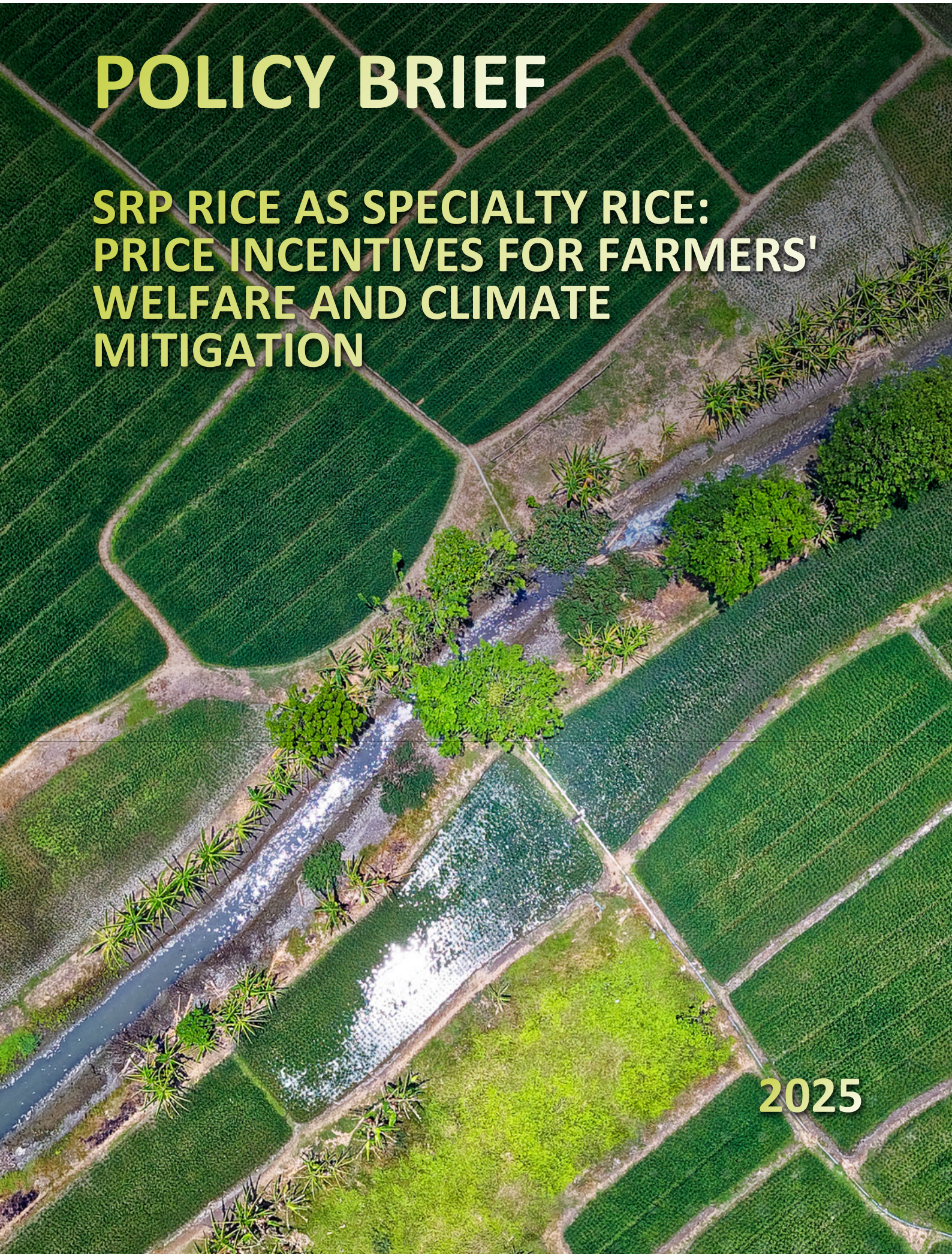

POLICY BRIEF

SRP RICE AS SPECIALTY RICE: PRICE INCENTIVES FOR FARMERS' WELFARE AND CLIMATE MITIGATION

2025

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I. INTRODUCTION

Low-Carbon Sustainable Rice and the Urgency of Special Rice Classification. Indonesia's rice farming sector plays a dual role as a primary pillar in food and nutrition security and a major source of employment. At the same time, it is a significant contributor to rising global carbon emissions. Greenhouse gas (GHG) emissions from conventional rice cultivation, particularly methane and nitrous oxide, as well as indirect emissions from the use of chemical fertilizers, exert substantial environmental pressure and hinder the achievement of sustainable agricultural development.

Mitigation efforts to address climate change while ensuring the sustainable fulfilment of food needs can be achieved through the adoption of Low Carbon Rice Farming (LCRF) practices.

LCRF aims to attain high crop yields while minimizing greenhouse gas emissions and reducing agricultural resource consumption. One proven framework for mitigating greenhouse gas emissions while accounting for social, economic, and environmental impacts is the Sustainable Rice Platform (SRP). Given the distinctive and complex attributes of SRP rice, which substantially differentiate it from medium and premium rice, SRP rice is appropriately classified as Specialty Rice. Based on the Regulation of the Indonesian National Food Agency No. 2 of 2023, the rules regarding special rice cover several types of rice, including glutinous rice, red rice, black rice, local rice varieties, fortified rice, biofortified rice, rice with nutritional claims (enriched), organic rice, geographically indicated rice, rice with glycemic index claims, as well as certain rice that cannot be produced domestically. Recently, the government has been developing an additional classification of special rice—namely, rice produced using specific techniques in accordance with advancements in science and technology. The introduction of this additional special rice classification is considered to potentially allow SRP rice to be included in it. Compared to organic rice, SRP rice offers a broader perspective beyond just organic cultivation, which emphasizes natural methods without synthetic chemicals. SRP rice encompasses and considers sustainability aspects across environmental, economic, social, technological, institutional, and policy dimensions.

