IMPLICATIONS OF SUSTAINABLE RICE PRODUCTION STANDARDS & INITIATIVES FOR SMALL-SCALE RICE PRODUCERS

A desk review

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This desk review takes stock of the current standards and initiatives applied to sustainable rice production. It analyzes the level of rigor of standards across the following nine main themes: producer group management, farm business management, nutrient and pest management, water management, harvest and post-harvest practices, landscape management, health and safety, labor rights, and community development.

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EXECUTIVE SUMMARY

Oxfam implements a 3-year regional program in South East Asia called “Gender Transformative & Responsible Agribusiness Investments in South East Asia” (GRAISEA). Key objectives are: 1) policy development at ASEAN, its member states and Pakistan to consider responsible practices; 2) project support for inclusive agro-commercial value chains in Cambodia, Vietnam and Pakistan; and 3) corporate social responsibility policy development, including gender equality and women’s economic empowerment.

This desk review takes stock of the current standards and initiatives applied to sustainable rice production. It analyzes the level of rigor of standards across the following nine main themes: producer group management, farm business management, nutrient and pest management, water management, harvest and post-harvest practices, landscape management, health and safety, labor rights, and community development. Of the numerous criteria included in each theme, various gender and climate-specific aspects were a focus. The relevant standards reviewed are: Sustainable Rice Platform (SRP), Sustainable Agriculture Initiative (SAI) Platform, Fairtrade, Participatory Guarantee Systems (PGS) Organic, ECOCERT Organic, EU and US Organic, Global GAP, Thai GAP and the System of Rice Intensification (SRI).

The inclusiveness and effectiveness of a selection of company and development initiatives in supporting small-scale producers is also analyzed. The relevant company and development initiatives reviewed are: Better Rice Initiative Asia (BRIA), Closing Rice Yield Gaps in Asia with Reduced Environmental Footprints (CORIGAP) by IRRC, Helvetas, SEARICE, Amru, Gentraco, Olam, and Rice Partners Limited (RPL).

The review informs recommendations to the GRAISEA program and the influencing campaign on rice in Asia to strengthen the inclusiveness and effectiveness of standards and initiatives.

The smallholder, gender, and climate emphasis of standards

The variety of standards’ scopes and sustainability focuses inform their inclusiveness to smallholder producers and, in particular, women. Inclusiveness refers to the extent to which producers can participate in a standard system regardless of gender, age, farm size, capabilities and financial means. SRP, Fairtrade, Vietnam PGS Organic standards, and the Systems of Rice Intensification are specifically developed with smallholder production systems in mind. SRP and SRI are the only standards developed specifically for the rice sector. The scope of organic standards is on agricultural and environmental practices that are in line with organic principles in the use of non-chemical fertilizer and crop protection, use of by-products for soil fertility, and organic seed varieties with a prohibition on the use of genetically-modified organisms (GMO).

In terms of sustainability focus, most of the standards cover producer group (e.g. training, traceability, and governance) and farm management (e.g. management plans and record keeping). Fairtrade and GlobalGAP have a level of rigor that supports inclusiveness due, in part, to requirements on governance. Thai GAP, the only national standard in scope, focuses on pest and disease management and harvest and post-harvest practices. t is notable that organic standards hardly cover the areas of health and safety, labor conditions, and community development. SRP, SRI and 1M5R are recognized for applying the method of ‘Alternate Wetting and Drying’ (AWD).

Across most of the themes, the SRP standard most consistently covers the aspects reviewed and has high rigor on farm preparation, harvest and post-harvest practices, and water management. For standards to deliver impact in inclusive, sustainable rice production systems, their requirements must be meaningful to and feasible for smallholders. Stepwise approaches to performance like featured in Fairtade standards potentially reduce the entry barrier for smallholders and give them more time to increase performance over time.

Women’s rights are mostly covered in the area of health and safety (e.g. pesticide use by pregnant and nursing women) and, to a lesser extent, in labor rights (e.g. equal remuneration, parental leave, and sexual harassment). Fairtrade and SRP have a level of rigor that supports

inclusiveness within this scope. Despite the relevance, women's rights are hardly covered in requirements on labor rights and women's empowerment does not feature even in training.

Climate change mitigation and adaptation are not explicitly mentioned, except for SRP and SRI, but many standards cover climate-relevant practices. SRP has the highest rigor in mitigation aspects, comparatively, through harvest and post-harvest practices and land preparation (e.g. laser leveling) with a good focus on nutrient and landscape management. Regarding an emphasis on climate adaptation, standards show good coverage on soil conservation techniques and water resource efficiency. The Alternate Wetting and Drying (AWD) practice as covered by SRP, SRI and 1M5R can also support adaptation. SRP, SAI, EU Organic, PGS Organic, and ECOCERT include the selection of disease-resistant varieties and SRP even includes short-maturity varieties. Lastly, only US Organic, Thai GAP, and Fairtrade do not require crop rotation and intercropping for nutrient management.

Market uptake of standards and scalable supply chain and assurance models

Broadly speaking, the main drivers of sustainable rice demand include:

- *Quality*: Stricter quality regulations in the EU along with food safety scandals in China are pushing brands and retailers to develop more direct and transparent relationships with their suppliers.
- *Corporate reputation*: retailers and brands have made pubic sourcing commitments to source all products sustainable and have experience in other crops while others look to reduce reputational risks.
- *Market access*: sustainable production and certification is a way to access high value export markets.
- *Long-term business perspectives*: Support of sustainable rice production may lessen supply concerns over increasing demand in Asia and stabilizing productivity in rice production.

The demand for sustainable rice is expected to grow, however, it will depend on the cost of sustainable production and Asian demand for sustainable rice.

Currently, sustainable rice is far from being mainstream. Our review showed some use of Fairtrade and organic standards (e.g. ECOCERT, US Organic) and an emerging use of the SRP standard (field testing). Only SRI is reported to be widely implemented albeit in a variety of ways and without any credible verification process behind the methods. Standards are traditionally coupled with assurance models that verify compliance. Several initiatives, including SRP and the SAI Platform, do not (yet) have the assurance or supply chain systems that provide sufficient credibility to be recognized in the marketplace.

Traditional certification schemes like Fairtrade, Organic, and others may require too high of costs (e.g. third-party assurance and traceability) for smallholder-based, low-value rice production to be borne by mainstream rice markets. The Vietnam PGS Organic model of second-party assurance may reduce costs, although not the primary objective, but scalability remains an issue due to its alignment with international organic standards. The high costs of traditional schemes pose entry barriers to more unorganized and remote smallholders to access higher-value export markets like the company initiatives reviewed.

The global credibility and local relevance of standards

Supply chain-based standards face constraints to scale and deepen their impact since they have been designed as a compliance tool to meet potential market demand. The fundamental risks to this model are: 1) limited certified demand may impede scalability; 2) a certification focus of the 'lower-hanging fruit'; and 3) perverse incentives for producers to aim only to pass the audit without any intrinsic motivation to change.

Standard systems must be fit for purpose: to make farmers better farmers. As such, standards need to become more locally relevant and focus more on improvement than compliance. Taking this purpose as a starting point, standards system could develop different strategies with more

focus on facilitating knowledge exchange, technology transfer, and continuous improvement processes.

Standards systems acting as platforms

A promising trend in many crops is that standards systems partially expand or completely shift towards leading sector platforms. This contributes to inclusiveness, stability, and local relevance among other objectives. SRP counts on the largest and most diverse rice-specific membership base.[1] Despite its ambition to have impact beyond certification or supply chain projects, most of SRP's attention is drawn towards the promotion of standard implementation through supply chain projects. The potential of SRP is larger when it becomes more active in promoting (inter)national sector dialogue and policy influencing. This could, for example, result in the incorporation of certain good practices in laws and regulation, more active promotion via public extension services, or investments in other enabling conditions for producer and market uptake.

The inclusiveness of producer-support initiatives

The main strategies to support smallholder and women rice producers considered are:

- group management models: the approaches to organizing smallholders in order to deliver services and market their produce
- implementation support: the provision of technical, physical, and financial resources required to implement a standard or development initiative
- programs: a set of activities that support a company or development actor's strategic objectives, including policy advocacy, research, and landscapes, and community development
- partnerships: cooperation by public and private actors to leverage financial resources and technical expertise that have an impact on smallholder rice producers at scale

Supply chain engagement beyond the farmgate

Smallholder rice producers can be reached through bottom-up approaches through the creation of producer-based organizations, or top-down approaches, where supply chain actors, usually rice mills, enter into a contract with producers. There can also be a mix of these approaches and the role played by development actors. The company and development initiatives reviewed are insightful showing that more engagement through the supply chain is a useful way to address sustainability and inclusiveness. Where there is a lack of functional, producer-based organizations, contract farming can be a good mechanism to initially organize producers and formalize a business relation. The success of such an arrangement relies on partnering with a company with a vision and commitment for sustainability in the country of production. It is also important that the contract include terms of trade that incentivize producers to engage and improve over time. Still, there may be negative consequences for smallholders based on the disproportionate power balance between them and their buyer. Thus, the business arrangements need to respect fair principles in order to avoid the risks of exploitation. Standards, notably Fairtrade, can provide a blueprint and reference for the stakeholders involved. A third-party facilitator is also helpful to guide the emerging partnership between smallholders and the buyer.

Inclusiveness in implementation

Different actors deliver services to producers related to inputs (i.e. pesticides, fertilizers, seed varieties), training, access to credit, infrastructure and equipment. Most company initiatives support smallholders in accessing and purchasing inputs (e.g. improved seed varieties at a discount, price negotiation). In Cambodia, companies engage in seed variety development, an initiative of foreign donors. Access to such services might be needed to improve productivity

[1] Fairtrade also has a strong lobby and advocacy component, but is much less active in the rice sector and its market leverage is limited with its influence mainly in Western markets.

and quality, however, bundling that locks in producers could limit their choice or come at an unnecessary cost.

The design and delivery of trainings can also lead to more producers applying better practices. Trainings can be held exclusively for women and, in some cases, led by women trainers are an effective solution. In fact, some development initiatives mandate the inclusion of women in trainings and in ways that are suitable for the context. Youth can be engaged through technology and mechanization. The use of adult learning and demonstration plots are practical methods that help producers in gaining knowledge. In terms of delivery, good capacity building is intensive in the beginning and supportive as activities continue. While it is good that training modules consist of the latest knowledge and technology (e.g. good agricultural practices), the technological level of the country may not keep pace. Training settings and methodologies can be smartly designed to increase women's participation, reach producers with knowledge relevant to their role, and stimulate practical learning leading to changes toward improved practices.

The strategic design of programs and standards

International standards are a good reference but need to be adapted in order to be operationalized in a specific producer context. Translating standards into locally-relevant practices promises to have more impact on smallholder livelihoods and meet development actors' objectives. To be sure, there is flexibility in choosing the practices that are still in line with the standard. There are opportunities for the generic Organic, Fairtrade or SAI standards to develop tailor-made and impactful technology packages for smallholders. In any case, economic incentives should be a central feature in any program (e.g. access to market, services, and timely payment of good prices to producers).

Programs can be designed to use a combination of standards or phase into standards with higher rigor. SRI methods can be integrated into Fairtrade and organic initiatives to have more impact on sustainable rice production. National GAP standards can be a good starting point to access low-value national and international markets stepping up to the Global GAP and SRP standards (health and safety) for higher value export markets.

Company and development programs contribute to a sustainable sector when their activities address more than one sphere of engagement – the market, producer organization, services, community development (i.e. on- and off-farm), or public policy. A purely supply chain-based approach has limits. The ability of programs to reach smallholder producers relies on such a holistic, strategic design that addresses multiple spheres (e.g. market + public policy or services + public policy). Successful programs emphasize economic incentives, collaborate with the government, and provide visionary and effective facilitation. Increasingly, companies and development actors apply a gender lens. Insightful examples were shown where market-driven programs deliver services to producers, work with researchers and extension agencies to pilot farm-level technologies all the while advocating for a favorable policy environment. Programs that disseminate proven technologies (e.g. from transplanting to direct seeding) could consider activities that support the unintended consequences of implementing these technologies (i.e. less labor need).

The promise of partnership

Most of the partnerships in the rice sector are in their early stages. Such partnerships address multiple spheres of engagement to leverage the knowledge and technical and financial resources required to reach increasing numbers of smallholder rice producers in a meaningful way. Multi-stakeholder platforms are an effective mechanism to bring together key stakeholders and potential partners. While the leveraging of resources by public and private actors can enable scaling up, it is reliant on the alignment of national and international interests, objectives, and budgets. The partnerships identified in this research – except the proposed Thai NAMA partnership - do not involve a formal and active role for national governments.

