**4.6.4 Drying Technique** In case farmers reduce moisture content on-farm, they **shall** practice as follows: 1) For sun drying, place paddy pile on underlay materials (e.g., on nets, mats or canvas), then a) spread paddy to a layer thickness of 2 cm to 4 cm; b) turn the paddy periodically; c) protect the paddy from rain and dew; d) keep the paddy safe from mould, including	a) Farmer does not do the drying himself/herself. b) Farmer uses mechanical drying and follows criteria 2a) and 2b) c) Farmer uses sun drying and follows criteria 1a), 1b), 1c) and 1d). d) None of the above. 	n/a 3 2* 0

SRP Standard (Version 2.1)			TAS for Sustainable Rice		
Requirement	**Level of compliance**	**Point**	**Requirement**	**Level of compliance**	**Point**
discoloration, smell, and minimized amount of broken rice). 6. Set dryer at a maximum temperature of 43°C for flat-bed batch dryers and 55°C for recirculating batch dryers.			contamination from animals and people. 2) For mechanical drying, a) use qualified dryers to produce optimal quality paddy (no discolouration, no off-odour, and minimising amount of broken rice); b) set temperature of dryer not to exceed 43°C [13] for flat-bed batch dryers and 55°C for re-circulating batch dryers.		
(23) **Rice Storage** Rice is safely stored to maintain its quality, through hermetic storage or the following measures: 1. Prevent contamination with hazardous substances, such as agrochemicals. 2. Maintain 14% moisture content or less. 3. Prevent rewetting. 4. Prevent pest damage without fumigation.	a) Farmer does not store rice on-farm. a) Farmer practices hermetic storage or applies all five measures b) Farmer applies measures 1, 2, 3 and 4 only. c) Farmer applies measures 1 and 2 only. d) None of the above.	3 3 2 1* 0	**4.6.5 Rice Storage** Paddy **shall** be safely kept in a hermetic storage that can prevent moisture to maintain its quality, or provided with the following measures: 1) prevent contamination from hazardous substances, such as pesticides, chemical fertilisers; 2) maintain moisture content at 14% by mass (wet basis) or less; 3) prevent rewetting;	a) Farmer does not store rice on-farm. b) Farmer practices hermetic storage or applies all six measures c) Farmer applies measures 1), 2), 3), 4) and **6**) only. d) None of the above.	n/a 3 2* ★ 0

[13] °C is the symbol used in SI for "degree Celsius".

SRP Standard (Version 2.1)			TAS for Sustainable Rice		
Requirement	**Level of compliance**	**Point**	**Requirement**	**Level of compliance**	**Point**
5. Rice is cleaned before storage (removal of dirt, weeds, and insects).			4) prevent damage from pest without applying chemical fumigation; 5) clean paddy before storage (by removing dirt, weeds, and insects); 6) **separately store paddy from other paddy (non-sustainable paddy and off-types), with clear identification, to prevent co-mingling**.	***Note**: preventive control for pest listed in Criteria 4) such as trapping, containing in bags.*	
(24) Rice Stubble Rice stubble is managed in a sustainable way to mitigate greenhouse gas emissions, minimize environmental impacts, and retain or improve soil quality.[20] Rice stubble is: 1. Not burned. 2. Allowed sufficient time (at least 3 weeks) for aerobic decomposition before wetting.	a) Farmer meets criteria 1 and 2, without plowing of rice stubble under. b) Farmer meets criteria 1 and 2, with plowing of rice stubble under while soil is dry c) Farmer meets criteria 1, but plows rice stubble under while soil is flooded. d) Farmer burns rice stubble.	3 2 1* 0	**4.6.6 Rice Stubble** Burning of rice stubble **is not allowed**. Rice stubble shall be managed properly to mitigate greenhouse gas emissions, minimise environmental impacts, and retain or improve soil quality by implementing **one of the following** measures: 1) allow sufficient time of at least 21 days for rice stubble to decompose before wetting; 2) allow sufficient time of at least 21 days for rice stubble to decompose along with ploughing rice stubble under, while soil is dry, before wetting;	a) Farmer does not burn and meets criteria 1) without ploughing of rice stubble under b) Farmer does not burn and meets criteria 2) c) Farmer does not burn and meets criteria 3), d) Farmer burns rice stubble.	3 2 1* 0

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Requirement	**Level of compliance**	**Point**	**Requirement**	**Level of compliance**	**Point**
			3) plough rice stubble under while soil is flooded.		
(25) **Rice Straw** Rice straw is managed in a sustainable way to mitigate greenhouse gas emissions, minimize environmental impacts, and retain or improve soil quality. Rice straw is: 1. Not burned. 2. Allowed sufficient time (at least 2 weeks) for aerobic decomposition if rice straw is left on the field or plowed under. 3. Collected, used as livestock feed and animal manure is returned to the field. Or collected, composted, and returned to the field.	a) Farmer meets criteria 1 and 3. b) Farmer meets criteria 1 and 2 only. c) Farmer meets criteria 1 only. d) Farmer burns rice straw.	3 2 1* 0	**4.6.7 Rice Straw** Burning of rice straw **is not allowed**. Rice straw shall be managed properly to mitigate greenhouse gas emissions, minimise environmental impacts, and retain or improve soil quality by implementing **one of the following** measures: 1) leave rice straw in the field or plough it under for at least 14 days to let it decompose; 2) collect and use rice straw, for example, as livestock feed and then return the animal manure to the field, or collect rice straw and return as compost to the field.	a) Farmer does not burn and meets criteria 2). b) Farmer does not burn and meets criteria 1) c) Farmer burns rice stubble.	3 2* 0
Theme 7: Health and Safety			**4.7 Health and Safety**		
(26) **Safety Instruction and First Aid**	a) Workers, including working household members, receive	2	**4.7.1 Safety Instruction and First Aid**	a) Workers, including working household members, receive safety instruction annually, and	2

