



Agro-Socioeconomic Newsletter

Indonesian Center for Agricultural Socio Economic and Policy Studies (ICASEPS)

Editorial

Dear valued readers,

At the beginning of this year, we returned with some interesting information, including information on rice milling unit governance and the US's reciprocal tariff policy on Indonesian trade. We also included information on the revitalization of agricultural innovation related to policy developments supporting food self-sufficiency for your reference.

In addition, this newsletter also contains issues on strengthening dairy cooperatives and collaboration between ICASEPS and other stakeholders regarding milk pricing and quality standards, as well as strengthening the provision of dairy cattle feed. Finally, a dialogue meeting initiated by ACIAR, Australia, with relevant institutions in Indonesia regarding future research priorities is also presented in this edition.

The Editor

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OPTIMIZING THE GOVERNANCE OF RICE MILLING SYSTEMS

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Introduction

Amid Indonesia's ambition to achieve rice self-sufficiency, challenges in the national food system extend beyond farm-level production to inefficiencies throughout the post-harvest chain. Existing evidence suggests that increases in paddy production have not been matched by improvements in milling performance. In this context, value losses occur not only in the field but also during processing, where operations are still largely carried out using aging machinery and inadequate infrastructure.

Efforts to reform the national rice trade system have increasingly highlighted the strategic role of Rice Milling Units (RMUs) as a critical node linking farmers to consumer markets. RMUs are not merely processing facilities that convert paddy into rice; they also determine product quality, value addition, and overall competitiveness. However, the structure of Indonesia's RMU industry remains highly fragmented and inefficient. Approximately 95.06% of milling units are small-scale, while around 53.4% are concentrated in Java, reflecting both spatial concentration and intense competition in major production areas.

Against this backdrop, the decline in the number of rice milling units should be interpreted not only as a national trend but also as a regional phenomenon. Nationally, the number of milling units has decreased by approximately 6.81%, while provinces with high concentration, such as West Java, have experienced a deeper decline of around 7.85%. This pattern suggests that regions with dense concentrations of milling units may face relatively greater structural pressures, including competition, raw material constraints, and technical inefficiencies.

A closer look at West Java shows that an estimated 29,405 small-scale rice mills remain in operation, with an average utilization rate of around 76.3%, indicating that the reduction in the number of units has not necessarily translated into improved efficiency. Instead, this may reflect underlying structural pressures within the industry, although it may also partially indicate ongoing consolidation among operators. A consistent pattern thus emerges across national and local levels: a large number of actors does not necessarily correspond to improved industry performance.



This condition highlights a structural paradox in which a high number of business units coexist with relatively low efficiency, where the proliferation of small-scale mills is accompanied by underutilized production capacity.

Structural and Technical Inefficiencies in RMU Operations

The performance of RMUs in Indonesia remains constrained by significant technical limitations. The average age of milling machinery is approximately 14.6 years, contributing to low productivity and inconsistent rice quality. Post-harvest losses remain relatively high, at around 10.82%, indicating suboptimal handling and processing practices. Milling recovery rates are also relatively low and vary across scales, averaging around 55.25% for small-scale mills, 54.44% for medium-scale mills, and 56.00% for large-scale mills. These variations are influenced by machine conditions, equipment configuration, paddy quality, and seasonal factors.

In this context, limitations in infrastructure and supporting facilities play a critical role in reinforcing inefficiencies. Aging machinery, limited access to drying facilities (dryers), insufficient cleaning units (cleaners), and inadequate storage infrastructure result in inconsistent input quality and reduced process control. These constraints affect not only recovery rates but also rice quality, such as higher broken rates and inconsistent milling degrees, along with energy efficiency, operational costs, and overall productivity.

From a value chain efficiency perspective, infrastructure can be understood as a critical control point that determines the magnitude of value loss along the post-harvest process. Weaknesses in this area may generate multiplier effects across the entire RMU system. Empirical findings suggest that inadequate drying, cleaning, and storage facilities are associated with higher losses, lower product quality, and reduced output stability, ultimately weakening competitiveness.