More monitoring and evaluation over time

This review has been hampered by the limited information available on the effectiveness of standards and initiatives. Increasing the evidence base on practice adoption by smallholders and its outcomes is an area of opportunity for more comprehensive sustainability agendas with many potential trade-offs between different practices and objectives.

The effectiveness of initiatives and standards

Although company and development initiatives vary in duration, some results in social, environmental, and agricultural practice adoption so far show their level of effectiveness.

Seed variety selection and use

- During its first phase, CORIGAP found that best management practices along with direct seeding led to 60-67% lower seed rates in Thailand
- In implementing organic standards in Cambodia, Amru has been able to procure certified, disease-tolerant seed varieties for the producers in their supply base.

Land preparation

- The producers working with RPL in Pakistan have adopted practices like laser leveling and direct seeding required by SRP and this have led to a reduction of water use of 20%.
- BRIA reported that by changing the training approach to adult learning, the projects have, in general, improved the adoption of the good agricultural practices promoted from 20% to 60%.

Crop protection and soil fertility

- In Thailand, CORIGAP research shows a reduction in fertilizer use of 50–64% on average each season without any adverse effect on yield.

While there is limited evidence in the rice sector, there is an overwhelming evidence base in other sectors on the effectiveness of standards in getting producers to adopt improved practices (see www.standardsimpacts.org for a large collection of impact studies). Most evaluations show mixed results; the implementation of standards generally contributes to social, environmental, and agricultural benefits, but not necessarily in a consistent way or in line with expectations. Other impact studies on smallholder certification programs conclude that the impact does not so much depend on which standard is used, but more on the intensity and continuity of the capacity building, the facilitation of access to inputs and finance, and reliable and rewarding market access.

RECOMMENDATIONS

The following recommendations are made to the GRAISEA program and the influencing campaign on rice in Asia to strengthen the inclusiveness and effectiveness of standards and initiatives:

Promote standards with a smallholder, gender, and climate emphasis

With regards to the content of standards, the following recommendations can be made:

- Oxfam could advocate that standards, including SRP, go deeper on labor practices (e.g. women's rights) and extend to community development without increasing the number of mandatory requirements. Alternatively, Oxfam could develop or promote the development of gender / community-related guidance linked to the standard implementation.
- Oxfam could promote group management models that address the empowerment of smallholders and women to promote inclusiveness.
- Oxfam could develop or request that standards systems develop more guidance that clarifies the links between requirements and climate change mitigation and adaptation.

- Oxfam could advocate for performance and outcome monitoring of standard systems to increase the evidence base on the extent that standards meet their intended results. For example, SRP could make mandatory the measurement of the Performance Indicators, including those on women's empowerment.

Promote market uptake and scalable supply chain and assurance models

With regards to the scaling of standards, the following recommendations can be made:

- Launch campaigns that promote awareness and demand for sustainable rice (export and domestic).
- Advocate for credible and low-cost assurance and supply chain models therefore promoting the business case / lower entry barriers for smallholders to be included in sustainable supply chains (e.g. first and second-party or participatory verification models).
- Hold supply chain actors accountable for their commitments and the impact on producers, farming communities and the climate.

Strike a balance between global credibility and local relevance

To avoid such a futile pursuit by standards, the following recommendations could be made:

- Push standard systems to become more locally relevant with a focus on continuous improvement, knowledge and technology transfer.

Advocate that SRP strengthen its role as platform

To promote SRPs impact beyond individual supply chains, the following recommendation can be made:

- Oxfam could push SRP to become more active in creating (inter)national sector dialogue and supporting public policies, participation of government actors and development of a shared vision for each country's rice sector.

Promote inclusiveness by translating standards into locally impactful practices

To promote the inclusiveness of standards, the following recommendation can be made:

- Oxfam could always make sure their implementing partners translate standards into relevant, feasible and impactful practices.
- An option is to combine standards. For example, when promoting Fairtrade or Organic, it can be an option to use SRP or SRI as guidance for the agronomic practices.

Emphasize the quality of capacity building and women-inclusive implementation models

To promote effective and women inclusive implementation models, the following recommendations can be made:

- Oxfam could emphasize the need for high quality and inclusive capacity building approaches in their implementation programs.
- Oxfam could emphasize the need for assessments in the early phases of project design on how it will affect the rights and empowerment of women and how the project will adapt its intervention strategy accordingly.

Extend focus beyond the farm-level to inclusive and fair supply chain relationships

To promote inclusive and fair supply chain initiatives, the following recommendations can be made:

- Oxfam could only work with companies where its leadership show a clear vision and commitment for sustainability.
- Oxfam could emphasize the quality and fairness of trading relationships in supply chain initiatives (and not only focus on the rice cultivation aspects).
- In the absence of strong producer organizations, Oxfam could ensure that capable partners facilitate the trading relationships between producers and buyers in the early stages of implementation (with the intention to progressively retreat from this role).

Promote initiatives that look beyond the supply chain and create partnerships

To deepen and widen the impact, the following recommendations can be made:

- Consider prioritizing initiatives that drive action across different spheres of engagement including supply chain engagement, policy advocacy, research, landscapes, and/or community development.
- Create linkages between different actors and projects with complementary spheres of engagement (e.g. supply chain actors focussing on on-farm development, and a development organization on off-farm development)

Promote monitoring and evaluation

To create a better understanding of best practices in producer support, the following recommendation can be made:

- Oxfam could ensure sound monitoring and evaluation of their projects and share the lessons learned with a wider public.

1 INTRODUCTION

Oxfam implements a 3-year regional program in South East Asia called “Gender Transformative & Responsible Agribusiness Investments in South East Asia” (GRAISEA). The program’s objectives are:

- to promote policy development at ASEAN, its member states and Pakistan, considering responsible practices, which includes attention to gender equality and women’s economic empowerment, in agribusiness and in agribusiness investment, small scale agriculture and social enterprise.
- to support projects where small scale producers are effectively connected or engaged in agro-commercial value chains in equitable partnerships and women are recognized as central economic actors. The focus of these projects is in Cambodia, Vietnam and Pakistan.
- to promote corporate agribusiness in SE Asia and Pakistan, to adopt corporate social responsibility policies and plans that support responsible practices in the value chains for women and men small-scale producers, as well as including gender equality and women’s economic empowerment in their core business values.

Part of the program addresses knowledge gaps on sustainable and inclusive rice supply practices through complementary research. These researches will especially focus on what can be learned from other ongoing initiatives and experiences in order to improve the program implementation and advocacy.

This desk review takes stock of the current standards and initiatives applied to sustainable rice production. It analyzes the level of rigor of standards with a particular focus on gender and climate aspects. The review also analyzes the inclusiveness and effectiveness of a selection of initiatives in supporting small-scale producers. The main sources for this paper are interviews with stakeholders (see appendix for a list) and readily-available published literature.

The research questions that are answered are:

On types of standards and initiatives

- What is the history, key activities, and trends of each standard and initiative?
- What is the role of standards in each initiative?[2]

On sustainability scope of standards and initiatives

- What is the definition for economic, social and environmental sustainability in rice; How is this definition translated into principles, standards, services and tools?
- How are the key social and environmental issues addressed?
- How are gender and/or women’s economic empowerment issues addressed?
- How are climate mitigation and adaptation issues addressed?
- What are the important sustainability topics that are not covered sufficiently by standards?[3]
- What is the rigor of the assurance system (e.g. third-party certification)?[4]

Inclusiveness and effectiveness of standards systems and initiatives

- What is the inclusiveness to different stakeholders of the governance system?[5]
- What are the practical approaches to support smallholder rice producers, and in particular to women?

[2] Applicable only to development initiatives

[3] Applicable only to standards

[4] Applicable only to standards

[5] Applicable only to standards

- What are the best practices in approaches to support smallholder and women producers?
- What are the constraints to the approaches towards smallholder and women producers?
- What are the key success factors for the practical approaches to support smallholder and women producers?
- What is known about the effectiveness of the support to producers that results in improved practices being adopted?

Following the analysis, recommendations are made to the GRAISEA program and the influencing campaign on rice in Asia to strengthen the inclusiveness and effectiveness of standards and initiatives.

In parallel to this review, Aidenvironment also conducted an analysis on “Overview of Climate Change Adaptation and Mitigation Best Practices in Sustainable Rice Production relating to Small-scale Rice Producers”. The results of this review can be found in a separate paper.

2 TRENDS IN STANDARDS

The use of voluntary sustainability standards in improving production practices and social and environmental conditions is typically demand-driven. Four main drivers for the rice sector to demand sustainable rice were identified in earlier, unpublished research by UTZ, Aidenvironment and the Agricultural Research Centre for International Development (CIRAD) regarding the potential market uptake of rice produced specifically from the Sustainable Rice Platform (SRP). These drivers include:

- *Quality*: Stricter quality regulations in the EU along with food safety scandals in China are pushing brands and retailers to develop more direct and transparent relationships with their suppliers. Some companies combine their efforts to manage quality more rigorously with additional demands on other sustainability criteria.
- *Corporate reputation*: certain retailers and brands have made pubic commitments to source all products sustainable. Other companies who haven’t made public commitments look to reduce reputational risks. Although rice does not typically feature at the top of the list of priority commodities, these companies have experience in cocoa, coffee, timber or palm oil and increasing number of them have started to turn attention to rice as well.
- *Market access*: companies in producing countries (mills and exporters) are generally interested in sustainable production and certification as it may increase their market access to high value export markets. Some are also pushed by their customers (e.g. importers), who are, in turn, pushed by their customers (i.e. retail)
- *Long-term business perspectives*: Some of the larger international traders have concerns that with increasing demand in Asia and stabilizing productivity in rice production, there could be limited rice to trade in the future.

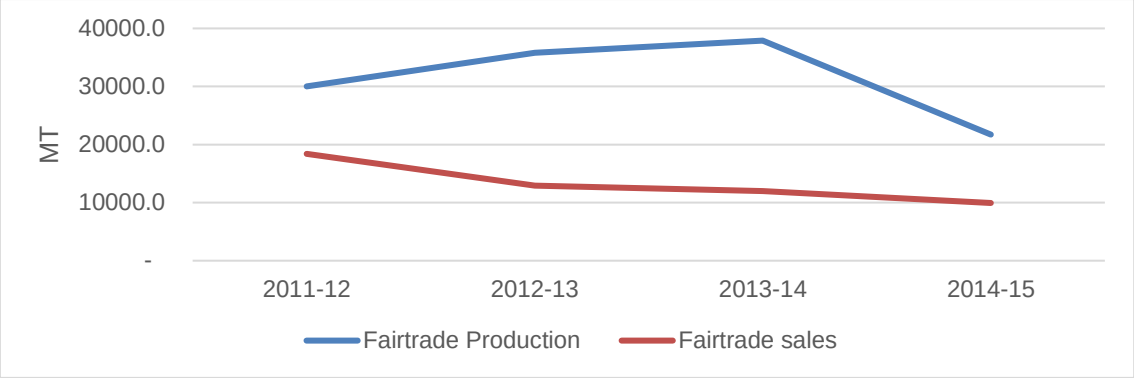
Considering these trends, it is expected that the demand for sustainable rice will grow in the near future. So far only Mars has pledged to buy all their rice in line with the SRP standard by 2020. Growth will, however, depend on the cost of sustainable rice and the extent to which Western demand is complemented by Asian demand. Indeed, many questions on both aspects remain. Sector leaders interviewed in this review do expect the Asian middle class to be willing to pay more for safe, quality and sustainable rice.

Another indication of the interest in using standards is their reach in terms of production volumes, hectares, and farmers. There is limited information available on volumes of and hectares under rice production in accordance to the standards and methods reviewed. In 2013, it was reported that approximately 240,000 producers were applying 1 Must Do, 5 Reductions

methods (1M5R) on 300,000 hectares[6]. In 2015, it was estimated that between 4 and 5 million producers use the System of Rice Intensification (SRI) methods[7]. Although not included in this review, it was noted that IBIS Rice, a conservation enterprise in Cambodia certified against the Wildlife Friendly standard, has reached 1,000 smallholder producers of organic jasmine rice while protecting wildlife in 500,000 hectares of national park.

Fairtrade is the only standard system consistently publishing global production and sales volumes across commodities. The figures show a downward trend between 2011-15. On average, 42% of the Fairtrade certified production was sold as Fairtrade certified production. In 2014-15, approximately 0,005% of the global rice production was Fairtrade certified. Earlier research by Aidenvironment and UTZ in relation to the SRP standards – supported by this assignment's interviews - indicated that the Fairtrade certification model is considered to be too expensive for mainstream Western rice markets.