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Requirement	**Level of compliance**	**Point**	**Requirement**	**Level of compliance**	**Point**
Workers, including working household members, receive regular safety instructions on how to prevent work related accidents or diseases, where to access first aid kits, and how to contact health workers. The first aid kit should be well-labeled and available on-farm or placed at a designated medical center known by and accessible to farmers in a group.	safety instruction annually, and first aid kit is available on farm or at a designated medical center known by and accessible to farmers in a group. b) Workers, including working household members, have received safety instruction, and are aware of how to contact the nearest health worker or clinic. c) There is no safety instruction.	1* 0	Farmers, operators and their household members receive regular safety instructions or understand how to prevent work-related accidents or injuries, including how to contact local health personnel. A first aid kit should be well-identified and made available on-farm or a nearby health centre should be known by and accessible to farmers.	first aid kit is available on farm or at a nearby health centre known by and accessible to farmers in a group. b) Workers, including working household members, have received safety instruction, and are aware of how to contact the nearest health worker or clinic. c) There is no safety instruction.	 1* 0
(27) **Tools and Equipment** Tools and equipment for farm operations and postharvest processes are working and efficient in use by regular and proper maintenance and calibration. Tools are adequately stored. Pesticide application equipment (if	a) Tools and equipment maintained and calibrated within the current cropping season. b) Tools and equipment maintained and	2 1*	**4.7.2 Tools and Equipment** Farmers or farmer groups shall store, maintain and calibrate/adjust tools and equipment for farm operations and postharvest management for a well-functioning and efficient use, including pesticide	a) Tools and equipment maintained and calibrated/adjusted within the current cropping season. b) Tools and equipment not maintained and calibrated/adjusted.	2* 0

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pesticide(s) is (are) applied) is maintained and calibrated to prevent leakage or contamination.	calibrated within the past 2 years. c) Tools and equipment not maintained and calibrated within the past 2 years. 	0	sprayers to prevent leakage or contamination.		
(28) **Training of Pesticide Applicators** Pesticide applicators receive training and apply good practices on the safe handling and use of pesticides, including: • An explanation of the names, toxicity, health risks, and other relevant information related to all substances to be applied. • Techniques for correct handling of substances. • Preventative measures for reducing possible damage to health and the environment caused by substances. • Emergency procedures for cases involving poisoning or undue contact with substances.	a) There is no use of pesticides. If pesticide(s) is (are) used, in the last 5 years: b) Pesticide applicators participated in training and demonstrate that relevant content is applied. c) Pesticide applicators participated in training. d) Pesticide applicators did not participate in training. 	2 2 1* 0	**4.7.3 Training on Pesticide Application** Farmers or contractors for pesticide application **have received** trainings related to methods of safe handling and use of pesticides. They **shall** demonstrate that the knowledge is applied. The training topics include: 1) explanation of names, toxicity, health risks, and other relevant information related to all pesticides to be used; 2) proper handling of pesticides; 3) preventive measures to reduce harm to health and the environment caused by pesticides;	a) There is no use of pesticides. If pesticide(s) is (are) used, in the last 5 years: b) Pesticide applicators participated in training and demonstrate that relevant content is applied. c) Pesticide applicators participated in training. d) Pesticide applicators did not participate in training. 	2 2 1* 0

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			4) emergency procedures, in case of exposure or direct contact with pesticides.		
(29) **Personal Protective Equipment (PPE)** Pesticide applicators use functional and good-quality PPE as recommended on the product label, including: • Chemical-resistant gloves • Masks • Dermal protection (e.g., long sleeved shirt, long-trouser legs) • Boots • Eye protection during mixing and application	a) There is no use of pesticides. If pesticide(s) is (are) used: b) In the case of spraying: Pesticide applicators use all five of the listed PPE items of good quality (or what is recommended on the product label). c) In the case of plane, drone, or tractor application: Pesticide applicators use chemical-resistant gloves and masks of good quality during mixing (or what is recommended on the product label).	2 2 2 1*	**4.7.4 Personal Protective Equipment (PPE)** In case pesticides are used, farmers **shall use** quality and well-functioning PPEs as recommended on the labels. Such PPE includes: 1) chemical-resistant gloves; 2) masks; 3) dermal protection (e.g., long-sleeved shirt, trousers); 4) boots; 5) eye protection glasses against chemicals. In case farmers do not apply pesticides by themselves, contractors shall be informed to follow strictly this requirement while mixing and spraying pesticides under the supervision and monitoring of farmers.	a) There is no use of pesticides. If pesticide(s) is (are) used: b) In the case of spraying: Pesticide applicators use all five of the listed PPE items of good quality (or what is recommended on the product label). c) In the case of plane, drone, or tractor application: Pesticide applicators use chemical-resistant gloves and masks of good quality during mixing (or what is recommended on the product label). d) In the case of spraying: Pesticide applicators use at least chemical resistant gloves and masks of good quality.	2 2 2 1* ★

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	d) In the case of spraying: Pesticide applicators use at least chemical resistant gloves and masks of good quality. e) None of the above. 	0		e) None of the above. 	0
(30) **Washing and Changing** Designated areas for washing of PPE, bathing, and changing are available for pesticide applicators after finishing the application. All PPE worn during pesticide application is washed after use and does not enter housing. These designated areas are separated from areas used for household laundry.	a) There is no use of pesticides. If pesticide(s) is (are) used: b) Designated areas for washing and changing (separated) are available, and they are not used for household laundry. c) Designated area for washing and changing (combined) is available, and it is not used for household laundry.	2 2 1*	**4.7.5 Washing and Changing** Farmers or farmer groups **shall** designate areas for changing, bathing, and washing PPE. After pesticide application, the PPE worn during pesticide application shall be washed and shall not be brought into the house. The areas for changing and washing PPE **shall** be separate from the area for household laundry.	a) There is no use of pesticides. If pesticide(s) is (are) used: b) Designated areas for washing and changing (separated) are available, and they are not used for household laundry. c) Designated area for washing and changing (combined) is available, and it is not used for household laundry. d) Area(s) for washing and changing for pesticide	2 2 1* 0