Advantages and Contributions of Low-Carbon Rice. Low-carbon rice (LCR) produced in accordance with the Sustainable Rice Platform (SRP) standards not only reduces greenhouse gas (GHG) emissions by approximately 50–60 percent (based on lessons learned from SRP implementation in Viet Nam) compared to conventional rice cultivation practices, but also delivers the following key advantages:

1. Health and Quality: The product is safer to consume due to reduced chemical inputs, there by contributing to healthier food.
2. Farmers' Economic Efficiency: The adoption of environmentally friendly practices, such as water-saving techniques and balanced fertilization, reduces excessive chemical inputs, lowering production costs and improving perceived cost efficiency in SRP-based rice cultivation.
3. Alignment with National Development Priorities: These practices align with Indonesia's low-carbon agricultural development agenda, as outlined in the 2025–2045 National Long-Term Development Plan (RPJPN) and the National Priority Activities on the Development of Sustainable Agricultural Production Systems under the 2025–2029 National Medium-Term Development Plan (RPJMN).

What incentive schemes are needed for farmers who want to transition their farming to the Sustainable Rice Platform (SRP)?

II. Low-Carbon Sustainable Rice as an Integral Component of the Sustainable Agricultural System

Concept and Characteristics of Sustainable Agriculture. Low-carbon, sustainable rice cultivation under the Sustainable Rice Platform (SRP) is a critical practice within the broader Sustainable Agricultural Cultivation System, as mandated by Law No. 22 of 2019. Sustainable agricultural cultivation is the management of biological resources to produce agricultural commodities in an optimal, continuous manner while ensuring environmental preservation. This concept is integral to Sustainable Development, which is grounded in three core pillars: environmental, economic, and social sustainability. Maintaining balance among these three pillars is essential, while technological and institutional dimensions serve as complementary elements in supporting the implementation of sustainable agricultural practices.