Production and sales volumes of Fairtrade certified rice



Sources: Fairtrade monitoring reports 2013-16

Trends in development initiatives are addressed in relation to climate change in the separate review, "Overview of Climate Change Adaptation and Mitigation Best Practices in Sustainable Rice Production relating to Small-scale Rice Producers".

3 STANDARDS COMPARISON

Various voluntary sustainability standards and methods are applicable to rice production. The most relevant ones have been included in this review: Sustainable Rice Platform (SRP), Sustainable Agriculture Initiative (SAI) Platform, Fairtrade, Participatory Guarantee Systems (PGS) Organic, ECOCERT Organic, EU and US Organic, Global GAP, Thai GAP and the System of Rice Intensification (SRI). Additionally, some observations have been made on the 1 Must Do, 5 Reductions (1M5R) methods. The main selection criteria for the standards and methods was the applicability to the rice sector. To choose between a number of organic standards, priority was given to those that are relevant to the GRAISEA focus countries of Vietnam, Cambodia and Pakistan. Aside from other organic and national GAP standards, it is presumed that no other relevant standard, applicable to the rice sector, has been developed.

[6] http://corigap.irri.org/countries/vietnam/activities-in-vietnam/1-must-do-5-reductions

[7] https://www.theguardian.com/global-development/2013/feb/16/india-rice-farmers-revolution

DESCRIPTION OF STANDARDS

Background on standards organizations

The range of standards reviewed vary in terms of governance structures and the scope of the standard systems such crop applicability, production system type, implementation support, and assurance model. They also differ in sustainability focus whether covering social, environmental, agricultural, and/or management practices and the type of producer they are applicable to: smallholder producers and/or estate farms.

Table 1. An overview of standard systems

Standard	Governance	Scope of Standard	Target Group	Direct Support for Implementation
SRP	multi-stakeholder	cultivation, post-harvest	individual producers, producer groups	guidance
SAI Platform	membership association	cultivation	individual producers	guidance & tools
Fairtrade	multi-stakeholder	cultivation, post-harvest, trading	individual producers, producer groups	guidance, training, finance, programs
Global GAP	business	cultivation, retail	individual producers, producer groups	guidance, training
Thai GAP	government	cultivation, post-harvest	individual producers	none
EU Organic	government	cultivation	individual producers	none
US Organic	government	cultivation, post-harvest	individual producers	guidance, training, finance
PGS Organic	multi-stakeholder	cultivation, post-harvest	producer groups	guidance, training
ECOCERT Organic	business	cultivation, post-harvest	individual producers	none
SRI	network	cultivation	individual producers, producer groups	none

In general, many standards are developed at the international level. They can be voluntary (e.g. SRP, SAI, Fairtrade, Global GAP, ECOCERT, SRI) or in the form of regulated trade requirements (e.g. EU and US Organic and Thai GAP). Increasingly, national standards emerge in the country of production and are often aligned with international standards as they serve as a common reference. Standards can take several forms: standard, performance benchmark, or set of guidance[8] and are traditionally coupled with assurance models that verify compliance. They can also be broadly applicable or designed for a specific sector. In this review, only the

[8] The programs of standards organizations are not in the scope of this review.

Sustainable Rice Platform and the System of Rice Intensification are specifically developed for the rice sector.

The design of a standard informs the inclusiveness of both the standard system as well as initiatives that implement the standard. Inclusiveness is generally understood to be the extent to which producers can participate regardless of gender, age, farm size, capabilities and financial means. The rigor of a standard's requirements - the level of performance expected of producers - across social, environmental, and agricultural practices reflects what is meaningful, feasible, and impactful for the producers who implement it.

SRP, Fairtrade, Vietnam PGS Organic standards, and the Systems of Rice Intensification are specifically developed with smallholder production systems in mind. Global GAP and SAI Platform are more applicable to large-scale production systems. The integration of (producer group) management practices by a standard, such as the requirement to provide training, can also support inclusiveness. For example, Fairtrade, SRP and PGS Organic have such requirements for group management. Some standards offer a stepwise approach where performance is expected to increase over time. Fairtade has such an approach where producers have to comply with an increasing number of requirements. This could potentially reduce the entry barrier for smallholders and give them more time to increase performance over time. SRP and Global GAP also allow producers to ignore a certain percentage of non-mandatory requirements without losing the sustainability claim.

The level of rigor of a standard's requirements and its inclusiveness will be discussed in more detail in the standard comparison below.

Detailed background of the standards reviewed is presented below.

SRP

The Sustainable Rice Platform (SRP) was created in 2011 with the aim to promote resource efficiency and sustainability in the global rice sector through an alliance that links research, production, policy making, trade and consumption. Its vision talks about smallholders adopting sustainable best practices in rice production, boosting farm incomes and protecting the environment. It is a multi-stakeholder platform that is co-convened by UNEP and IRRI. It has more than 80 members from the private sector (supply chain actors and input companies), civil society, research, governments and multi-lateral organizations. In terms of type of membership, it is the most diverse and inclusive standard system in the rice sector.

SRP has developed a sustainable production standard that has 46 requirements (including post-harvest practices) and a key performance indicator framework with 12 indicators. In addition, a data collection tool has been developed although no system-wide monitoring and evaluation is in place. Currently, SRP does not operate an assurance model but exporters increasingly choose to contract a third-party to assess performance and support product claims made to their buyers. The scope of SRP's implementation support is providing guidance during in-country workshops and operating working groups focused on implementation. Field trials are occurring in nearly ten countries worldwide with most activity in Thailand, Vietnam, Cambodia, and Pakistan. As a platform, the value of SRP also lies in facilitating sector dialogue and influencing policy development of national governments towards sustainability.

SAI Platform

The Sustainable Agriculture Initiative (SAI), in effect since 2002, is a membership association led by major consumer goods and manufacturing companies across multiple sectors. SAI has developed a comprehensive checklist of social, environmental, agricultural and management practices applicable to arable crops. The SAI Platform's ambition is that the checklist will replace company-specific standards becoming the single benchmark for comparing existing standards, schemes and legislation. The checklist, called Farmer Sustainability Assessment (FSA), has 112 questions related to legal compliance, financial stability, farm management, environmental management, labor conditions, health and safety, and local communities. The FSA is available in an excel format and an online environment. Producers are scored according to a mechanism with three levels (bronze, silver, and gold).

First, second, and third-party assurance is available but third-party is required if making any product claim. The scope of SAI's implementation support is developing tools and providing guidance. It has also conducted webinars of gender issues.

The SAI Platform also has a rice working group that includes some major rice sourcing companies in the West (Mars, Unilever, Kellogg's). Moreover, there is the ambition to create rice-specific guidance to the FSA.

Fairtrade

The pioneer in promoting sustainable agricultural production, Fairtrade launched its first initiative with coffee producers in Mexico in 1988. The movement has grown to be a non-profit, multi-stakeholder association of twenty-three national chapters. The international, Fairtrade system is governed by a general assembly and board of directors. This assembly is composed of producer representation (50%) and national Fairtrade organizations (50%) and takes decisions on membership issues, approves the annual accounts, and ratifies new Board directors.

The Fairtrade standards cover production, post-harvest, and trading practices. Fairtrade standards are applicable to many different products and crop-specific annexes may exist. Fairtrade has largely worked to empower smallholder producers and intervenes in the market by way of a minimum price and a fixed sustainability premium. Only third-party assurance is allowed. Regarding implementation support, Fairtrade operates producer support and access to finance programs and provides extensive training and guidance on the standard system. Particular to the Fairtrade model is the fixed Fairtrade Premium and the Fairtrade Minimum Price that need to be paid if market prices drop below these benchmarks. Fairtrade also has its own certification body, FLO-Cert.

In 2016, Fairtrade published a gender strategy that includes specific approaches as well as technical and institutional processes. In 2017, it published a Living Income strategy that aims to raise smallholder incomes to a decent level.

Global GAP

For twenty years, Global GAP has worked with industry on sustainable production and to ensure food safety towards consumers. Global GAP is governed by a board of elected producer and retailer representatives and headed by an independent chairman. Membership is exclusive to producers and supply chain actors.

The scope of Global GAP standards is at the production, chain of custody, and retail levels. Only third-party assurance is allowed against the full Global GAP standard. Training and guidance is provided on the standard system to support implementation.

Thai GAP

Part of the trend of national standards, the Thai government, along with key stakeholders, has developed a GAP standard to ensure quality and safety for both export and domestic markets. It was not designed to be aligned with international GAP standards (i.e. Global GAP). The key focus of Thai GAP is on food safety. Only third-party assurance is allowed for the (export-oriented) standard reviewed in this analysis.

EU Organic

The European Union (EU) moved to regulate organic production and trade in 1991 establishing minimum standards for all European countries. In line with organic principles, the key sustainability focus is on soil fertility and no use of chemical inputs and genetically-modified organisms (GMO). Only third-party assurance is allowed.

US Organic

The US Department of Agriculture (USDA) issues organic production standards through the National Organic Program (NOP). The scope of the standard is on production and post-harvest. The agency develops guidance and other relevant documents (e.g. list of allowed and prohibited substances) to support implementation. Also, the agency reimburses some certified producers for some of the costs of certification. Only third-party assurance is allowed.

Vietnam PGS Organic

The Vietnam Participatory Guarantee Systems (PGS) Organic Standard was developed in 2008 through a multi-stakeholder process. It is aligned with international organic standards (i.e. IFOAM) and those of Vietnam's Ministry of Agriculture and Rural Development (MARD). The scope of the standard is on production and post-harvest. PGS Organic's assurance model is unlike other standards systems. Due to its participatory nature, second-party assurance is allowed in that an umbrella organization that consists of the same producer groups being assessed takes certification decisions. This exercise would also involve other stakeholders. Also, farmer members within the same producer group peer review each other. Training and guidance is provided on the standard system to support implementation.

ECOCERT Organic

Originally founded in 1991 as a certification body, ECOCERT has expanded since the early 2000s into standard-setting and consulting mainly in the field of organic or ecological production. It also works in social responsibility and management systems. The company provides audit services to producers seeking a range of organic certification, including the EU and US organic standards. ECOCERT's sets a standard on organic production and post-harvest practices but does not provide any implementation support unless through consulting.

SRI

Unlike the above systems, the System of Rice Intensification (SRI) is not a standard and is not used for compliance purposes. SRI is a set of principles and methods that aim to increase rice productivity through climate-smart management of crops, soil, water and nutrients. In 2010, a center was established at Cornell University to promote the widespread application of the SRI methods. The center disseminates resources such as manuals, videos, and studies. SRI methods are being applied worldwide, including South and South-Asia, the Pacific, North Africa, Sub-Saharan Africa, and Latin America and the Caribbean. While SRI is not a standard, the methods are sometimes applied in combination with a standard (e.g. organic or Fairtrade), where SRI provides more detailed guidance on the good agricultural practices than the other standard.

One Must Do, Five Reductions (1M5R)

The technical package "One Must Do, Five Reductions" was developed during the Phase IV of the IRRI's Irrigated Rice Research Consortium (IRRC) and promoted by the Agricultural Competitiveness Project (ACP) of the World Bank. This technical package, widely adopted in Vietnam, recommends the use of certified seeds as the "One Must Do". The "Five Reductions" refers to reductions in seed rate, nitrogen application, pesticide use, water use, and post-harvest losses. By applying these methods, producers can better adapt to climate change.

RIGOR OF STANDARDS' CRITERIA

Comparison of standards by theme

Our review of sustainable production standards in the rice sector analyzes the different levels of rigor (low, medium, high) that standards require in social, environmental, agricultural, and management practices. This analysis covered nine main themes and numerous related criteria, which are outlined in the table below:

Table 2. Nine main themes of sustainable production standards

Group and Farm Management	Farm Preparation	Nutrient and Pest Management
• Training on climate related issues • Climate risk assessment & management plan	• Soil salinity management • Land preparation (levelling, minimum tillage, soil	• Site-specific & efficient • Organic fertilizer selection & use • Inorganic fertilizer

• Monitoring GHG emissions • Use of crop calendar	conservation) • Seed variety selection & use (short duration and stress-tolerant)	selection & use IPM
Water Management	**Harvest and Post-harvest**	**Landscape Management**
• Rain-fed field (efficiency) • Irrigated field (efficiency, inbound quality, extraction) • Drainage	• Timing of harvest • Drying technique & time • Storage • Use of by-products (e.g. rice straw, rice husk, bran)	• Land conversion • Buffer zones • Ecosystem restoration
Health and Safety	**Labor Rights**	**Community Development**
• Pesticide handling & application • Accident prevention • Well-maintained tools & equipment • Safe drinking water	• Forced and child labor • Hazardous work • Freedom of association • Collective bargaining • Wages • Paid leave • Contracts • Healthcare • Child education	• General promotion • Community consultation • Land rights

These criteria include various gender and climate specific practices. They are discussed in later sections.