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	d) Area(s) for washing and changing for pesticide applicators is (are) used for household laundry. 	0		applicators is (are) used for household laundry. 	
(31) **Applicator Restrictions** Pesticides are not applied by pregnant or lactating women, by persons below 18 years, or by persons who suffer from chronic or respiratory diseases.	a) There is no use of pesticides. If pesticide(s) is (are) used: b) Pesticides are not applied by pregnant or lactating women, by persons below 18 years, or by persons who suffer from chronic or respiratory diseases. c) Pesticides are applied by pregnant or lactating women, by persons below 18 years, or by persons	2 2* 0	**4.7.6 Restrictions for Pesticide Application**		
			4.7.6.1 In case pesticides are used by farmers or farmer groups, they shall not be applied by: 1) pregnant or lactating women; 2) minors under the age of 18; 3) persons suffering from chronic or respiratory diseases	a) There is no use of pesticides. If pesticide(s) is (are) used: b) Pesticides are not applied by pregnant or lactating women, by persons below 18 years, or by persons who suffer from chronic or respiratory diseases. c) Pesticides are applied by pregnant or lactating women, by persons below 18 years, or by persons who suffer	2 2* 0

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Requirement	**Level of compliance**	**Point**	**Requirement**	**Level of compliance**	**Point**
	who suffer from chronic or respiratory diseases. 			from chronic or respiratory diseases. 	
			4.7.6.2 Pesticides specified on the prohibited pesticide lists[14] shall not be used.	a) There is no use of pesticides. If pesticide(s) is (are) used: b) No pesticide specified on the prohibited pesticide lists is used. c) Pesticides specified on the prohibited pesticide lists is used.	n/a C* ★ NC

[14] The prohibited pesticide lists cover:

1) Hazardous substances, Type-4 according to the Notification of the Ministry of Industry announcement entitled Inventory of Hazardous Substances;
2) Persistent Organic Pollutants (POPs) in the Stockholm Convention on POPs. Available source: http://chm.pops.int/;
3) Extremely hazardous substances Class 1A or highly hazardous Class 1B under the World Health Organization (WHO) recommended classification of pesticides by hazard and guideline to classification. Available source: https://www.who.int/;
4) Substances in Annex III of the Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade. The substances on this list may be safe to use under controlled circumstances and justification must be provided for use. Available source: http://www.pic.int/.

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Requirement	**Level of compliance**	**Point**	**Requirement**	**Level of compliance**	**Point**
				 	
			4.7.6.3 In case where there is a well-specified purchase order from a trading partner in a destination country, the prohibited pesticides specified by the importing country shall not be used. Otherwise, the pesticides of which the maximum residue limits have been established by such importing country can be used.	a) There is no purchase order from a trading partner in a destination country b) There is no use of pesticides. If pesticide(s) is (are) used: c) No pesticide specified on the prohibited pesticide lists is used. d) Pesticides specified on the prohibited pesticide lists is used.  	n/a n/a C*  NC
(32) Re-entry Time Re-entry time after the use of pesticides: 1. Follows the recommendation on the product label, or after 48 hours if the label does not give a recommendation.	a) There is no use of pesticides. If pesticide(s) is (are) used: b) Farmer meets criteria 1 and meets criteria 2	2 2	**4.7.7 Re-entry after Pesticide Application** If farmers use any pesticides, they **shall** practice the following prior to re-entering the area: 1) follow the re-entry time recommended on the product	a) There is no use of pesticides. If pesticide(s) is (are) used: b) Farmer meets the listed practice 1) and communicates to the community by placing	2 2

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2. Is clearly communicated.	by placing warning signs or symbols in the fields. c) Farmer meets criteria 1 and meets criteria 2 by verbally communicating re-entry time. d) Farmer does not meet criteria 1 and/or 2.	1* 0	label. If not, 48 hours after pesticide application is applied; 2) communicate to the community about the prohibited time for entering by placing warning signs or at least by verbal notification.	warning signs or symbols in the fields. c) Farmer meets the listed practice 1) and communicates to the community by verbally communicating re-entry time. d) Farmer does not meet one of listed practices.	1* 0
(33) **Pesticide and Chemical Storage** Pesticides and inorganic fertilizers (including partly-empty containers) are: 1. Labeled. 2. Stored in a locked place that is separate from fuel, food, and rice and which is out of reach of children.	a) There is no storage of pesticides and/or inorganic fertilizers. If pesticide(s) and/or inorganic fertilizer(s) is (are) stored: b) Farmer meets criteria 1 and 2. c) Farmer meets criteria 2. d) None of the above.	2 2 1* 0	**4.7.8 Pesticide and Chemical Storage** Pesticides and inorganic fertilisers, including their partly-empty containers, **shall** be: 1) labelled; 2) stored in a locked place that is separate from fuel, food and rice, and is out of reach of children.	a) There is no storage of pesticides and/or inorganic fertilizers. If pesticide(s) and/or inorganic fertilizer(s) is (are) stored: b) Farmer meets criteria 1) and 2). c) None of the above.	2 2* 0

SRP Standard (Version 2.1)			TAS for Sustainable Rice		
Requirement	**Level of compliance**	**Point**	**Requirement**	**Level of compliance**	**Point**
					