Thus, low recovery rates (approximately 55–56%) and relatively high post-harvest losses (around 10.82%) cannot be separated from infrastructure constraints. These findings position infrastructure as a key determinant of RMU performance at the national level, rather than merely a technical issue at the firm level. They are also consistent with broader evidence showing that paddy quality and uniformity depend heavily on access to adequate drying and storage facilities.

In addition to technical constraints, there is a mismatch between installed capacity and the availability of raw materials. Many RMUs operate below their optimal capacity due to fluctuations in both the volume and quality of paddy supply, reflecting weak coordination within the supply chain. Meanwhile, by-products such as rice husk and bran remain underutilized, despite their potential economic value for energy and feed industries.

More broadly, these conditions suggest that inefficiencies in RMUs are not solely technical but also reflect suboptimal resource allocation within the post-harvest system. Improving RMU performance, therefore, requires not only upstream production increases but also targeted infrastructure interventions as a key leverage point in the rice value chain.

Market Structure, Cost Pressures, and Value Distribution

RMU performance is also shaped by an imbalanced market structure. There are indications that the paddy market tends toward an oligopsonistic structure, where large-scale mills dominate paddy absorption at around 69.13%, compared to 21.4% for medium-scale mills and approximately 9.47% for small-scale mills. This imbalance weakens the bargaining position of both small-scale mills and farmers, particularly when paddy prices exceed government reference prices and are influenced by intermediaries such as traders and collectors.

On the cost side, rice production is dominated by paddy costs, which account for more than 90% of total production costs. This makes RMU operators highly vulnerable to fluctuations in raw material prices and quality. Rice prices at the milling level range between IDR 13,098 and IDR 13,993 per kilogram, while profit margins remain relatively low, at approximately 1.05% to 2.54% (equivalent to IDR 140–348 per kilogram). Such narrow margins limit operators' capacity to reinvest and upgrade technology.

Policy Directions and Strategic Initiatives

Addressing these challenges requires comprehensive and integrated policy interventions. First, technological modernization should be prioritized through machine revitalization and the adoption of Good Manufacturing Practices (GMP) and safety and environmental standards. Interventions should cover the broader infrastructure ecosystem, including drying, cleaning, and storage facilities. Support schemes may combine targeted grants and subsidized credit to encourage investment in modern milling systems.

Second, capacity and spatial distribution need to be managed through zoning policies and controls on the establishment of new RMUs in saturated areas, particularly in Java. This can be complemented by infrastructure clustering approaches that allow small-scale mills to access shared facilities such as communal dryers and modern storage units.

Third, market and pricing mechanisms should be strengthened through quality-based pricing systems and by enhancing the roles of stabilization agencies such as Bulog. Incentives should also encourage investment in quality-improving infrastructure, aligning price signals with technological upgrading.

Fourth, strengthening upstream–downstream partnerships is essential to improving supply chain coordination. Partnerships between farmers, farmer groups, and mills can enhance supply continuity and quality. These arrangements may also support shared investment in infrastructure.

Fifth, digitalization of governance and data integration, through platforms such as Online Single Submission (OSS), can improve transparency and policy effectiveness. Data systems can be further developed to map infrastructure conditions, enabling more targeted and evidence-based interventions.

Conclusion

Optimizing RMU governance is a strategic step toward structural reform in Indonesia's food system. Key challenges, including the dominance of small-scale mills (95.06%), aging machinery (around 14.6 years), high post-harvest losses (approximately 10.82%), and imbalanced paddy absorption (around 69.13% controlled by large-scale mills), indicate that inefficiencies are systemic and interconnected.

Without targeted interventions, RMUs may become a limiting factor in enhancing value across the rice supply chain. Therefore, reforms encompassing technological development, market structure, institutional arrangements, and data governance must be implemented simultaneously. By positioning RMUs as a key leverage point, the transition toward a more efficient, equitable, and sustainable food system can be achieved more effectively.