Practices explicitly mentioned in each standard were scored on a three-point system. This resulted in an average score for the overall theme (with a minimum score of 0 and a maximum of 3). The four levels of rigor are represented with color codes, from high rigor shown in dark blue to low rigor shown in light blue with practices not covered by a standard shown in white.

Table 3. Score of standards in group management and farm business management (min. 0–max.3)

	SRP	SAI	Fairtrade	Global GAP	Thai GAP	EU Organic	US Organic	PGS Organic	ECOCERT Organic	SRI
Group management	0,29	0,43	1,86	1,29	0,29	0,14	0,14	0,43	0,57	0,00
Farm business management	1,50	1,75	1,00	1,50	0,50	0,00	0,50	0,50	0,75	0,00
					Color legend		High 2-3	Medium 1-2	Low 0-1	Not covered

Most of the standards reviewed cover aspects of producer group management, particularly training and product traceability. Fairtrade and Global GAP have a higher rigor due to governance aspects like a producer group's democratic nature, leadership, (financial) transparency, and a grievance policy. Governance is not addressed by similar standards like

SRP and SAI and no organic standard refers to this theme. Most standards also cover farm business management mainly through management plans and record keeping of activities and inputs used (i.e. pesticides, fertilizers, seeds). Only SRP and GlobalGAP refer to maintaining a crop calendar, an important criterion in rice production.

As a result, Fairtrade and GlobalGAP have a level of rigor that supports inclusiveness.

Table 4. Score of standards in farm preparation and harvest and post-harvest practices (min. 0–max.3)

	SRP	SAI	Fairtrade	Global GAP	Thai GAP	EU Organic	US Organic	PGS Organic	ECOCERT Organic	SRI
Farm preparation	2,10	1,10	0,00	0,90	0,20	0,70	0,50	0,80	0,90	0,30
Harvest and post-harvest	2,57	0,00	0,00	0,29	1,71	0,43	0,86	1,14	0,71	0,43

In the area of farm preparation, the SRP standard most consistently covers the aspects of salinity management, land preparation, seed selection and with high rigor. In fact, SRP is the only standard that refers to (laser) land leveling and the use of seeds produced by farmers (i.e. quality control) and saved by farmers (i.e. maximum of three crop cycles and quality control). SAI also scores well by requiring optimal planting density and soil conservation techniques as well as good seed selection (i.e. type and source). These aspects, except optimal planting density, have good coverage by most standards. Good seed sources are part of the SRI and 1M5R methods. Notably, the Fairtrade standard is weak on farm preparation as it does not cover these important agricultural practices.

There is less attention in standards to harvest timing and drying techniques. While Thai GAP and 1M5R do cover these aspects, SRP scores much higher than others since it is a rice-specific standard. Regarding post-harvest practices, SRP, Thai GAP, PGS, and ECOCERT do cover the storage of produce (e.g. safely to maintain quality, avoiding waste). A majority of standards cover the management of by-products but to varying degrees. Along with SRP, organic standards have high rigor by not allowing residue burning and promoting composting.

Table 5. Score of standards in Water, nutrient and pest and disease management (min. 0–max.3)

	SRP	SAI	Fairtrade	Global GAP	Thai GAP	EU Organic	US Organic	PGS Organic	ECOCERT Organic	SRI
Water management	2,83	1,33	0,67	1,50	0,50	0,17	0,00	0,50	0,00	0,83
Nutrient management	2,67	2,33	0,00	1,33	0,00	1,67	0,33	2,67	2,00	1,00
Pest and disease management	3,00	2,50	1,50	1,50	1,50	2,50	1,50	2,50	2,50	0,50

Water management is a key theme in sustainable rice production. Most standards refer to efficiency in general water management, except the PGS, ECOCERT, and US organic standards. SRP scores much higher than others with consistent coverage of relevant aspects and high rigor in irrigation and drainage. For example, the SRP standard covers inbound water quality, groundwater extraction, and drainage that avoids agrochemical runoff. It is the only standard that requires a good system of canals. Although SRI and 1M5R have incomplete coverage of water management, there are recognized for applying the method of 'Alternate Wetting and Drying' (AWD). Other standards with a good focus on irrigation (e.g. inbound water quality, groundwater extraction) are SAI and Global GAP.

A majority of standards cover nutrient management, particularly through the use of natural methods like crop rotation and intercropping. Some standards like SRP and SAI as well as PGS and ECOCERT Organic focus on efficiency (i.e. timing and amount of nutrient application). SRP and SAI have the highest rigor of the standards that allow inorganic fertilizer use, focusing on fertilizer source, quality, and storage. 1M5R calls for reduced nitrogen use through an appropriate seed rate, use of slow releasing N fertilizer, and the use of a leaf color chart.

In the area of pest and disease management, all standards cover IPM with the lowest rigor found in Fairtrade, SRI, and 1M5R. In the standards that allow pesticide use, SRP and SAI require that legal products from good sources be used and that application is targeted. SAI goes further by referring to variation in the type of chemical products used to avoid pest resistance. The organic standards score high in pest and disease management due to prohibiting the use of chemical pesticides.

Table 6. Score of standards in Landscape management (excluding agrochemical use) (min. 0–max.3)

	SRP	SAI	Fairtrade	Global GAP	Thai GAP	EU Organic	US Organic	PGS Organic	ECOCERT Organic	SRI
Landscape management	0,83	1,67	1,86	1,17	0,00	0,83	0,83	1,71	0,67	0,00

The theme of landscape management was scored on the main criteria of land conversion, ecosystem restoration, and buffer zones. Agrochemical use was included in the analysis in the areas of water management, pest and disease management as well as health and safety. It is notable that there is no extensive coverage of the restoration of either forests, ecosystems, or habitats (only SAI, Global GAP, and PGS Organic to some extent). Many of the standards require that farming supports the ecosystem and SRP, SAI, and Fairtrade refer to protected areas as a measure to safeguard ecosystems and minimize land conversion. On the topic of GMO, the non-organic standards require that the producer carry out due diligence and ensure that any production is compliant with laws where produced and sold. The SRP standard excludes this topic. Thai GAP and SRI are the only standards that do not refer to any aspect of landscape management.

Table 7. Score of standards in Health and safety, labor conditions, and community development (min. 0–max.3)

	SRP	SAI	Fairtrade	Global GAP	Thai GAP	EU Organic	US Organic	PGS Organic	ECOCERT Organic	SRI
Health and safety	2,20	2,40	2,40	2,60	0,00	0,00	0,00	0,40	0,00	0,00
Labour rights and conditions	1,11	2,33	2,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
Community	0,00	0,83	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00

As mentioned above, it is evident that health and safety, labor rights, and community development are not in focus of organic standards. Health and safety is strongly covered by SRP, SAI, Fairtrade and Global GAP. These standards have high rigor with requirements on accident prevention and first aid, personal protective equipment, and safe pesticide handling. Notably, health and safety are not a focus of Thai GAP and the SRI methods. Those standards that feature producer group management and farm business management also widely cover labor rights and conditions. In this area, SAI has a high score followed by the Fairtrade requirements. SRP requirements have a medium level of rigor with less emphasis on paid overtime, paid leave, and contracts. The only standard that refers to community development is SAI with a requirement on the free, prior, and informed consent for legitimate use of land.

Comparison of standards on gender-related themes

Women's rights

Based on the analysis shown above, the main findings on the women's rights aspects of standards are presented here.

Women's rights are mostly covered in the area of health and safety and, to a lesser extent, in labor rights. Within health and safety, pesticide application is the only area within the scope of criteria where they are addressed. Of the standards reviewed, only SRP and Fairtrade prohibit pesticide application by nursing mothers. Additionally, Fairtrade requires that washing and changing facilities for those who apply pesticides be separate for men and women. Regarding hazardous work, SAI does prohibit it for pregnant women (e.g. pesticide handling) and requires medical checks for workers in a high-risk situation (e.g. pregnant women). Fairtrade extends the protection against hazardous work to nursing women.

Within standards, labor rights cover gender aspects in wage payments, social benefits (i.e. paid leave) and prohibiting (sexual) harassment. SAI is the only standard that covers equal remuneration for equal work. The Fairtrade standard requires that maternity leave be provided in accordance to national law, other regulations, or agreements with the workers. Parental leave is referred to by SAI. Maternity leave is not covered by the SRP standard. Fairtrade, SAI, and SRP are strong on prohibiting sexual harassment (or any similar disrespectful treatment) and discrimination based on gender.

As a result, Fairtrade and SRP have a level of rigor that supports inclusiveness within the scope of women's rights.

Women's empowerment

Women's empowerment is not found to be a feature of the standards reviewed, with the exception for the Fairtrade standard. At the group management level, the analysis shows that none of the standards have a specific requirement for gender awareness and for training to be inclusive. In this area, the only standard that covers empowerment in the producer organization's governance is Fairtrade. Empowerment, in general, runs strongly through this standard and it prohibits discrimination in voting rights and the right to be a candidate for leadership positions. Fairtrade also requires a group development plan where the producers decide how to spend their certification premium in the areas of production, operations, and community. Lastly, community development has an empowerment element regarding land rights and SAI refers to free, prior, and informed consent for legitimate use of land. As a result, Fairtrade has a level of rigor that supports inclusiveness within the scope of women's empowerment.

SRP's key performance indicator framework does include many aspects relevant to women's empowerment though including women's control over decisions regarding agricultural production, own labor input and household income, as well as access to information capacity building, resources for farm activities.

Comparison of standards on climate-related themes

Climate mitigation

Rice production can contribute to climate change, particularly through anaerobic decomposition in flooded rice fields (causing CH_4 emissions) and nitrogen fertilizer application (causing N_2O emissions).[9] Based on the analysis shown above, the main findings on climate mitigation-relevant aspects of standards are presented here.

[9] Carlson, K. M., Gerber, J. S., Mueller, N. D., Herrero, M., MacDonald, G. K., Brauman, K. A., … West, P. C. (2016). Greenhouse gas emissions intensity of global croplands. *Nature Climate Change*, *7*(1), 63–68. https://doi.org/10.1038/nclimate3158

At the group management level, most standards do not require awareness and training specifically on climate change. Fairtrade does require that training covers environmental aspects but this relates to the environmental and agricultural practices of the standard. At the farm management level, the SAI standard has the highest rigor with requirements on climate-relevant, environmental and agricultural risk assessments and management plans. In addition, producers must record data for the estimation of greenhouse gas emissions. In Fairtrade, producers report on measures taken to reduce greenhouse gas emissions and increase carbon sequestration.

The SRP standard is the only standard that clarifies which requirements contribute to climate change mitigation. It emphasizes, for example, Alternative Wedding and Drying as a mitigation measure, like SRI. SRP has the highest rigor, comparatively, in harvest and post-harvest practices with references to sustainable drying techniques (off farm, mechanical, or sun), no burning of residues, and the composting of rice straw for energy production. Similarly, the US Organic and PGS Organic standards do not allow the burning of residues. When analysing the standards on land preparation, SRP is strongest covering land leveling supported by laser.

Nutrient management is a key area in climate mitigation in terms of efficient use of (organic) fertilizers. Within efficient application, SRP has a strong focus on the timing of application and the amount of nutrients as well as deep placement or slow release nitrogen. Standards widely cover the use of organic manure. In addition to the organic standards, SAI, Global GAP, and SRI also refer to this practice. Regarding landscape management topics (excluding agrochemical use), SRP, SAI, and Fairtrade refer to protected areas and Fairtrade covers high conservation value (HCV) areas. Only SAI, Global GAP, and PGS Organic refer to the restoration of either forests, ecosystems, or habitats.

Climate adaptation

Climate change has direct consequences that lead to environmental stresses such as flooding, water scarcity or drought and salinity, which constrain rice yield. The main findings on how standards relate to climate adaptation are presented below.