(**34**) **Pesticide Disposal** Empty pesticide containers, surplus pesticides, and obsolete pesticides (e.g., past shelf life or banned) are disposed of properly, through a collection, return, or disposal service, or through good practices in pesticide disposal. Good practices in pesticide disposal include: 1. Empty containers are rinsed 3 times with water. Surplus spray and wash water is applied over an unmanaged part of the farm, away from water bodies. 2. Containers are made unusable by crushing or puncturing before burying them on-farm. 3. Containers are buried in a designated area (at least 20 meters away from a water body) and are	a) There is no use of pesticides. If pesticide(s) is (are) used: b) Farmer participates in a collection, return, or disposal service, especially if there is a large volume of waste. c) In the absence of such a service, farmer meets all four criteria for good practices in pesticide disposal. d) In the absence of such a service, farmer does not meet all four criteria for good practices in pesticide disposal. e) There is a collection, return, or disposal service, but it is not used.	2 2 1* 0 0	**4.7.9 Pesticide Disposal** Farmers **shall** dispose of empty pesticide containers, surplus pesticides, and obsolete pesticides (e.g., past shelf life or banned) by proper method, which does not affect human and the environment, through the following practices: 1) collect empty or expired pesticide containers; 2) sort and store the above-mentioned containers in a safe place that does not affect the environment; 3) return the empty, expired, or obsolete pesticide containers to the pesticide dealers or send them to the responsible agency for disposal. *(Note: Triple rinsing method should be applied to all recommended empty pesticide containers disposal methods for the purpose of pesticide exposure risks reduction.)*	a) There is no use of pesticides. If pesticide(s) is (are) used: b) Farmer participates in a collection, return, or disposal service, especially if there is a large volume of waste. c) In the absence of such a service, farmer meets all four criteria for good practices in pesticide disposal. d) In the absence of such a service, farmer does not meet all four criteria for good practices in pesticide disposal. e) There is a collection, return, or disposal service, but it is not used.	2 2 1* 0 0

SRP Standard (Version 2.1)			TAS for Sustainable Rice		
Requirement	**Level of compliance**	**Point**	**Requirement**	**Level of compliance**	**Point**
not accessible to children or unauthorized persons. 4. Obsolete pesticides are returned to the dealers or, if not possible, disposed of in a manner that minimizes exposure to humans and the environment.			In case the above practices cannot be followed, the good practices for the disposal of pesticides **shall** be done as follows: 1) rinse empty containers 3 times with water and do not discard such water into public water sources; 2) destroy containers by crushing or puncturing before burying them; 3) bury such empty and destroyed containers, referred to 1) and 2) of this paragraph, in an area of at least 20 m [15] away from public water sources and is not accessible to children or unauthorised persons; 4) return the obsolete pesticides to the pesticide dealers, or dispose of such pesticides in a manner that minimises exposure to humans and the environment. *(Note: Triple rinsing method in the list 1) should be applied to all recommended empty pesticide*		

[15] m is the symbol used in SI for "meter".

SRP Standard (Version 2.1)			TAS for Sustainable Rice		
Requirement	**Level of compliance**	**Point**	**Requirement**	**Level of compliance**	**Point**
			containers disposal methods for the purpose of pesticide exposure risks reduction.)		
Theme 8: Labour Rights			**4.8 Labour Rights**		
(35) Child Labour Children below 15 years are not engaged as workers.[21] Family members below 15 years of age living on family farms may participate in farming activities that consist of light, age-appropriate duties that give them an opportunity to develop skills, only if activities are: 1. Not harmful to their health and development. 2. Do not interfere with schooling and leisure time. 3. Under supervision of an adult. 4. Not in excess of 14 hours a week. Age of workers is always verified and documented.	a) Farmer does not engage children below 15 years of age as workers. b) Family members below 15 years of age are living and working on the farm, and farmer complies with all four criteria. c) Family members below 15 years of age are living and working on the farm, and farmer does not comply with one or more criteria. d) Farmer engages children below 15 years of age (who are not family members living on the farm) as workers.	3 3* 0 0	**4.8.1 Child Labour** Children under the age of 15 shall not be engaged by a farmer as workers. Exemption is provided only when the family members under the age of 15 may participate in farming activities of their family that consist of light, age-appropriate duties, to help their parents and give them an opportunity to develop skills. The types of activities that they may participate are as follows: 1) activities that are not harmful to their health and development; 2) activities that do not interfere with their schooling and leisure time; 3) activities that are under supervision of an adult; 4) activities that are not in excess of 14 hours a week.	a) Farmer does not engage children below 15 years of age as workers. b) Family members below 15 years of age are living and working on the farm, and farmer complies with all four criteria of activity. c) Family members below 15 years of age are living and working on the farm, and farmer does not comply with one or more criteria of activity. d) Farmer engages children below 15 years of age (who are not family members living on the farm) as workers.	3 3* 0 0

SRP Standard (Version 2.1)			TAS for Sustainable Rice		
Requirement	**Level of compliance**	**Point**	**Requirement**	**Level of compliance**	**Point**
					
(**36**) **Hazardous Work** All workers follow applicable safety rules at work (for example going indoors in case of risk of lightning) Children below 18 years are not assigned to work which is likely to harm their safety and health.[22] Children below 18 years of age do not conduct hazardous work or work that may harm their physical, mental, or moral wellbeing[23] They do not: 1. Work in dangerous locations. 2. Work with dangerous machinery, equipment, and tools (as defined by national laws and regulations). 3. Carry heavy loads. 4. Work with dangerous substances.	a) There are no children below 18 years of age working on the farm. b) There are children below 18 years of age working on the farm, and farmer complies with all five criteria. c) There are children below 18 years of age working on the farm, and farmer does not comply with one or more criteria. 	n/a 3* 0	**4.8.2 Hazardous Work**		
			4.8.2.1 All farmers or workers **shall** follow applicable safety rules at work, for example going indoors in case of risk of lightening.	a) Farmer and workers follow applicable safety rules at work b) Farmer and workers do not follow applicable safety rules at work 	C*  NC
			4.8.2.2 Minors under the age of 18 **shall** not be assigned to hazardous works which are likely to harm their safety and health, including physical, mental, or moral wellbeing. The hazardous works are: 1) work in dangerous locations; 2) work with dangerous machinery, equipment, and tools as defined by national labour laws and regulations[16]; 3) Carry heavy loads;	a) There are no children below 18 years of age working on the farm. b) There are children below 18 years of age working on the farm, and farmer complies with all five criteria of hazardous work. c) There are children below 18 years of age working on the farm, and farmer does not	n/a 3*  0