The primary objectives of sustainable agriculture are as follows:

1. To conserve soil, water, and ecosystems so that they remain productive and balanced over the long term, while supporting the achievement of the Sustainable Development Goals (SDGs).
2. To reduce greenhouse gas (GHG) emissions and enhance the resilience of production systems to the impacts of climate extremes.
3. To improve farmers' income, welfare, and equity fairly and inclusively.
4. To reduce dependence on external inputs (such as fertilizers, pesticides, and fossil fuels) by optimizing the use of local resources.
5. To produce food that is safe, healthy, and nutritious.

Indicators of sustainable agriculture include the application of precision inputs (water, fertilizers, pesticides, and varieties), high productivity and yield stability, improved soil, water, and air health aligned with the Sustainable Development Goals (SDGs), and a low carbon and water footprint.

The Sustainable Rice Platform (SRP) is a Sustainable Agricultural Practice. The Sustainable Rice Platform (SRP) method is fundamentally a comprehensive sustainable agricultural practice. Accordingly, its designation as a category of special rice may serve as one of the strategic instruments for expanding sustainable agricultural cultivation areas in line with national development targets. The SRP framework encompasses a more complex, holistic scope than organic rice. While organic agriculture primarily emphasizes the exclusion of chemical fertilizers and synthetic pesticides and focuses on ecosystem and consumer health, SRP adopts a broader perspective that integrates environmental, economic, social, technological, institutional, and policy dimensions. The SRP Standard for Sustainable Rice Cultivation consists of 41 requirements organized under eight core thematic areas:

1. Farm Management
2. Preplanting
3. Water Use
4. Nutrient Management
5. Integrated Pest Management
6. Harvest and Post Harvest
7. Farmer Health and Safety
8. Labor Rights

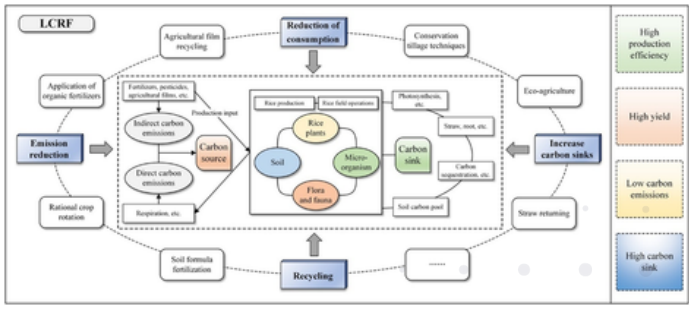
This standard facilitates the adoption of climate-resilient, sustainable practices among smallholder farmers. The existence of the SRP Assurance Scheme further enables actors along the rice value chain to demonstrate compliance with the standard, as measured by performance indicators, thereby allowing farmers to claim that their rice is produced sustainably credibly.

The SRP Standard enables the evaluation of farmers based on the level of implementation of sustainable rice cultivation practices. This evaluation has two main objectives, namely:

1. The SRP Standard provides a framework that allows farmers to claim that the rice they produce is cultivated sustainably. Such claims must be based on a high level of compliance with performance indicators and must be verifiable.
2. The SRP has established minimum scores and mandatory compliance levels (thresholds) that must be met for each requirement to qualify for a claim of sustainably produced rice.

The implementation of the SRP method supports the National Priority (PN) on the Development of Sustainable Agricultural Production Systems under the 2025–2029 National Medium-Term Development Plan (RPJMN), particularly through the indicator on compliance with standards and regulations for sustainable agricultural production.