At the group management level, there is no specific reference of climate adaptation by any standard. At the farm management level, the SAI standard's requirements on land use assessments includes soil characteristics and water availability. SRP and GIobal GAP refer to keeping a crop calendar to schedule operations and adapt to changing circumstances. Field preparation aspects that relate to adaptation are soil salinity, soil conservation, and land preparation. When analyzing the standards, good coverage was shown on soil conservation techniques. SRP has high rigor on soil salinity management, including salinity-tolerant varieties, water quantity and timing as well as monitoring and seeking technical advice. Regarding the selection of varieties, SRP, SAI, EU Organic, PGS Organic, and ECOCERT include the selection of disease-resistant varieties and SRP even includes short-maturity varieties.

Water management is a key area in climate adaptation in terms of efficient use of water resources, water quality, and drainage and a key mitigation measure in terms of reducing methane emissions. Standards widely cover water resource efficiency both in terms of rain-fed and irrigated fields. In addition to the Global GAP, Thai GAP and the PGS Organic standards, SRP and SAI also refer to the use of water from quality sources. The Alternate Wetting and Drying (AWD) practice as covered by SRP and SRI can also support adaptation.

Regarding nutrient management, most standards do require natural methods like crop rotation and intercropping when possible, except US Organic, Thai GAP, and Fairtrade.

For climate adaptation in the area of landscape management, buffer zones are widely out of scope of many standards, including Thai GAP, EU Organic, ECOCERT, and SRI. Of the standards that cover the topic, Fairtrade has the highest rigor with buffer zones of 10 meters between farms, water sources, HCV areas, and areas of high human activity.

Key differences between organic standards and others

With an overview of the standards reviewed in place, it is useful to identify the key differences between organic standards and the others that are applicable to the rice sector.

In general, organic standards focus on farm-level agricultural practices without much attention to the management of producer groups (e.g. training, traceability, governance) or farm business management beyond conversion plans to organic production. In this regard, standards that have a holistic sustainability focus (including at the farm-level like GAP standards) tend to emphasize more on robust business plans, risk assessments, record-keeping, and maintaining crop calendars in group management and farm business management.

Organic standards have a different focus in the area of land preparation and seed selection. While other standards emphasize levelling and crop establishment, organic standards focus on applying soil conservation practices and preventing soil compaction. Standards set good practice in seed variety types and sources and organic standards logically require that seed varieties are of organic origin.

Harvest practices are generally beyond the scope of organic standards since practices like harvest timing or drying techniques are relative to specific agricultural crops and organic standards are broadly applicable. The area of post-harvest management is a focus of organic standards. For example, the use of by-products is important according to organic farming principles and they prohibit residue burning and promote composting to enrich the soil quality. Other standards like SRP and, to a lesser extent, Global GAP address these post-harvest practices.

While standards of all types cover nutrient management as well as pest management, there are fundamental differences in this area. Clearly, organic standards do not allow the use of chemical fertilizers. For organic fertilizers, these standards emphasize the use of organic manure. Organic standards promote the use of 'natural' methods like crop rotation and intercropping, although these practices are also covered by the SRP, SAI, and Global GAP standards. Pest management is the other area of fundamental difference. Clearly, organic standards prohibit the use of chemical pesticides with some exceptions for homemade products. Most standards cover the principles of integrated pest management (IPM) with organic standards emphasizing that non-chemical methods be applied.

In the area of landscape management, the main difference is that organic standards prohibit the use of genetically-modified organisms (GMO), which is also prohibited by Fairtrade. Producer groups operating a local seed system are encouraged by Fairtrade to carry out quality control to ensure that contamination is avoided.

It is notable that organic standards hardly cover the areas of health and safety, labor conditions, and community development. In most standards, health and safety typically focuses on pesticide handling and application, which is out of scope for organic standards. Since organic standards do not focus on group management or farm business management, it can be understood that there is no emphasis on labor conditions and community development.

Key differences between national standards and others

National standards equally differ from others on the criteria reviewed in clear ways.

In general, GAP standards cover farm-level agricultural practices as well as harvest and post-harvest practices. These are the most important themes for export-oriented standards that ensure food safety towards consumers. Thai GAP, the only national standard in scope, focuses on pest and disease management and harvest and post-harvest practices. This national standard has the most detail on integrated pest management practices, harvest timing and drying techniques, and post-harvest storage.

Thai GAP covers the areas of farm and water management with a narrow focus. The national standard refers to clean water sources, record keeping (e.g. date and type of activities and seed varieties, pesticides, and fertilizers used) and quality seed sources.

It does not have any focus on landscape management, health and safety, labor rights, or community development.

4 APPROACHES TO PRODUCER SUPPORT

This section takes a closer look at different initiatives that support rice smallholders to adopt improved practices and promote the implementation of standards. Initiatives from development organizations, research institutes, and companies are included. The focus is on initiatives in the GRAISEA focus countries of Cambodia, Vietnam and Pakistan, but interesting examples from other countries in South and South-East Asia are also included. The insights on the inclusiveness and effectiveness of initiatives are based upon publicly available information and interviews. There were no publicly available evaluation reports.

INTRODUCTION TO THE INITIATIVES

The following company and development initiatives were reviewed to understand approaches to inclusiveness and the extent to which they effective in getting producers to adopt improved practices.

BRIA

The Better Rice Initiative Asia (BRIA) promotes sustainable rice production and rice-based nutrition by developing local market linkages and training rice producers in Indonesia, Philippines, Thailand, Vietnam. It aims to reach 28,500 producers in these countries. BRIA is a public-private partnership, managed by GIZ and co-funded by the German Development Cooperation (BMZ). It private partners include: Bayer CropScience, BASF, DSM, Yara, Olam and Deutsche Bank. It runs from 2013 to 2017.

BRIA training materials are based on national GAP standards and are now benchmarked with SRP to strengthen the labor practices.

CORIGAP

A project of the IRRC, Closing Rice Yield Gaps in Asia with Reduced Environmental Footprints (CORIGAP) works to improve productivity and sustainability of irrigated rice production in China, Myanmar, Thailand, Vietnam, Indonesia, and Sri Lanka. In the project's first phase (2013 to 2016), CORIGAP reached 125,000 producers producing rice on some 250,000 hectares.[10] By 2020, CORIGAP aims to work with 500,000 producers and achieve yield gains of 10%. It develops best management systems based on IRRC technologies that result in higher yields, increased incomes and reduced environmental footprint. IRRI, as part of IRRC, pioneered and widely promotes AWD as a key mitigation and adaptation strategy. CORIGAP integrates in-field technologies with supportive activities like research, capacity building, and networks of producers, researchers, and extension officers.

Helvetas

Swiss development actor Helvetas and Indian partner Intercooperation Social Development (ICSD) support organic and fairtrade rice production on 4,500 farms in India and Thailand since 2011.[11] The produce is sourced by Reismuehle Brunnen and Coop, a Swiss supermarket. In this initiative, producers are trained on organic and Fairtrade agricultural practices as well as SRI methods to strengthen the rice-specific agricultural practices. The project is developing biogas plants to address climate mitigation, women's empowerment, and economic development. Similarly, the initiative has also conducted its own research on greenhouse gas emissions and gender.

[10] http://news.irri.org/2017/03/corigap-phase-2-to-increase-yield-of.html

[11] https://assets.helvetas.org/downloads/coop_rice_factsheet_final.pdf

Helvetas also leads the Water and Productivity Project (WAPRO) addressing inefficient irrigation practices in smallholder rice production in India and Pakistan. Reismuehle Brunnen and Coop are involved in India due to the organic and fairtrade project and, in Pakistan, WAPRO works with Rice Partners Limited, Mars, and SRP. The project's second phase is planned for 2018 until 2021.

SEARICE

Southeast Asia Regional Initiatives for Community Empowerment (SEARICE) is a development actor that promotes and implements community-based conservation, development and sustainable use of plant genetic resources mainly in Vietnam, Thailand, and the Philippines. It is a leading proponent of the Participatory Plant Breeding (PPB) approach, which features producers' involvement in variety selection and development as an important part of national programs. The scope of SEARICE's program is on building capacity at the community level (e.g. on PPB), conducting research and disseminating knowledge and advocating for the rights of producers.

Amru

Beginning in 2011, this Cambodian company sources organic Jasmine rice (and other varieties), mills, and exports to international markets (e.g. EU, US). Annually, Amru exports some 50,000 metric tons (MT) and works with over 4,000 organic producers. The company is certified against ECOCERT and US Organic standards and recently began to implement SRP.

Gentraco

Operating for nearly four decades, this Vietnamese company sources, mills, and exports to European, American, and Asian markets. The company is certified against Global GAP and recently began to implement SRP with 500 smallholder producers.

Olam

In Asia, Olam has rice sourcing and milling operations in Thailand, Vietnam, and India. The Thai processing unit has an annual capacity of 100,000 MT and the mill in Vietnam has 150,000 MT of annual capacity. The company is part of BRIA and involved in a number of projects.

Rice Partners Limited

A subsidiary of Better Grain Limited based in London, Rice Partners Limited (RPL) works with basmati rice producers in Pakistan since 2011. The company implements SRP, a requirement of its main buyer, Mars.

INCLUSIVENESS OF INITIATIVES

Several different strategies can be employed to support smallholder rice producers including women producers. The main strategies considered in this review are:

- group management models: the approaches to organizing smallholders in order to deliver services and market their produce
- implementation support: the provision of technical, physical, and financial resources required to implement a standard or development initiative
- programs: a set of activities that support a company or development actor's strategic objectives, including policy advocacy, research, and community development
- partnerships: cooperation by public and private actors to leverage financial resources and technical expertise that have an impact on smallholder rice producers at scale

The approaches followed by companies and development actors vary in terms of scope and scale and are in accordance to the country context. Best practices, constraints, and key success factors are identified.

Group management models

Approaches

Smallholder rice producers can be reached through bottom-up approaches through the creation of producer-based organizations, or top-down approaches, where supply chain actors, usually rice mills, enter into a contract with producers. There can also be a mix of these approaches.

RPL, Amru, Gentraco – contract farming

In some contexts, traders organize producers when organization of the productive base is weak and market demand exists. This approach has been observed in situations where traders take the initiative to meet market demand. The main type of model identified is generally referred to as contract farming where a company and producer enter into an agreement on agricultural production and marketing. Broadly speaking, the programs integrate the inclusiveness strategies of group management and implementation support. RPL, Amru and Gentraco reach producers through providing a formal business relation, access to services, and access to differentiated markets (e.g. premium quality at the international level). AMRU is also experimenting with farmer cooperatives to increase income through an improved negotiating position. In the case of RPL and, to a lesser extent, Gentraco, the terms of trade in contract farming are a key component. Contractual obligations are clearly defined and communicated, and producers receive an above-market, 'lead' price and are paid within twenty-four hours of purchase. The contracting company generally requires access to high-rewarding (international) markets as condition to implement such approach.

In Pakistan, RPL applies contract farming to implement the SRP standard building the capacity of lead farmers who, in turn, share knowledge in peer groups in their community. In Cambodia, Amru Rice works with existing agricultural cooperatives to implement the ECOCERT standard using such organizations to deliver services to producers and source their rice needs. In this case, the Development Partnership and Actions (DPA) identifies and presents candidate cooperatives to Amru to work with.

Helvetas – contract farming based upon Fairtrade principle

Development actors - national, regional, and international – also promote trader-led producer organization as an effective way to include more producers in value chains. In India, Helvetas and ICSD promote contract farming and implement the Fairtrade Standard for Small Producer Organizations and have aligned the model with the Fairtrade Standard for Contract Production. Inclusiveness is further advanced since the Fairtrade standard on contract farming requires that a producer-led executive body is established and a producer-based organization is promoted. In Thailand, Helvetas and ICSD work with cooperatives to implement the Fairtrade standard. In this case, the cooperative is comprised largely of women who also hold leadership positions, which can be more often found in Thailand than in other countries in South and South-East Asia.

Helvetas and ICSD act as the convener ensuring the good governance of the initiative and that partners feel ownership over the activities and bring the necessary resources and expertise to the table. The Swiss buyers are committed to support the Fairtrade and organic implementation and source the produce. Clear and transparent terms of trade with producers are equally a key component of this project working through a (Fairtrade) contract farming model.

Best practice

Contract farming is a notable example of a way to reach smallholder producers in remote locations where an organized group (e.g. cooperative or association) may be not functional or even exist. This model is seen in the case of RPL in Pakistan and the Helvetas initiative in India. In this arrangement, the exporter creates an organizing vehicle through which to deliver services and source produce while formalizing a business relation with producers who may be used to selling to a local trader. Despite the formal agreement, contract farming allows seller and buyer to not 'deliver' in case that market conditions or quality requirements are not met. Producers are free to sell to any buyer offering a better price. Similarly, the buyer reserves the right to reject the produce if it does not meet the quality specifications agreed upon.