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US TARIFFS SHAKE INDONESIA'S AGRICULTURAL EXPORTS AND GROWTH OUTLOOK

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The United States (US) tariffs are changing how Indonesia trades farm products. These policies aim to protect American industries but also affect global markets. For Indonesia, they bring both risks and opportunities—especially for

farmers, exporters, and policymakers trying to keep exports strong while managing rising imports and shifting trade patterns. These changes matter because agriculture supports millions of livelihoods. When trade rules shift, farmers feel it quickly through prices, demand, and access to global markets.

US Reciprocal Tariff Policy

In 2025, the United States introduced a new tariff policy that raised import taxes on goods from many countries, including Indonesia. At first, Indonesia faced a high tariff, but it was later reduced after negotiations. Still, the policy applies to over 150 countries and has reshaped global trade.

Countries reacted differently. Some worked with the US to lower tariffs, while others pushed back or mixed both approaches. Indonesia chose to cooperate, aiming to maintain access to the US market. This policy is not just about tariffs. The US also enforces strict food safety and product standards, making it harder for exporters to enter the market.

In simple terms, the US is trying to protect its own economy while asking other countries to open theirs. For Indonesia, this means adjusting quickly to new rules, negotiating smartly, and finding ways to stay competitive in a tougher global market. These policy shifts also send signals to other countries, which may respond with their own trade measures, further reshaping global competition patterns.

Potential Agricultural Commodities Affected

Indonesia's farm trade with the US remains positive overall, largely due to plantation products such as palm oil, cocoa, and coffee. However, the new tariffs could change this balance.

Some imports from the US are expected to rise sharply. These include soybeans, wheat, cotton, milk, and beef—products Indonesia already depends on. At the same time, some exports may slow down, especially horticulture, such as pineapple.

Each subsector is affected differently. Food crops may face higher imports, making local farmers compete with cheaper

foreign goods. Plantation products may become less competitive in export markets. Livestock and horticulture sectors could see mixed effects—some gains, some losses.

In short, the policy creates pressure on local producers while increasing reliance on imports. This could shift what farmers grow and how markets behave across Indonesia's agricultural sector. Over time, these changes may influence land-use decisions, investment priorities, and even rural employment patterns across different agricultural regions in Indonesia.

Impacts of US Reciprocal Tariffs

The tariff policy increases imports from the US, especially because Indonesia agreed to buy billions of dollars' worth of agricultural goods. This creates strong competition for local farmers. At the same time, exporting to the US becomes more difficult. Higher standards and tighter rules in the US market make it more difficult for Indonesian products to enter. As a result, farmers may change what they produce. Some may shift to more competitive commodities, such as chili or poultry. Others may reduce production if profits fall.

Studies show that Indonesia's export competitiveness could weaken in the coming years, especially for plantation commodities. However, one solution is to expand exports to other countries instead of relying heavily on the US.

So, while tariffs create pressure, they also push Indonesia to rethink its strategy and explore new markets. This adjustment process may take time, but it can lead to a more flexible and resilient agricultural sector in the long run.

Impacts on Economic Growth

The tariff policy also affects Indonesia's overall economy. Increased imports and trade commitments can reduce the country's trade surplus and put pressure on growth.

Experts estimate that national economic growth could drop slightly each year. While the impact may seem small, it affects many sectors, including agriculture, manufacturing, and services.

However, there is a brighter side. If Indonesia shifts its exports to other countries and reduces dependence on the US, growth could actually improve. Some sectors, such as trade and services, may benefit the most. Agriculture could still grow, but only slightly, while manufacturing may struggle due to reliance on imported inputs.

Overall, the key message is clear: the impact of tariffs depends on how Indonesia responds. Smart trade strategies can turn challenges into opportunities and even support long-term economic growth. In the long term, economic resilience will depend on diversification, innovation, and the ability to adapt quickly to global market changes.