Low Carbon Rice Farming (LCRF). In contrast to conventional cultivation practices that rely on chemical fertilizers and pesticides to optimize rice production, low-carbon rice (LCR) refers to rice farming systems that achieve high yields with low emissions and high efficiency (Cao and Li, 2014; Chen et al., 2021). Current conventional rice cultivation practices in Indonesia continue to rely on inputs that contribute to greenhouse gas (GHG) emissions. High labor costs and high agricultural input costs also characterize such practices. Consequently, the high carbon emissions generated from conventional rice cultivation exert environmental pressures that are not conducive to sustainable agricultural development (Poulton et al., 2016; Liang et al., 2021; Gangopadhyay et al., 2022; Wu et al., 2022). Low Carbon Rice (LCR) farming can achieve low-emission rice production by reducing agricultural input use, lowering carbon emissions, promoting resource recycling, and enhancing carbon sequestration. These outcomes can be achieved through, among others, site-specific fertilizer formulations, organic fertilizers, crop rotation, straw return to fields, conservation tillage techniques, ecological farming models, and other sustainable rice farming practices (Figure 1).



Source : Huang et al. (2023)

Figure 1. Theoretical Analysis of Low Carbon Rice Farming Technology (LCRF)

Accordingly, LCR can be achieved by reducing agricultural input use, lowering carbon emissions, promoting resource recycling, and enhancing carbon sequestration. Several techniques associated with Low Carbon Rice Farming (LCRF) and aligned with SRP practices include:

1. **Reduction of Flooding:** Techniques such as Alternate Wetting and Drying (AWD) irrigation can reduce methane (CH_4) emissions from paddy fields.
2. **Application of Organic Fertilizers:** The use of organic fertilizers can improve soil conditions, enhance soil fertility, inhibit nitrogen nitrification, reduce N_2O emissions, and contribute to soil carbon sequestration.
3. **Straw Return to Fields:** Rice straw is a renewable resource and a significant carbon sink; returning it to fields can reduce the use of chemical fertilizers, increase soil organic carbon, and improve rice yields.
4. **Ecological Farming Models:** Models such as duck–rice or fish–rice systems can absorb CH_4, thereby reducing emissions, improving soil quality, and ensuring stable rice production.
5. **Precision Fertilization:** Determining fertilizer ratios based on crop nutrient requirements can control nitrogen application rates, reduce N_2O emissions, and improve land quality

III. Incentives as a Key Enabler for SRP Implementation

Although implementing SRP delivers significant long-term cost savings, farmers, as the leading actors, continue to face several structural challenges. Therefore, policy incentives are required as a prerequisite to ensure the sustainability of SRP adoption. The main challenges faced by smallholder rice farming include the following:

1. **Classic Challenges of Smallholder Farmers.** The majority of rice farmers in major production centres in Central Java and East Java, including the survey locations of Boyolali and Klaten, are smallholders with landholdings of less than 0.5 hectares (approximately 63 percent overall). Such limited land sizes make it difficult for farmers to achieve economies of scale, ultimately affecting their income and welfare.
2. **Capital and Financing Constraints.** Smallholder farmers are categorized as micro, small, and medium enterprises (MSMEs) and face long-standing challenges related to limited capital and restricted access to financing for the introduction of environmentally friendly innovations and new technologies. Although adopting green practices can generate long-term cost savings (for example, in the Philippines, an investment of IDR 62.5 million in green equipment resulted in savings of IDR 146.8 million), the required upfront investment costs remain relatively high. This challenge is particularly pronounced during the transition from conventional farming to SRP-based agriculture, when initial capital requirements are substantial. However, findings from a joint study by IPB University and KRKP (2025) indicate that the majority of SRP farmers in Boyolali and Klaten still rely predominantly on self-financing (90.9 percent). Furthermore, the study identifies several challenges in accessing financing from financial institutions (banks and non-banks), including:
    a. Lack of Collateral. This issue constitutes the most significant challenge, particularly as the majority of farmers cultivate land under rental or sharecropping arrangements.
    b. Lengthy Bureaucratic Procedures. Protracted loan application processes and bureaucratic requirements result in lost working time for farmers.
    c. Short Repayment Periods. Monthly instalments under the People's Business Credit (KUR) scheme are perceived as burdensome, whereas the SRP cultivation cycle requires approximately 4–5 months.
    d. Perceived High Interest Rates. Although farmers access KUR at an interest rate of 6 percent, they perceive it as relatively high compared to the returns from their farming activities.
3. **Price and Market Gaps.** At present, there is no significant price differentiation between conventional rice and SRP rice in the market Farmers require competitive price incentives (price premiums) to provide sufficient economicmotivation to transition their business models from traditional practices to SRP.
4. **Human Resource Capacity and Institutional Challenges.** Farmers participating in the SRP program in Boyolali and Klaten are predominantly older (45–74 years), a demographic group that generally finds it more challenging to adopt new cultivation techniques and tends to place greater trust in conventional farming practices. In addition, internal factors such as limited support from farmer groups and the insufficient availability of standard operating procedures (SOPs) for sustainable agriculture remain key weaknesses in both districts.