Still, there may be negative consequences for smallholders following the unequal power balance between them and their buyer. Many value chain projects tend to pay little attention to such relationships and ignore how trading practices are giving shape. To mitigate some of the risks related to smallholders being locked into the supply chains of their buyers, a good practice is to adhere to the Fairtade Trader standard or standard for Contract Farming. These standard stipulate rules in terms of contracting, transparency, pricing and pre-finance.

Constraints

Although contract farming does provide a vehicle to reach smallholder rice producers, the starting point is the value chain and the primary focus is on productivity and quality. Exporting companies do not necessarily have to address sustainability issues and are often required to by international partners. Also, reaching unorganized producers could prove to be costly for a company to scale up (e.g. services, staffing, monitoring), particularly in the medium-term.

Key success factors

In reaching smallholders, contract farming allows for a process of formalizing the business relation between producer and buyer. This formalization brings these supply chain actors together, providing access to services to producers to improve practices and including smallholders in supply chains. It professionalizes the engagement, particularly when based on clear and transparent terms of trade. The inclusiveness of a project based on contract farming relies on a visionary national company - typically an exporter - that values social and environmental improvements in support of their business objectives. Another success factor is to have a third party facilitating the emerging partnership between the company and producers, which allows producers to grow into their role as a business partner.

Implementation support

Approaches

An important strategy to producer inclusiveness is implementation support, which refers to the provision of technical, physical, and financial resources required to implement a standard or development initiative. Different actors can deliver services to producers related to inputs (i.e. pesticides, fertilizers, seed varieties), training, access to credit, infrastructure and equipment. The only standards that supports implementation through capacity building is Fairtrade. The approach in this area is largely shaped by the key sustainability issues, producer organization, market access as well as national government and donor involvement.

BRIA

Capacity building is a cornerstone of BRIA. The initiative conducts master trainings of extension officers in both public agencies (Philippines) and private agencies (Indonesia) as well as lead farmers (Philippines, Indonesia). Recently, the training methodology was changed to reflect adult learning. BRIA training modules - co-developed by public and private actors - covers themes from farm preparation and management, nutrient and water management, to harvest and post-harvest and, in the Philippines, include a climate-specific module. BRIA manages demonstration plots on which it also trains producers.

Since 2014, BRIA has engaged with the RIICE scheme, or “Remote Sensing-Based Information and Insurance for Crops in Emerging Economies”, operated by SDC, GIZ, IRRI, Sarmap and Allianz in Thailand. In 2016, BRIA began to consult producers in Indonesia on a crop insurance scheme being developed by the Indonesian government.

Amru

This Cambodian company integrates a number of services to cooperatives members and is involved in the provision of infrastructure and equipment. Amru facilitates access to fertilizers by assisting cooperatives implementing SRP in negotiating lower prices for collective purchase. A major focus of Amru is the propagation and distribution of improved seed varieties where seeds have been distributed at no charge to newly signed-up producers.

To implement ECOCERT, Amru works with a national NGO to train producers on organic practices. Producers can take out insurance if they produce rain-fed varieties in a scheme

supported by GIZ. Other donors like the Japan International Cooperation Agency (JICA) have supported the company's work by providing mechanical harvesters. In Amru's recent move to implement SRP, the company is piloting a warehouse receipt system with technical support from SNV, a development actor. The aim of the system is to reduce post-harvest loss since it is estimated some 30% of rice can be lost without proper storage.

Gentraco

This Vietnamese company provides a few services and equipment to the producers from which they source. Gentraco sells pesticides and seed varieties on credit with re-payment made after the harvest. To implement SRP, the company focuses producer training on pesticide and fertilizer selection, efficient use and recordkeeping as well as good agricultural practices. Recently the company began a pilot on the use of a slow release fertilizer. Women participate in relevant trainings. Gentraco also counts a women-led producer association as a supplier. Personal Protective Equipment (PPE) is provided to producers to improve health and safety. When practicing AWD, water tubes are provided to measure water availability in the field below the soil surface.

Helvetas

In this development project in India, producers are trained on organic and Fairtrade agricultural practices as well as SRI methods. The participation of women in trainings is a result of the Fairtrade standard and Helvetas' program requirements. In fact, some trainings are organized exclusively for women producers to learn about relevant practices and create an inviting setting. The producer-led executive body also undertakes training at a local university. Part of the service delivery includes access to equipment at one of service centers created.

RPL

This Pakistani company provides a few, direct services to the producers from which they source like training, technical advice as well as market and weather information via technologies like Akvo. This service provision comes at no charge since the high-quality basmati rice receives a premium on the international market. Mostly, the technical services required to implement SRP are delivered by major, international partners like IRRI on good agricultural practices and Bayer Crop Science on pest management. Direct sales of inputs (e.g. pesticides) by RPL do not occur but the company assists in price negotiation. Some trainings are organized exclusively for women on relevant practices like line sowing as well as on general labor rights. RPL follows a cascade approach to transfer knowledge to the few women landowners (e.g widows).

Best practice

Access to improved seed varieties at a discount can be an important incentive for smallholder producers. In Amru's organic projects, the payment of seeds by producers is phased in as they receive the benefits of organic practices and market access. At first, new producers receive Jasmine seeds at no charge with a commitment by Amru to purchase the harvest. In the second year, 50% of the seed cost is borne by the producer who, by the third year, is in a position to pay the full cost of these seed varieties. Other projects have occurred in seed propagation and distribution, including new varieties.

The introduction of a warehouse receipt system by Amru – open to store all the cooperative's crops - could provide other benefits to producers such as higher prices and collateral for loans. The pilot will have to show that the cooperative has the capacity to manage the system in an efficient and cost-effective way while maintaining the quality of the rice.

Some development initiatives mandate the inclusion of women in trainings in ways that are suitable for the context. In its India project, Helvetas requires exclusive trainings for women, which compels implementing partners to carry out the practice. Acting as a key facilitator in Pakistan, Helvetas also promotes that RPL organizes capacity building that focuses on women rights and relevant production practices.

In 2015, BRIA shifted to an adult learning approach to its Master training program, which aims to transfer knowledge more effectively to smallholder producers. In the Philippines, Master trainers and local extension officers learn ways to engage participants on topics they know through games and activities in the field. This practical approach allows for communicating and

'learning by doing' on the complex concepts included in the training modules. Adult learning is supported by the fact that, in the Philippines, more than one-half of trainers are women and at least 50% of participants are women.

Constraints

The level and combination of technical, physical, and financial resources vary across the examples presented. While the bundling of services like access to pesticides, fertilizers, and seed varieties might be needed to improve productivity and quality, it could limit a producer's choice or come at an unnecessary cost. While it is good to aggregate producers to negotiate, it could happen that this approach serves more the interest of the input supplier.

Building capacity of producers is indeed a worthwhile endeavor. It may be less effective if trainings are designed without consideration to cultural dynamics and delivered in a purely theoretical manner. In countries like Pakistan and Vietnam, men are the landowners and carry out most farm management and harvesting practices. Therefore, trainings on practices in land preparation may not be attended by women or the knowledge transferred to them without a direct intervention by the project and/or the standard it aims to comply with. A shift in training methodology to reflect adult learning could be slow, for the most part, to spread across regions.

The provision of different services is interrelated and informs how actors approach implementation support. It is good that training modules consist of the latest knowledge on good agricultural practices, but the technological level of the country may not keep pace. For example, training on laser leveling may not appropriate if producers cannot access the machinery required (e.g. high-performance tractors and soil movers equipped laser instruments).

Key success factors

While many of the projects are in the early stages, some key success factors can be identified. In Cambodia, the ability of rice exporters to support smallholders with seed variety development has relied on foreign donor support of national research institutes. IFC and the Australian government have promoted more private sector participation in the seed development to ensure the demands of the export market are met. For example, Australia's Department of Foreign Affairs and Trade has carried out the Cambodia Agricultural Value Chain program (CAVAC) between 2010-2015 that supports the Cambodia Agriculture Research & Development Institute (CARDI) which will, in phase II, train rice millers and exporters in seed production.

To ensure trainings are designed and delivered in an appropriate and effective way, it is important that the leaders of an initiative prioritize inclusiveness and effective practice adoption. Once given importance, training settings and methodologies can be smartly designed to increase women's participation, reach producers with knowledge relevant to their role, and stimulate practical learning leading to changes toward improved practices.

Programs

Approaches

Programs are another way to enhance producer inclusiveness. As opposed to services that support implementing good agricultural practices, programs refer to broader activities that relate to a company or development actor's strategic objectives. The range of program activities includes policy advocacy, research, and community development (i.e. on- and off-farm).

RPL- community development

Part of RPL's approach is to go beyond on-farm support to address the health of workers. The company has organized twenty 'medical camps' to provide healthcare to some 20,000 beneficiaries, many of whom are women involved in labor-intensive tasks of rice production.

Helvetas - policy advocacy, research, and community development

Helvetas development program in India is rooted in being market driven and enabling a favorable policy environment. During implementation, government extension agencies were invited to participate in research on the application of SRI methods to inform policymaking.

Helvetas' program also promotes activities that bring both on- and off-farm improvements. In India, 3,000 biogas plants are being built in rural households of Uttarakhand state. By using biogas as fuel instead of wood, greenhouse gas emissions are being reduced due to less deforestation and the application of biogas slurry in organic fields. If less wood is needed to be collected, then it reduces the burden of women who typically perform this task. The demand for biogas plants also provides jobs stimulating the local economy.

In Pakistan, Helvetas commissioned a gender study as part of the WAPRO project.

SEARICE - policy advocacy, research, and community development

The scope of SEARICE's program is on building advocacy capacity at the community level, conducting research, and disseminating knowledge and experiences of communities. It is a leading proponent of the Participatory Plant Breeding (PPB) approach, which features producers' involvement in variety selection and development as an important part of national programs. SEARICE's approach is highly inclusive since it involves marginalized members of farming communities and allows for community decision-making. In their programming, they apply the Gender Equality and Social Inclusion framework (GESI).

CORIGAP - policy advocacy and research

CORIGAP main activity is conducting adaptive research regarding on- and off-farm technologies that lead to yield increases and more efficient input use (e.g. seed, pesticide, and fertilizer), including post-harvest practices. AWD, a practice pioneered by IRRI, is widely promoted. CORIGAP also tests new varieties – both high-yielding and stress-tolerant – producers' fields via participatory varietal selection (PVS) program. To roll out improved management practices, CORIGAP has developed networks of policy advisors, researchers, extension officers as well as producer groups. Through these networks, CORIGAP is able to promote learning on these technologies, support policymaking, and build the capacity of researchers, extension officers and national and local partners.

To inform their programming, CORIGAP applied the Women's Empowerment in Agriculture Index (WEAI), the first standardized measure to capture women's empowerment in agriculture.[12]

Best practice

In its Fairtrade and organic project in India, Helvetas balances the market demand for more responsible and ecological rice with the advocacy for public policies that are more conducive for inclusiveness. The initiative counts on a national commercial partner with a commitment to sustainability. This development actor's collaboration with government extension agencies on SRI pilots of methods was successful to the extent that the state government decided to promote SRI methods across the entire state. The role Helvetas plays in shaping the strategic vision and acting as an effective broker ensures that key actors build relations, align objectives, and take ownership over the activities.

CORIGAP works with extension agencies and producer groups to pilot farm-level technologies and they apply the WEAI to better inform such technical research and support activities. This index gave CORIGAP insights into five key variables in the cases of Myanmar and Indonesia: 1) production; 2) income; 3) resources; 4) leadership; and 5) time. It showed gender equity at the household-level since men and women, although performing different tasks, share the resources from rice production. The analysis also showed a major lack of extension support for women. In CORIGAP's capacity building, they work with partners and researchers where women play leading roles and target women producers in their trainings and workshops.

More initiatives are applying a gender lens to their work. SEARICE applies GESI in their research and advocacy on behalf of producing communities. The Helvetas gender study in Pakistan showed that while the introduction of SRI production methods brings benefits, alternative income-generating activities are also needed for the women who tasks are being

[12] http://www.ifpri.org/publication/womens-empowerment-agriculture-index

replaced and already experience a low level of decision-making power. The same study suggested that cultural dynamics serve increasingly less as barriers.

Another best practice can be found in the Helvetas program. They address inclusiveness not only on the farm and within the value chain but also through a focus on off-farm activities that women currently carry out and potentially in the future. The introduction of biogas plants in Pakistan at the household-level has opened up time for women - normally be spent collecting firewood - to pursue other activities.