[16] The Labour Protection Act B.E. 2541 and its amendments

SRP Standard (Version 2.1)			TAS for Sustainable Rice		
Requirement	**Level of compliance**	**Point**	**Requirement**	**Level of compliance**	**Point**
5. Work at night. Age of workers is always verified and documented			3) carrying a load that is heavier than the weight specified in national labour laws and regulations[16/]; 4) work with dangerous substances; 5) work at night that is not in accordance with national labour laws and regulations[16/].	comply with one or more criteria of hazardous work.	
			4.8.2.3 Age of workers is always verified and documented.	a) There is documentation on age of worker for verification. b) There is no documentation on age of worker and it is not verified.	C* NC
(37) **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. b) Children living on the farm within the age of compulsory	n/a 3	**4.8.3 Education** Farmers send children of compulsory schooling age to school throughout the whole academic year. If not, efforts should be made to provide them with education.	a) There are no children living on the farm within the age of compulsory schooling. b) Children living on the farm within the age of compulsory schooling go to school all year long.	n/a 3

SRP Standard (Version 2.1)			TAS for Sustainable Rice		
Requirement	**Level of compliance**	**Point**	**Requirement**	**Level of compliance**	**Point**
	schooling go to school all year long. c) Children living on the farm within the age of compulsory schooling go to school, but not all year long. d) Children living on the farm within the age of compulsory schooling do not go to school, but efforts are made to provide education. e) Children living on the farm within the age of compulsory schooling do not go to school, and no efforts are made to provide education.	2 1* 0		c) Children living on the farm within the age of compulsory schooling go to school, but not all year long. d) Children living on the farm within the age of compulsory schooling do not go to school, but efforts are made to provide education. e) Children living on the farm within the age of compulsory schooling do not go to school, and no efforts are made to provide education.	2 1* 0
(38) **Forced Labour** There is no forced, compulsory, or slave labor used, including trafficked and bonded labor, labor by prisoners, or the use of	a) Farmer does not engage any workers. b) Farmer demonstrates full compliance with	n/a 3*	**4.8.4 Forced Labour** Farmers shall not use illegal labour force on farm, namely forced, extorted, threatened labours, slave	a) Farmer does not engage any workers. b) Farmer demonstrates full compliance with all six criteria.	n/a 3*

SRP Standard (Version 2.1)			TAS for Sustainable Rice		
Requirement	**Level of compliance**	**Point**	**Requirement**	**Level of compliance**	**Point**
extortion, debt, threats, fines or penalties.[24] The following criteria are met: 1. 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. 2. Workers are not charged recruiting or hiring fees that require them to be indebted to the farm (or recruiting agency). 3. Workers are allowed to leave the farm's premises at the end of their shifts. 4. Regular working hours of workers do not exceed 48 hours per week, with at least 1 full day of rest for every 6 consecutive days worked. 5. Spouses and children of contracted workers are not forced to work on the farm. 6. The farm does not participate In or allow human trafficking.	all six criteria. (Smallholders may demonstrate compliance without documentation.) c) Farmer does not comply with one or more of the criteria. 	0	labours, labours with debt obligations, including human trafficking and illegal labours. The following criteria shall be met: 1) no withholding of (the total or part of) employees' wages, salary, remuneration, property, or personal documents (e.g., identity cards and travel documents) in order to force such employees to continue to work more than the agreed period of time; 2) employees are not charged for recruiting or hiring fees that make them to be in debt to the farm owner or the recruiting agency; 3) employees are allowed to leave the farm's premises at the end of their shifts; 4) regular working hours of employees do not exceed 48 hours per week, with at least 1 full day of rest for every 6 consecutive working days; 5) spouses and children of contracted employees are not forced to work on the farm;	(Smallholders may demonstrate compliance without documentation.) c) Farmer does not comply with one or more of the criteria. 	0

SRP Standard (Version 2.1)			TAS for Sustainable Rice		
Requirement	**Level of compliance**	**Point**	**Requirement**	**Level of compliance**	**Point**
			6) human trafficking shall not be involved or allowed.		
(39) **Discrimination** There is no discrimination or disrespectful treatment of workers, including working household members[25] The following criteria are met: 1. No discrimination on the basis of gender, ethnic background, national origin, religion, disability, sexual orientation, pregnancy, worker organization membership, or political affiliation. 2. No distinction, exclusion, or preference to harm equality of opportunity with regard to hiring, training, task assignment, benefits, remuneration, advancement, termination, retirement, or other employment-related decision. 3. No job-related medical testing as a condition of employment (except lawful drug testing). 4. No behavior, gesture, language, or physical contact that is sexually abusive, coercive, or threatening.	a) Farmer does not engage any workers. b) Farmer demonstrates full compliance with all five criteria. (Smallholders may demonstrate compliance without documentation.) c) Farmer does not comply with one or more of the criteria.	n/a 3* 0	**4.8.5 Discrimination** Farmers shall not discriminate or disrespectfully treat workers as well as their working household members. The following criteria shall be met: 1) no discrimination on the basis of gender, ethnic background, national origin, religion, disability, sexual orientation, pregnancy, worker organization membership, or political affiliation; 2) no distinction, exclusion, or bias to harm equality of opportunity with regard to hiring, training, task assignment, benefits, remuneration, advancement, termination, retirement, or other employment-related decisions; 3) no extra medical testing as a condition of employment other than that specified by the relevant laws and regulations (except drug testing);	a) Farmer does not engage any workers. b) Farmer demonstrates full compliance with all five criteria. (Smallholders may demonstrate compliance without documentation.) c) Farmer does not comply with one or more of the criteria.	n/a 3* 0