Positive Impacts of Incentive Schemes on Small Producer Performance. The provision of well-designed policy incentives can enhance the performance of sustainable agricultural enterprises, particularly among small producers such as SRP farmers and small-scale rice mills. Based on the results of different tests from the IPB and KRKP (2025) survey conducted in Boyolali and Klaten Regencies, the findings indicate that the adoption of sustainable agricultural practices (SRP) has a statistically significant impact on various performance dimensions, as detailed in Table 1.

Table 1. Perceived Impacts of Government Incentives on the Performance of Sustainable Agricultural Enterprises

Performance Indicators	Boyolali Regency	Klaten Regency
Production Capacity	Significant improvement observed	Significant improvement observed
Productivity	Significant improvement observed	Significant improvement observed
Profitability	Significant improvement observed	Significant improvement observed
Revenue	Significant improvement observed	Significant improvement observed
Technology Adoption	Significant improvement observed	Significant improvement observed
Absorption of the female workforce	Significant improvement observed	Significant improvement observed
Absorption of the workers with disabilities	Significant improvement observed	Significant improvement observed
Adoption of Environmentally Friendly Practicies	Significant improvement observed	No Significant improvement observed
Green Investment	Significant improvement observed	No Significant improvement observed

Source : IPB and KRKP Study (2025)

In Boyolali Regency, all performance indicators show significant positive mpacts. In contrast, in Klaten Regency, only environmentally friendly practices and green investments are found to have no significant effect on the adoption of sustainable agricultural practices. Field findings indicate that the continued allowance of chemical fertilizer use under the SRP framework, along with the absence of a dedicated SRP certification scheme, contributes to these results. Overall, these findings confirm that incentives play an important role in improving farmer performance across production, profitability, social outcomes (including employment for women and persons with disabilities), and technology adoption. Such performance improvements are essential to ensure the long-term sustainability of SRP practices among smallholder farmers.

IV. Opportunities and Challenges for Low-Carbon Sustainable Rice through Incentive Schemes

The development of low-carbon, sustainable rice as a special rice category is influenced by both internal (strengths and weaknesses) and external (opportunities and challenges) factors. The successful designation of SRP rice as a special rice category largely depends on strategies and incentive schemes that can mitigate weaknesses and challenges while leveraging available opportunities.

Based on the findings of the IPB and KRKP Study (2025), the key opportunities and strengths for SRP development include:

1. **Cost Efficiency and Product Quality.** A primary internal strength identified in both survey regions is more efficient production costs (Boyolali: 73.33%; Klaten: 76.67%) and the perception that SRP rice products are beneficial for health (Boyolali: 73.33%). Environmentally friendly SRP practices help reduce excessive chemical input use, contributing to overall production cost efficiency.
2. **Support from Local Resources.** In Klaten Regency, a significant opportunity is the abundant availability of raw materials for organic fertilizers and biopesticides (93.33%). The availability of these local inputs provides a critical foundation for production.
3. **Growing Market Demand.** There is increasing interest and willingness to pay among domestic consumers—particularly millennials and highly educated older consumers—for sustainable rice. Consumers' primary considerations include product quality, health aspects (minimal chemical use), and taste. The higher price of SRP rice compared to conventional rice is also perceived as a key opportunity in Boyolali (83.33%).
4. **Multistakeholder Support.** The presence of NGOs and multistakeholder forums (MSFs) at the local level, along with support from village governments, local governments, and relevant ministries, is perceived as an essential opportunity to develop sustainable rice.