Constraints

A purely market-driven program may encounter problems with covering costs if producers who receive services do not have to meet certain conditions on training attendance, practice adoption, product delivery and quality. If the market price drops, then the company could reduce its activities to minimize operating at a loss. Also, despite being effective in getting producers to adopt improved agricultural practices - leading to higher productivity and quality – they can be still limited by the stagnant commodity prices. Among initiatives reviewed, the supply chain-driven initiatives of AMRU, RPL and Gentraco give less attention to community development, research and policy advocacy than the donor / development actor-led initiatives.

Initiatives that do not have a market access purpose or are based on a single focus may be limited in their ability to improve producers' livelihoods. While such an approach may empower smallholder (women) producers, improve community conditions, and promote research, they may not embed the results in favorable market relationships, often a condition for sustaining certain practices.

Programs that feature the dissemination of technologies could consider support activities that address the unintended consequences of implementing these technologies. In a shift from transplanting to direct seeding, women workers will need alternatives to earn income. Such programs could include re-training on other field tasks that could be performed by women. This holds true for those programs promoting mechanization that will also remove the need for manual labor carried out by women. All-in-all, research and awareness raising is lacking on women's underrecognized, informal role in the value chain.

Key success factors

The ability of programs to reach smallholder producers relies on holistic, strategic design that addresses multiple spheres of engagement (e.g. market + public policy or services + public policy).

Another key success factor of the approaches identified is the ability of the company or development actor to create local ownership. While the vision and requirements can come from outside the national production context, the national partner is independent, sees the benefits, and advances the initiative.

Access to finance is being increasingly facilitated by the financial sector as it is realizing that producers applying sustainable practices are less risky borrowers. The financial sector may offer preferential rates to such producers on credit and insurance premiums.

Lastly, economic incentives should be a central feature in programs (i.e. timely payment of above-market prices to producers).

Partnerships

The final, key strategy to producer inclusiveness is partnership, which lies at the heart of any initiative's ability to scale. Smallholder rice producers are facing great challenges: lack of knowledge of improved agricultural and management practices, lack of access to improved inputs, limited market access, low prices, and a changing production context due to threats like climate change. Therefore, it is important that public and private actors leverage the financial resources and technical expertise to reach increasing numbers of smallholder rice producers in a meaningful way.

Examples

Some of the current partnerships are market-based and focus on implementing standards. In Cambodia, Amru's pilot of a warehouse receipt system is part of a three-year partnership with IFC to implement the SRP standard among 2,000 smallholder producers. Each actor contributes fifty percent of the project's budget of approximately USD $200,000. The partnership is part of a broader IFC project with the World Bank that supports the competitiveness of local exporters, value addition in key exports, and an enabling policy environment.

In Pakistan, RPL's program to deliver services and provide market access underpinned by a partnership with Mars, IRRI, and Bayer. RPL brings to the table a strong network of producers in the Punjab province of Pakistan. The program counts on the technical expertise of IRRI and Bayer's technical and financial support. The demand for high-quality basmati rice produced under SRP standards comes from Mars who sells brands like Uncle Ben's.

Other partnerships may contain a market component but focus on a single, major sustainability issue. As of September 2017, BRIA and the Thai Rice Department along with Olam and GIZ are proposing a series of projects to the NAMA facility centered on climate-related practices: 1) AWD; 2) land leveling (i.e. equal water distribution); 3) efficient use of fertilizers; and 4) enhancing rice straw utilization.

Still other partnerships were identified that do not contain a market component and address issues and approaches. In 2016, BRIA and IRRI signed a Memorandum of Understanding (MoU) to cooperate in five areas: 1) Information and Communication Technology (ICT); 2) Farm mechanization; 3) Climate-smart agriculture; 4) Joint proposal development; and 5) Public-private partnerships.

Challenges

While the leveraging of financial and technical resources by public and private actors can enable scaling up, it is reliant on the alignment of national and international interests, objectives, and budgets. This alignment may prove difficult due to politics and power dynamics. When a partnership has been launched, it can be constrained by ineffective coordination when implementing its activities, which has been observed in organic projects in Cambodia.

The partnerships identified in this research – except the proposed Thai NAMA partnership - do not involve a formal and active role for national governments. Currently, government contributes to individual (development) projects while asserting their agenda. Robust, high-level partnerships centered on collaboration could open the door to reach more smallholder producers.

EFFECTIVENESS OF INITIATIVES AND STANDARDS

Although company and development initiatives vary in duration, some results in social, environmental, and agricultural practice adoption so far show their level of effectiveness. Many of the results shared below derive from the interviews with key informants. None of the projects had any monitoring or evaluation reports to share (BRIA and Helvetas were undertaking program evaluations during the desk research).

Results

Seed variety selection and use

- As part of BRIA, Olam is implementing the SRP standard in Thailand. The initial pilot found that producers were able to select improved seed varieties due to the intervention.

- During its first phase, CORIGAP found that best management practices along with direct seeding led to 60-67% lower seed rates in Thailand.[13] Seed rate refers to the yield per hectare as a function of the number of seeds in a defined area but also relates to other factors like seed quality and planting density.
- CORIGAP also reported that initial results from SRP implementation in Vietnam show slightly lower seed rates due to the training that producers received.
- In implementing organic standards in Cambodia, Amru has been able to procure certified, disease-tolerant seed varieties for the producers in their supply base.
- A study comparing organic and conventional rice production in the Philippines showed less performing seeds rates (23% lower) in organic production but less impact on net income due to the higher input costs and lower price for conventional rice.[14]

Land preparation

- The producers working with RPL in Pakistan have adopted practices like laser leveling and direct seeding required by SRP and this have led to a reduction of water use of 20%.
- In Helvetas' India project, the adoption of SRI practices like the early transplanting of single seedlings with less density has led to stronger plants with more stems. Pilots show that the SRI practices have contributed to an increase of at least 20% in yield for producers.
- A 2013 study on SRI in India also showed increased yield (27%) compared to conventional practices. Despite the more labor that the methods require, SRI farms were found to be more profitable due to the productivity gains.[15]
- BRIA reported that by changing the training approach to adult learning, the projects have, in general, improved the adoption of the good agricultural practices promoted from 20% to 60%.

Crop protection and soil fertility

- Training on the best management practices that CORIGAP promotes resulted in reduced pesticide and fertilizer use (i.e. less product applied and labor) in Vietnam, Indonesia, Thailand, and China, which saved producers on costs. In Thailand, their research shows a reduction in fertilizer use of 50–64% on average each season without any adverse effect on yield.[16]

Water management

- The promotion of efficient water use In India by Helvetas has resulted in a reduction of the water footprint by 30%.

Harvest and post-harvest practices

- Improved production practices along with post-harvest practices have allowed RPL to gradually raise the quality of the basmati rice destined for the European market. By 2014, Mars indicates that only 8% of produce did not meet the quality requirements.

[13] Alexander M. Stuart, Anny Ruth P. Pame, Duangporn Vithoonjit, Ladda Viriyangkura, Julmanee Pithuncharurnlap, Nisa Meesang, Prarthana Suksiri, Grant R. Singleton, Rubenito M. Lampayan (2017), The application of best management practices increases the profitability and sustainability of rice farming in the central plains of Thailand, CORIGAP

[14] Ronajoy Rubinos, Ana Theresa Jalipa and Purisima Bayacag, (2007), Comparative economic study of organic and conventional rice farming in Magsaysay, Davao del Sur, School of Applied Economics, University of Southeastern Philippines

[15] A.R. Durga, D. Suresh Kumar (2013), Economic Analysis of the System of Rice Intensification: Evidence from Southern India, Bangladesh Development Studies Vol. XXXVI, March 2013, No. 1

[16] Alexander M. Stuart, Anny Ruth P. Pame, Duangporn Vithoonjit, Ladda Viriyangkura, Julmanee Pithuncharurnlap, Nisa Meesang, Prarthana Suksiri, Grant R. Singleton, Rubenito M. Lampayan (2017), The application of best management practices increases the profitability and sustainability of rice farming in the central plains of Thailand, CORIGAP

Challenges

During the interviews, key respondents shared some of the challenges that the initiatives faced in the adoption of improved practices.

Soil fertility

In research it commissioned in India, Helvetas found that the adoption of organic practices (e.g. green manuring) outperformed SRI methods, particularly in sandy soils, in terms of lowering the environmental footprint. Sandy soils require more water due to its high percolation rate and, when using AWD, variability in rainfall patterns leads to unpredictable water availability. A shortage of water at the right time affects yield potential and prompts higher use of inorganic inputs.

Labor

Initiatives that promote SRI's labor-intensive transplanting practice are faced with different challenges. In Thailand, the availability of labor is low and direct seeding machines, while prevalent, are not ubiquitous. In Pakistan where labor is available, the introduction of direct seeding adversely affects these laborers if not re-trained on other relevant, appropriate tasks.

Soil fertility and labor

A 2016 study on organic farming in Cambodia showed that organic agricultural practices (e.g. use of organic fertilizer) adopted by smallholders led to higher incomes. However, when implemented on larger farms, producers were unable to use efficiently inputs (i.e. labor, fertilizer) due to limited skills and knowledge.[17]

While there is limited evidence in the rice sector, there is an overwhelming evidence base in other sectors on the effectiveness of standards in getting producers to adopt improved practices (see www.standardsimpacts.org for a large collection of impact studies). Most evaluations show mixed results; the implementation of standards generally contributes to social, environmental, and agricultural benefits, but not necessarily in a consistent way or in line with expectations. A recent systematic review of impact evaluations had the following main conclusions: *"There is not enough evidence on the effects of CS (certification schemes) on a range of intermediate and final socio-economic outcomes for agricultural producers and wage workers. Quantitative results are mixed and generally inconclusive, despite positive effects on prices and incomes. Workers' wages do not seem to benefit from the presence of CS. Context matters substantially for the causal chain between interventions of certification schemes and the wellbeing of producers and workers.*"[18] In addition to the importance of context, other impact studies on smallholder certification programs conclude that the impact does not so much depend on which standard is used, but more on how one engages with smallholders and whether the conditions for improvement are created. Key success factors are the intensity and continuity of the capacity building, the facilitation of access to inputs and finance, and reliable and rewarding market access.

[17] Rada Khoy, Teruaki Nanseki, Yosuke Chomei, (2016), Profit Efficiency of Rice Farmers in Cambodia: The Differences between Organic and Conventional Farming, Journal of Sustainable Development; Vol. 9, No. 6

[18] Oya, C, Schaefer, F, Skalidou, D, McCosker, C and Langer, L, 2017. *Effects of certification schemes for agricultural production on socio-economic outcomes in low- and middle-income countries: A systematic review*. 3ie Systematic Review 34. London: International Initiative for Impact Evaluation (3ie).

5 CONCLUSIONS AND RECOMMENDATIONS

Based on the above analysis, a set of conclusions and recommendations can be made regarding the rice-applicable sustainability standards and development and company initiatives.

ON STANDARDS

Promote standards with a smallholder, gender and climate emphasis

Standards serve an important function in defining and assessing sustainability in rice production. As it has been presented, standards vary in terms of their scope and sustainability focus, which informs their inclusiveness to smallholder producers and, in particular, women. Some cover sustainable production in a holistic manner - social, environmental, and agricultural practices – while others are focused on a single area of importance like good agricultural practices or organic farming. Both focuses have been observed in standards specifically developed for the rice sector (i.e. SRP and SRI).

Within standards that widely cover sustainable production, the level of rigor varies and some themes remain excluded. For example, community development is missing, for the most part, from the standards reviewed. Although somewhat covered by certain practices, climate change mitigation and adaptation are not explicitly mentioned, except for SRP and SRI. Still most standards include climate-relevant requirements.

The level of rigor facilitates a standard's applicability to smallholders and attention to women's role in production. Despite being highly relevant in some producing countries, women's rights are hardly covered in requirements on labor rights and women's empowerment does not feature even in training. Group management requirements that promote inclusiveness by organizing, empowering, and representing smallholders are largely absent, except for Fairtrade.

For standards to deliver impact in inclusiveness, sustainable rice production systems, their requirements must be meaningful to and feasible for smallholders. They must also be dynamic and respond to lessons learned in implementation and changing needs of smallholder producers. Therefore, standards can be revised at the international level, localized to a specific country context, and strengthened based on the experience of users, both companies and development actors.