Policy Recommendation

Indonesia should diversify export markets, strengthen domestic production, and promote higher-value processed products. Strong infrastructure, fair trade deals, and support for farmers are essential. By reducing dependence on one market and improving competitiveness, Indonesia can stay resilient in a changing global trade environment. In addition, strengthening farmer capacity, improving logistics efficiency, and ensuring stable domestic policies will help Indonesia respond better to future global trade shocks.

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REVITALIZING THE AGRICULTURAL INNOVATION SYSTEM TO SUPPORT FOOD SELF-SUFFICIENCY

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Introduction

Innovation is widely recognized as a key driver of economic growth and social transformation, particularly in agriculture. Countries that can develop and apply science-based technologies tend to achieve stronger productivity growth, greater food security, and higher competitiveness in global markets. In Indonesia, however, the national agricultural innovation system still faces structural weaknesses that limit its ability to generate and disseminate strategic technologies for farmers.



One major challenge is the relatively low level of investment in agricultural research and development (R&D). Indonesia's agricultural R&D expenditure remains far below that of many developed and emerging economies, constraining the production of superior seeds, modern mechanization, climate-smart technologies, and efficient farming systems. Although Indonesia's innovation ranking has improved in recent years according to the Global Innovation Index (GII), the country still lags behind several neighboring countries in Southeast Asia, including Malaysia, Vietnam, Thailand, and the Philippines.

To strengthen the national innovation ecosystem, the government established the National Research and Innovation Agency (BRIN) through Law No. 11/2019 on the National Science and Technology System and Presidential Regulation No. 78/2021. The policy aimed to consolidate government research institutions under a single national body in order to improve efficiency, coordination, and scientific productivity. In the agricultural sector, this restructuring led to the integration of the Indonesian Agency for Agricultural Research and Development (IAARD) into BRIN.

However, the transition process created significant institutional and operational challenges. Researchers and engineers were transferred to BRIN, while many research facilities, experimental stations, laboratories, and unfinished research outputs remained under the Ministry of Agriculture. As a result, researchers became disconnected from the infrastructure and long-term programs they had developed over many years, disrupting continuity in agricultural innovation activities.

Prior to the restructuring, Indonesia had gradually built an integrated agricultural innovation system linking research, assessment, development, extension, and technology dissemination. Through the Research–Extension Linkage (REL) model, agricultural technologies could move relatively efficiently from laboratories and field trials to farmers' fields. This integration contributed to the dissemination of improved technologies and supported national food self-sufficiency programs.

The institutional separation between research functions and agricultural implementation has weakened this previously

integrated system. Coordination between researchers, extension workers, and policymakers has become more fragmented, slowing the generation, adaptation, and dissemination of practical technologies needed by farmers. Consequently, revitalizing the agricultural innovation system has become increasingly important to ensure that agricultural research remains relevant, applicable, and responsive to national food security challenges.

Key Issues Following the Integration of IAARD into BRIN

Before the integration into BRIN, the agricultural innovation system operated in a relatively coordinated and field-oriented manner. Research institutions worked closely with extension agencies and regional assessment centers to ensure that technologies were adapted to local conditions and disseminated effectively to farmers. This linkage strengthened the connection between scientific research and practical agricultural development.

Following the institutional merger, several major challenges have emerged that weaken the effectiveness of agricultural innovation and technology dissemination in Indonesia.

a. Weakening of Coordination between Research and Agricultural Needs

The separation of research institutions from the technical ministry has reduced the alignment between research priorities and farmers' actual needs. Research planning has become less connected to field realities, resulting in slower responses to emerging agricultural problems and reduced relevance of research outputs.

b. Shift toward Publication-Oriented Research

BRIN's research performance indicators place strong emphasis on internationally indexed scientific publications and academic recognition. While scientific excellence is important, this orientation may reduce attention to applied, solution-oriented research that directly addresses farmers' problems and supports agricultural productivity.