The challenges in developing SRP that require special attention include:

1. **Certification Costs.** The most significant external challenge perceived by farmers in Boyolali and Klaten is the high cost of certification and the short certification period. If SRP is designated as a special rice category, certification costs could become an additional financial burden for smallholder farmers. Moreover, there is currently no dedicated SRP certification in place, particularly in Indonesia. The introduction of SRP certification would allow price differentiation between SRP rice and conventional rice, thereby recognizing and rewarding farmers who adopt SRP practices.
2. **Climate Change.** Climate change poses a significant threat, as weather uncertainties affect planting cycles, increase the risk of crop failure, and impact productivity, even when low-carbon practices are applied.
3. **Access to Financing.** Limited support from financial institutions (both banks and non-bank entities) remains a challenge in both regions due to classic issues such as a lack of collateral and lengthy bureaucratic procedures.
4. **Farmer Welfare.** Stakeholder perceptions of SRP farmers' empowerment, health, and safety remain low. This is another challenge, as farmers have yet to receive full recognition and adequate protection, which are crucial factors to sustaining their motivation and long-term engagement in SRP practices.

V. Required Incentive Schemes and Implementation Strategies

To promote low-carbon, sustainable rice (SRP) as a special rice category, policy interventions are needed to provide incentives to overcome financial, institutional, and market barriers. Based on the results of the Analytical Hierarchy Process (AHP) analysis, the central government is identified as the most strategic actor in setting standards and allocating budgets, supported by multistakeholder engagement. The priority incentive schemes required include:

1. **Special Rice Price Incentive Scheme (Priority 1)**
   a. **Required Incentive:** Competitive premium selling price.
   b. **Recommended Action:** The government, through the National Food Agency (BAPANAS) or relevant regulations, should designate SRP rice as a "Special Rice" category, separate from the Maximum Retail Price (HET) for medium/premium rice. Establishing a premium pricing scheme (economic price) provides substantial financial incentives and compensates farmers for their efforts. This scheme aligns with consumer willingness-to-pay (WTP) for sustainable rice.
2. **Special Allocation Fund (DAK) Incentive Scheme (Priority 2)**
   a. **Required Incentive:** Facilitation of certification costs.
   b. **Recommended Action:** Allocate DAK to local governments to support strategic sustainable agricultural activities, including facilitation of SRP certification costs and provision of environmentally friendly infrastructure. This scheme is crucial to address the financial burden of high and short-term certification costs, which are a significant challenge for smallholder farmers.
3. **SRP Innovation Assistance Scheme (Priority 3)**
   a. **Required Incentive:** Support for biological production inputs and technology.
   b. **Recommended Action:** Increase investment in research and development (R&D) for high-yield, low-carbon rice varieties and provide support for biological production inputs (fertilizers, seeds, biopesticides). This assistance reduces farmers' dependence on external chemical inputs, addresses weaknesses in seed/input self-sufficiency, improves cultivation efficiency, and ensures the availability of inputs for producing SRP.
4. **Special Banking and Non-Banking Financing Scheme (Priority 4)**
   a. **Required Incentive:** Access to soft credit.
   b. **Recommended Action:** Design flexible financing schemes, such as People's Business Credit (KUR), tailored to the rice planting cycle (4–5 months). This scheme should address classic smallholder constraints related to lack of collateral, minimize lengthy bureaucracy, and provide appropriate financing products.

The implementation of these incentive schemes, particularly through premium pricing, is a prerequisite for strengthening the market position of low-carbon, sustainable rice, increasing farmer income, and ensuring the product's availability and sustainability in the future.

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