With regards to the content of standards, the following recommendations can be made:

- Oxfam could advocate standards, including SRP improve its standard on social-related issues. The standard could go deeper on labor practices (e.g. women's rights) and extend to community development. The role of women in production could be recognized in training and if a standard requires a risk assessment, this could extend to the role of women and community impacts. However, it is important to take into account that increasing the number of mandatory requirements may raise barriers for smallholders to implement them. As an alternative strategy, Oxfam could also develop or promote the development of gender / community-related guidance linked to the standard implementation.
- As a strategy to promote inclusiveness within the standards, Oxfam could promote group management models that address the empowerment of smallholders and women.
- To make standards more applicable, Oxfam could promote standard implementation in different contexts and ensure that the lessons learned are included in the next revisions of standards.
- Oxfam could develop or request that standards systems develop more guidance that clarifies the links between requirements and climate change mitigation and adaptation as well as other impacts (e.g. farm profitability, health and safety, landscape management).

- Oxfam could advocate for performance and outcome monitoring of standard systems to increase the evidence base on the extent that standards meet their intended results or still fall short. Regarding SRP, it could require that measuring the Performance Indicators, including those on women's empowerment, is mandatory for any actor wishing to make a sustainability claim on its product.

Promote market uptake and scalable supply chain and assurance models

The market determines the value of different standards by the impact they deliver and their recognition in the marketplace. To date, sustainable rice is far from being mainstream. In fact, figures on sustainable rice production and sales are scarce. Except from Fairtrade, no other initiatives report on volumes. Our review showed some use of Fairtrade and organic standards (e.g. ECOCERT, US Organic) and an emerging use of the SRP standard (field testing). Only SRI is reported to be widely implemented albeit in a variety of ways and without any credible verification process behind the methods.

Several initiatives, including SRP and the SAI Platform, do not have the assurance or supply chain systems that provide sufficient credibility to be recognized in the marketplace. The question remains whether the design and associated costs of traditional certification schemes like Fairtrade and Organic but also other non-rice specific schemes such as Rainforest Alliance, UTZ and the Roundtable for Sustainable Palm Oil (RSPO) are suitable for mainstream rice markets. The costs of third-party assurance and traceability may simply be too expensive in a smallholder context and a low-value crop like rice. The high costs may pose severe entry barriers to the more unorganized and remote smallholders to participate in such systems. It also reduces the business case for supply chain actors to engage with these producers on sustainability. The supply chain costs depend on the premium model chosen by the standard systems (e.g. no premium, a fixed premium, flexible premium, negotiated premium or free to choose).

The scalability of company initiatives to lower-value export and domestic markets is a concern considering that the company projects included in this review focused on accessing higher-value export markets.

With regards to the scaling of standards, the following recommendations can be made:

- Launch campaigns that promote awareness and demand for sustainable rice (export and domestic).
- Advocate for credible and low-cost assurance and supply chain models therefore promoting the business case / lower entry barriers for smallholders to be included in sustainable supply chains (e.g. first and second-party or participatory verification models).
- Hold supply chain actors accountable for their commitments and the impact on producers, farming communities and the climate.

Strike a balance between global credibility and local relevance

Although supply chain-based standards can be a powerful tool for change, they generally face constraints to scale and deepen their impact. Many standards systems are rooted in certification business models and have been designed as a compliance tool to meet potential market demand. As a consequence, standard systems dedicate a lot of energy ensuring company members can buy certified products. There are, however, fundamental risks to this model. First of all, the demand for certified products may remain limited impeding scalability (this is the case in the majority of agricultural, forestry and aquaculture standards). Secondly, this may result in a certification focus of the lower-hanging fruit (i.e. the better organized, better performing and less remote producers). Thirdly, the compliance focus may create perverse incentives for producers to carry out the activities required to pass the audit and satisfy its customers, but without intrinsic motivation to change.[19]

[19] Molenaar, J.W., Gorter, J., Heilbron, L., Simons, L., Vorley, B., Blackmore, E.,. Dallinger, J. 2015. Sustainable Sector Transformation: How to drive sustainability performance in smallholder-dominated agricultural sectors? Commissioned by IFC

Based upon Aidenvironment's extensive experience in the design and evaluation of standards, it is needed that standard systems become more locally relevant. Local relevance refers to the main purpose and use of standards: to make farmers better farmers. Producers, particularly smallholders, should be intrinsically motivated and understand the benefits of becoming more professional and more sustainable regardless of any potential market demand. Taking this purpose as a starting point, standards system will develop strategies that are different than those focused on global credibility, compliance, and certified supply chains. It would imply much more focus on facilitating knowledge exchange, technology transfer, and continuous improvement processes.

To avoid such a futile pursuit by standards, the following recommendations could be made:

- Push standard systems to become more locally relevant with a focus on continuous improvement, knowledge and technology transfer

Advocate that SRP strengthen its role as platform

Of all the standards discussed, the SRP is the one with the largest and most diverse rice-specific membership base. It also has a clear ambition to have impact beyond certification or supply chain projects.[20] However, it seems that most of SRP's attention is drawn towards the promotion of standard implementation through supply chain projects. The potential of SRP to impact millions of smallholders is larger when it becomes more active in promoting (inter)national sector dialogue and policy influencing. This could, for example, result in the incorporation of certain good practices in laws and regulation, more active promotion via public extension services, or investments in other enabling conditions for producer and market uptake.

To promote SRPs impact beyond individual supply chains, the following recommendation can be made:

- Oxfam could push SRP to become more active in creating (inter)national sector dialogue and supporting public policies, participation of government actors and development of a shared vision for each country's rice sector.

ON DEVELOPMENT AND SUPPLY CHAIN INITIATIVES

Promote inclusiveness by translating standards into locally impactful practices

Most standards reviewed in this analysis are global standards. In order to be implemented in a specific producer context, standards need to be translated and operationalized. Usually there is a quite some flexibility in choosing the practices that are still in line with the standard. While this may be less relevant for the rice specific SRP and SRI, it is highly relevant for the generic Organic, Fairtrade or SAI standards. These standards offer many opportunities to develop tailor-made and impactful packages for smallholders.

Due to the variation in scope and rigor of standards, some interesting combinations of using standards were noted. National GAP standards can be a good starting point to access national and international markets. As smallholders improve their performance, they can step to Global GAP or can be supported on SRP to address health and safety and labor practices. In other crops, Fairtrade and organic projects are often observed. Helvetas integrates SRI methods into initiatives based on Fairtrade and organic to have more impact on sustainable rice production. The same could be done with SRP methods.

To promote the inclusiveness of standards, the following recommendation can be made:

[20] Fairtrade also has a strong lobby and advocacy component, but is much less active in the rice sector and its market leverage is limited with its influence mainly in Western markets.

- Oxfam could always make sure their implementing partners translate standards into relevant, feasible and impactful practices.
- An option is to combine standards. For example, when promoting Fairtrade or Organic, it can be an option to use SRP or SRI as guidance for the agronomic practices.

Emphasize the quality of capacity building and women-inclusive implementation models

The quality of capacity building activities is an important variable in whether standard implementation will result in the intended effects. Good capacity building is intensive in the beginning and supportive as activities continue. The inclusion of women and the most vulnerable smallholder producers can be strengthened by the explicit demands of the partners participating in the initiative. Trainings held exclusively for women and, in some cases, led by women trainers are an effective solution. The design of trainings, both setting and methodology, can also lead to more producers applying better practices. Knowledge can be shared through more hands-on, field-based exercises and be presented in way conducive for adult learning. Demonstration plots – the application of new technologies or varieties to local conditions - help producers in understanding their benefits since they are directly observable. Youth can be engaged through technology and mechanization. For the next generation, incentives are important way to show rice production as a viable livelihood.

To promote effective and women inclusive implementation models, the following recommendations can be made:

- Oxfam could emphasize the need for high quality and inclusive capacity building approaches in their implementation programs.
- Oxfam could emphasize the need for assessments in the early phases of project design on how it will affect the rights and empowerment of women and how the project will adapt its intervention strategy accordingly.

Extend focus beyond the farm-level to inclusive and fair supply chain relationships

The company and development initiatives reviewed offer insights into effective ways to reach smallholder producers and the role that standards can play. More engagement through the supply chain is a useful way to address sustainability and inclusiveness. Where there is a lack of functional, producer-based organizations, contract farming can be a good mechanism to initially organize producers and formalize a business relation. The success of such an arrangement relies on partnering with a company with a vision and commitment for sustainability in the country of production. It is also important that the contract include terms of trade that incentivize producers to engage and improve over time. Furthermore, the business arrangements need to respect fair principles in order to avoid the risks of exploitation to producers by their buyers. Standards, notably Fairtrade, can provide a blueprint and reference for the stakeholders involved.

To promote inclusive and fair supply chain initiatives, the following recommendations can be made:

- Oxfam could only work with companies where its leadership show a clear vision and commitment for sustainability.
- Oxfam could emphasize the quality and fairness of trading relationships in supply chain initiatives (and not only focus on the rice cultivation aspects).
- In the absence of strong producer organizations, Oxfam could ensure that capable partners facilitate the trading relationships between producers and buyers in the early stages of implementation (with the intention to progressively retreat from this role).

Promote initiatives that look beyond the supply chain and create partnerships

Through the varied approaches to reach smallholders, company and development programs contribute to a sustainable sector when their activities address more than one sphere of engagement – the market, producer organization, services, community development, landscapes, and public policy. The programs can be more effective in improved practice adoption and producer empowerment tend to emphasize economic incentives like increased productivity, access to markets, access to services, and the timely payment of above-market prices. And when projects promote access to services, it is more sustainable when service provision is promoted base upon viable delivery models, rather than donor-dependent ones. Policy advocacy and collaboration with the government allows programs to deepen their impact.

Development initiatives thrive by combining multiple spheres of engagement with visionary and effective facilitation. A purely value chain-based approach has limits.

The scaling of impacts or creating a more comprehensive impact can also be promoted through partnerships. Most of the identified partnerships in the rice sector are in their early stages. It is clear that partnerships across the spheres of the market, productive base, services, and public policy are needed to leverage the knowledge and technical and financial resources to contribute to a sustainable rice sector. Multi-stakeholder platforms bring key actors together and offer an inclusive path towards transforming a sector.

To deepen and widen the impact, the following recommendations can be made:

- Consider prioritizing initiatives that drive action across different spheres of engagement including supply chain engagement, policy advocacy, research, and/or community development.
- Create linkages between different actors and projects with complementary spheres of engagement (e.g. supply chain actors focussing on on-farm development, and a development organization on off-farm development)

Promote monitoring and evaluation

As with the standards initiatives, there is very limited evidence available on the results of development initiatives. This is an area of opportunity since effective practice adoption by smallholders and the outcomes and impacts of these practices remains uncharted territory. This is particularly the case related to more comprehensive sustainability agendas with many potential trade-offs between different practices and objectives.

To create a better understanding of best practices in producer support, the following recommendation can be made:

- Oxfam could ensure sound monitoring and evaluation of their projects and share the lessons learned with a wider public.

6 APPENDIX: LIST OF INTERVIEWEES

Organization	Contact person	Justification
Development sector		
1. GIZ BRIA	Astari Widya Dharma, Regional Project Coordinator	SRP, Thai GAP and climate change activities in several countries
2. Helvetas	Frank Eyhorn, Senior Advisor Sustainable Agriculture	Fairtrade in Pakistan SRP rice in India and Pakistan Upcoming CSA rice in Myanmar
3. SEARICE	Nori Ignacio, Executive Director	Regional NGO focuses on rice and smallholder farmers, farmer-based seed program with activities in Vietnam and other countries.
Private sector		
4. Olam	Paul Nicolson, Head of Research	SRP's Steering Committee member, regional and global rice trade. SRP rice in Africa
5. Amru Rice	Saran Song, CEO	Cambodia (Organic - ECOCERT); SRP rice
6. Gentraco	Luu Lan, Deputy DG	SRP rice in Vietnam, amongst top ten Vietnam rice traders; supplier to Mars
7. Rice Partners	Zafar Iqbal, WAPRO project	SRP rice in Pakistan; supplies rice to

Limited	manager	Mars
International institutions		
8. PIRCCA project	Val Pede	Climate change
9. SRP secretariat	Wyn Ellis	Leading rice standard and platform
10. CCAFS	Ole Sander	Climate change
11. IRRI - Corigap	Grant Singleton, Alex Stuart	SRP, national GAP and climate change-related activities in several countries
12. GROW Asia	We have not been able to make contact	Indonesian MSI with rice and climate working group GROW Asia – WEF initiative; regional cover.
13. Value Chain	Matty Demont	Value chain specialist

Oxfam Research Reports

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