SRP Standard (Version 2.1)			TAS for Sustainable Rice		
Requirement	**Level of compliance**	**Point**	**Requirement**	**Level of compliance**	**Point**
5. No bullying or physical punishment.			4) no behaviour, gesture, language, or physical contact that is sexually abusive, coercive, or threatening; 5) no bullying or physical punishment.		
(40) **Freedom of Association** Workers have the right to establish and/or join an association of their choice without interference and take part in collective bargaining on working conditions.[26] The following criteria are met: 1. Workers can freely establish and join workers' organizations, both internal (e.g., workers' representations) and external (e.g., trade unions), and take part in collective bargaining on working conditions. 2. Labor organizations are allowed to conduct activities on-farm. 3. Effective functioning of labor organizations Is not blocked and representatives of such organizations are not discriminated against.	a) Farmer does not engage any workers. b) Farmer demonstrates full compliance with all four criteria. (Smallholders may demonstrate compliance without documentation.) c) Farmer does not comply with one or more of the criteria.	n/a 3* 0	**4.8.6 Freedom of Association** Employees have the right to establish or join an association of their choice without farmers' interference, and to take part in collective bargaining on working conditions. Farmers shall also meet the following criteria: 1) employees can freely establish or join workers' organizations, both internal (e.g., workers' representations) and external (e.g., trade unions), and take part in collective bargaining on working conditions; 2) labour organizations are allowed to conduct activities on-farm; 3) effective functioning of labour organizations is not blocked, and representatives of such organizations are not treated with discrimination;	a) Farmer does not engage any workers. b) Farmer demonstrates full compliance with all four criteria. (Smallholders may demonstrate compliance without documentation.) c) Farmer does not comply with one or more of the criteria.	n/a 3* 0

SRP Standard (Version 2.1)			TAS for Sustainable Rice		
Requirement	**Level of compliance**	**Point**	**Requirement**	**Level of compliance**	**Point**
4. Farmer complies with collective bargaining agreements.			4) farmers shall comply with collective bargaining agreements.		
(41) **Wages** The following criteria are met: 1. Wages of workers meet or exceed the legal minimum wage required under local or national laws and regulations. If wages are negotiated voluntarily between employers and workers' associations, the negotiated wage amount(s) apply to all workers covered under the negotiated agreement. This includes providing equal pay to men and women for work of equal value. 2. Wages are paid in a timely manner and on a regular basis. 3. Wages are paid in a legal currency, or in another form acceptable to workers without creating any form of dependency. 4. Overtime is voluntary and is paid at the rate required by local or national laws and regulations, or as collectively negotiated.	a) Farmer does not engage any workers. b) Farmer demonstrates full complies with all four criteria. c) Farmer demonstrates less than full compliance and/or does not comply with one or more of the criteria.	n/a 3* 0	**4.8.7 Wages** Farmers shall practice in accordance with the following criteria: 1) wages of employees meet or exceed the legal minimum wage required by local or national laws and regulations or as agreed upon by the workers' associations, without gender discrimination; 2) wages are paid in a timely manner and on a regular basis; 3) wages are paid in a legal currency, or in another form acceptable to employees without creating any forms of dependency; 4) wages are paid at the rate required by local or national laws and regulations, or as collectively negotiated and agreed upon. Working overtime is voluntary.	a) Farmer does not engage any workers. b) Farmer demonstrates full complies with all four criteria. c) Farmer demonstrates less than full compliance and/or does not comply with one or more of the criteria.	n/a 3* 0

SRP Standard (Version 2.1)			TAS for Sustainable Rice		
Requirement	**Level of compliance**	**Point**	**Requirement**	**Level of compliance**	**Point**
-	-	-	**4.9 Processing of Paddy to Sustainable Rice Products**		
-	-	-	**4.9.1 Purchasing** Paddy and rice (such as brown rice) as raw materials for processing purchased by farmers, farmer groups, or business operators, are traceable to their sources of certified sustainable rice fields which comply to this standard or its equivalence. The purchasing quantity **shall** be recorded.	a) There is no activity on rice milling and processing, or farmer does not produce sustainable rice product	n/a
-	-	-		b) Paddy and rice (such as brown rice) used as raw materials can be traceable their sources of certified sustainable rice fields which comply to this standard or its equivalence, and there is a record of purchasing quantity	C* ★
-	-	-		c) There is no evidence for traceability of raw material's source and/or non-certified raw material on sustainable production is used for milling and/or processing.	NC
-	-	-			

SRP Standard (Version 2.1)			TAS for Sustainable Rice		
Requirement	**Level of compliance**	**Point**	**Requirement**	**Level of compliance**	**Point**
-	-	-	**4.9.2 Processing of Paddy to Rice Products (Milling and Quality Improvement) and Packing**	a) There is no activity on rice milling and processing, or farmer does not produce sustainable rice product	n/a
-	-	-	Farmers, farmer groups, or business operators shall perform moisture content reduction, rice processing (de-husking, polishing, quality improvement and grading) and packing as follows: 1) the practices **shall** be in accordance with the principles on good hygiene practices or good manufacturing practices or with the requirements of good hygiene practices specified in the TAS-4403 or the relevant standards; 2) sustainable rice **shall** be treated separately from non-sustainable rice. Otherwise, the production line shall be cleaned before and after production. Packing and storage of sustainable rice products shall prevent any contamination and co-mingling with other rice (non-sustainable	b) Moisture content reduction, rice processing (de-husking, polishing, quality improvement and grading) and packing comply with the principles on good hygiene practices or good manufacturing practices or with the requirements of good hygiene practices specified in the TAS-4403 or the relevant standards. Farmers, farmer groups, or business operators maintain the integrity of sustainable rice throughout processes of production, clearly identify to prevent contamination and co-	C* ★

SRP Standard (Version 2.1)			TAS for Sustainable Rice		
Requirement	**Level of compliance**	**Point**	**Requirement**	**Level of compliance**	**Point**
			rice and off-types) with clear identification. The quantity of produced goods and remaining stored **shall** be recorded.	mingling, and record the quantity of produced goods and remaining stored.	
-	-	-		c) The production does not based on the principles on good hygiene practices or good manufacturing practices or with the requirements of good hygiene practices specified in the TAS-4403 or the relevant standards, or there is contamination and co-mingling with other rice (non-sustainable rice and off-types), or there is no record the quantity of produced goods and remaining stored.	NC
-	-	-			
-	-	-	**4.9.3 Rice Storage**	a) There is no storage	n/a
-	-	-		b) Sustainable rice (paddy, rice as raw material for	C*

SRP Standard (Version 2.1)			TAS for Sustainable Rice		
Requirement	**Level of compliance**	**Point**	**Requirement**	**Level of compliance**	**Point**
			Farmers, farmer groups, or business operators shall store sustainable rice (paddy, rice as raw material for processing and rice products) certified according to this standard separately from other non-sustainable rice with clear identification to prevent any co-mingling. Pest control in the rice storage shall be carried out with an appropriate method.	processing and rice products) certified according to this standard is separately stored from other non-sustainable rice with clear identification, and appropriate method for pest control is conducted if needed.	★
-	-	-		c) The storage of certified sustainable rice (paddy, rice as raw material for processing and rice products) do not separate from non-sustainable rice or without clear identification or there is co-mingling between sustainable rice and non-sustainable rice; and inappropriate method is conducted for pest control.	NC
-	-	-			

SRP Standard (Version 2.1)			TAS for Sustainable Rice		
Requirement	**Level of compliance**	**Point**	**Requirement**	**Level of compliance**	**Point**
-	-	-	**4.9.4 Transportation** Farmers, farmer groups, or business operators shall transport, certified paddy to rice processing plants (rice mills and rice quality improvement plants), or sustainable rice products to retailers, in a hygienic manner to prevent any co-mingling with paddy and off-typed rice from other sources throughout the supply chain.	a) There is transportation with hygienic manner to prevent any co-mingling with paddy and off-typed rice from other sources throughout the supply chain. b) Transportation practices cause co-mingling of sustainable paddy and sustainable rice with paddy and off-typed rice from other sources.	C* ★ NC
-	-	-			
-	-	-			
-	-	-	**4.9.5 Document and Record of Sustainable Rice Products**		
-	-	-	4.9.5.1 Farmers, farmer groups, or business operators shall have clear documentation and records at every step throughout the production and handling of the rice products. The documentation and records of sustainable rice include quantity of rice purchased and its source,	a) There are clear documentation and records at every step throughout the production and handling of the rice products, that include quantity of rice purchased and its source, quantity of rice products, movement, use, and	C* ★

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Requirement	**Level of compliance**	**Point**	**Requirement**	**Level of compliance**	**Point**
			quantity of rice products, movement, use, and stock inventory.	stock inventory for tracing the integrity of sustainable rice.	
-	-	-		b) None of the above, or the documentation and records incomplete so that is unable to proof the integrity of sustainable rice.	NC
-	-	-		***Note***: *The documentation or record on stock inventory may not include if there is no storage in the step process of sustainable rice production.*  	
-	-	-	4.9.5.2 Farmers, farmer groups, or business operators shall keep the documents and records, including information related to their contractors, for at least 3 years or at least 1 cycle of certification.	a) The documents and records, including important evidence and information related to their contractors are kept for at least 3 years or at least 1 cycle of certification.	C* 

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Requirement	**Level of compliance**	**Point**	**Requirement**	**Level of compliance**	**Point**
-	-	-		b) None of the above, or they are kept less than the limited time.	NC
-	-	-			
-	-	-	**4.10 Labelling and Claim**		
-	-	-	4.10.1 Labelling for consumer packages and non-retail containers shall be in accordance with Section 3 of TAS 9060, and at least with the following:	a) There is no labelling	n/a
-	-	-		b) Labelling is complied with Section 3 of TAS 9060	C*
-	-	-		c) Labelling is not complied with Section 3 of TAS 9060	NC
-	-	-	4.10.1.1 Consumer package[17/] The label on consumer packages shall have at least the following information:	a) Farmers, farmer groups, or business operators do not produce sustainable rice product in consumer package.	n/a
-	-	-	1) name of the product by specifying type of rice (such as partially milled rice, brown rice	b) Label on consumer package includes the	C*

[17/] It shall comply with the Notification of Ministry of Public Health (No. 367) B.E. 2557 (2014) and (No. 383) B.E. 2560 (2017) and their amendments as well as the Notification of the Committee on Labels No. 4 B.E. 2543 (2000) on "Packaged Rice is subject to a Labelling Controlled Product" and its amendment, and the Notification of the Committee on Labels No. 5 B.E. 2543 (2000) on: "Packaged Rice is subject to a Labelling Controlled Product (No.2)" and its amendment.

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Requirement	**Level of compliance**	**Point**	**Requirement**	**Level of compliance**	**Point**
			or milled rice) or group of rice (such as non-glutinous rice, glutinous rice, tender non-glutinous rice or colour rice) In case a specific variety is labelled, the variety name shall be declared in accordance with the relevant standards [18/]. 2) grade (if graded) 3) net weight in metric system 4) name and address of producer, packer, distributor, importer, exporter, or retailer 5) country of origin, except produced for domestic market Cultivation zone or country, region or local names may be additionally declared (if any). 6) date marking A "Best Before Date" shall be declared, while "Date of Manufacture" or "Date of Packaging" may be additionally declared.	information complying relevant criteria. c) Label on consumer package includes the information which does not comply with the relevant criteria.	NC
-	-	-			
-	-	-			

[18/] TAS 4000 Thai Agricultural Standard: "Thai Hom Mali Rice", TAS 4001 Thai Agricultural Standard: "Thai Aromatic Rice", TAS 4004 Thai Agricultural Standard: "Thai Rice", and TAS 4006 Thai Agricultural Standard: "Thai Colour Rice"

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Requirement	**Level of compliance**	**Point**	**Requirement**	**Level of compliance**	**Point**
			7) instructions for cooking		
			4.10.1.2 Non-retail containers The following information shall be declared on the label, except those specified with * mark can be provided in the accompanying documents or through other means: 1) name of the product by specifying type of rice (such as partially milled rice, brown rice or milled rice) or group of rice (such as non-glutinous rice, glutinous rice, tender non-glutinous rice or colour rice) In case a specific variety is labelled, the variety name shall be declared in accordance with the relevant standards[18]. 2) grade (if graded) * 3) net weight in metric system * 4) name and address of producer, packer, distributor, importer, exporter, or retailer 5) country of origin, except produced for domestic market* Cultivation zone or country, region or local names may be additionally declared (if any).	a) Farmers, farmer groups, or business operators do not produce sustainable rice product in non-retail containers. b) Label or accompanying document for sustainable rice product in non-retail container includes the information complying relevant criteria. c) Label or accompanying document for sustainable rice product in non-retail container includes the information which does not comply with the relevant criteria.	n/a C* NC

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Requirement	**Level of compliance**	**Point**	**Requirement**	**Level of compliance**	**Point**
			6) date marking * "Date of Manufacture" or "Date of Packaging" shall be declared.		
			4.10.2 Labelling and claim of the product as sustainable rice can be done only when such product has been cultivated and processed in accordance with the requirements of this standard, and certified by a certification body. Consequently, the label of such product can bear the name and/or code of the certification body.	a) Farmers, farmer groups, and business operators claim and label only when rice product has been cultivated and processed in accordance with the requirements of this standard and certified by a certification body, and its label includes the name and/or code of the certification body.	C* ★
				b) Farmers, farmer groups, and business operators claim and label by not yet certification or having an evidence that co-mingling of non-sustainable rice (uncertified product) happened, or label of such product excludes the name and/or code of the certification body.	NC

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Requirement	**Level of compliance**	**Point**	**Requirement**	**Level of compliance**	**Point**
				 	
			Annex A (Normative) **Checklist for Risk Assessment on Soil and Water Quality**	The Checklist is a tool that is addressed in the requirements in the Section 4.1.2, Section 4.2.1, Section 4.2.2 and Section 4.3.3	-
			Annex B (Normative) **Principles of Integrated Pest Management** B.1 Principles of Integrated Pest Management (IPM) include: 5) surveying and evaluating pest threat and damage levels regularly (scouting); 6) using economic thresholds recommended by government officials involved in pest control; 7) evaluating all available pest control methods; 8) selecting a pest control method that maximises human safety, minimises environmental impact, is economically justifiable, and prevents food safety risks for all crops.	The Principles of IPM is addressed in the requirements in the Section 4.5.1, Section 4.5.2, , Section 4.5.3, Section 4.5.4, Section 4.5.5 and Section 4.5.6	-

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Requirement	**Level of compliance**	**Point**	**Requirement**	**Level of compliance**	**Point**
			B.2 IPM combines preventive and pest control methods. Preventive pest control methods help to manage conditions to avoid pest build-up and can include resistant varieties, crop rotation, intercropping, sanitation, ecological engineering, and others. Pest control methods help to treat pest build-up that has occurred and can include mechanical control (e.g., hand weeding), biological control (e.g., biological control agents), and chemical control (e.g., synthetic pesticides).		
			B.3 This standard encourages ongoing preventive pest control actions, and punctual pest control actions in the right time when preventive methods are not effective on their own. Pesticides are used only if and when economic thresholds are exceeded and the severity of the pest is expected to cause significant damage or loss. Actions should be as targeted as possible to avoid unintended		

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			impacts. Measured actions can support cost-reduction for farmers.		
			B.4 Common preventive pest control methods and conditions for appropriate use of pesticides for six types of pests are as in Section 4.5.1 to Section 4.5.6.		
			Annex C (Informative) **Alternate Wetting and Drying (AWD) Technique**	This Annex C is informative, so it is not used for determining the compliance	-

6. List of contributors

6.1 Technical Committee on the Elaboration of Thai Agricultural Standard on Good Agricultural Practices for Sustainable Rice Production

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6.3 Contributors to the NIG document

Table 6: List of contributors to the NIG document

No.	Name	Position/Affiliation	Roles and contributions
1	Rattanawan Mungkung	Associate Professor Department of Environmental Technology and Management Director of VGREEN (Center of excellence on enVironmental strategy for GREEN business) Faculty of Environment, Kasetsart University, BKK, Thailand	The project leader / principal investigator • drafting the NIG document, especially on the comparison between ACFS sustainable rice and SRP requirements • leading the consultation meeting with key stakeholders • being the focal point to coordinate with the national chapter and the global SRP secretariate
2	Namaporn Attaviroj	Head of Animal Health Division, Office of Standard Development ACFS, Thailand	Main investigator • drafting the NIG document, especially on the background information of ACFS sustainable rice and the comparison of scoring between that of TAS for sustainable rice and SRP standard • participating in the consultation meeting with key stakeholders • giving feedback on the draft NIG document
3	Ladda Viriyangkura	Rice cultivation and standard expert GIZ Ex-rice standard expert Department of Rice, MOAC, Thailand	Main investigator • participating in the consultation meeting with key stakeholders • giving feedback on the draft NIG document
4	Sarida (Sandra) Khananusit	Project Director Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH	Main investigator • drafting the NIG document, especially on the background information of the national chapter and summary of deviations • participating in the consultation meeting with key stakeholders • giving feedback on the draft NIG document