c. Disruption of Long-Term Research Programs

The transition process separated researchers from laboratories, experimental farms, field trials, and accumulated research assets. As a result, many multi-year research activities were interrupted, including breeding programs and the development of new crop varieties. This disruption has slowed the generation of agricultural technologies needed to support food production.

d. Incomplete Research and Innovation Ecosystem

The restructuring of human resources, budgets, and institutional arrangements has not yet produced a fully functional research ecosystem. Coordination among research, assessment, development, and technology application functions remains limited, reducing the effectiveness of innovation delivery to end users.

e. Decline in Technology Production and Seed Availability

The transfer of research and development functions from the Ministry of Agriculture has contributed to the reduced production of source technologies and improved seed varieties. At the same time, BRIN has not yet fully replaced these

operational functions. This condition has contributed to the declining availability of quality seeds and slowed the adoption of improved technologies by farmers.

f. Weak Linkage between Research and Extension Services

Agricultural extension workers increasingly face difficulties accessing updated technologies and technical recommendations. The weakening of institutional mechanisms linking researchers and extension services has slowed the dissemination of technology and reduced farmers' access to innovation.

Policy Recommendations

Revitalizing Indonesia's agricultural innovation system requires both short-term institutional improvements and medium-term structural reforms. The objective is not only to strengthen scientific capacity, but also to ensure that research outputs are rapidly translated into practical technologies that improve agricultural productivity and food security.

Short-Term Strategy: Strengthening Collaboration and Coordination

Within the current institutional framework, stronger coordination among BRIN, the Ministry of Agriculture, universities, regional governments, and the private sector is urgently needed. Collaboration should focus on generating, scaling up, disseminating, and applying agricultural technologies that directly respond to farmers' needs.

Bridging institutions also need strengthening to reconnect research planning with field-level agricultural challenges. In this context, the Research and Innovation Communication Forum – BRIN could play a more strategic role in facilitating communication, coordination, and technology transfer among stakeholders.

Medium-Term Strategy: Rebalancing Research Functions

In the medium term, the current division of responsibilities between BRIN and the Ministry of Agriculture should be reviewed to create a more balanced and effective innovation system. BRIN should primarily focus on basic and strategic research, scientific advancement, and the development of frontier innovations.

At the same time, the Ministry of Agriculture should be given a stronger mandate to conduct applied research, adaptive testing, technology assessment, and downstream innovation activities directly linked to farmers and agribusiness actors. Such an arrangement would bring research activities closer to end users

while improving the responsiveness of innovation systems to field problems.

Several countries with strong agricultural sectors, including Brazil, China, South Korea, and Japan, maintain close institutional relationships between agricultural R&D agencies and their ministries of agriculture. Indonesia could adopt a similar approach to strengthen the integration between research, extension, and agricultural development.

To support these reforms, regulatory adjustments are required, particularly regarding Presidential Regulation No. 78/2021 on BRIN. Clearer institutional boundaries and complementary functions between BRIN and sectoral ministries are essential to avoid overlap, fragmentation, and inefficiencies in agricultural research and innovation.

Final Remarks

Revitalizing Indonesia's agricultural innovation system is essential for accelerating food self-sufficiency, strengthening technological competitiveness, and improving farmers' welfare. The current fragmentation between research institutions and agricultural implementation agencies has weakened the linkage between scientific innovation and field application, reducing the effectiveness of technology dissemination and adoption.

In the future, BRIN should play a central role as the national center for basic research, frontier science, strategic innovation, and the development of advanced technology. Its primary responsibility should be to strengthen scientific excellence, national research capacity, and long-term innovation competitiveness at both national and international levels.

Meanwhile, the Ministry of Agriculture should serve as the leading institution for applied agricultural research, adaptive technology development, field validation, seed and technology dissemination, and extension-based innovation delivery. The Ministry of Agriculture should ensure that research outputs are translated into practical solutions that directly address farmers' needs, increase productivity, and support sustainable food security.

A clearer division of functions, supported by strong coordination and institutional synergy, will create a more integrated, responsive, and farmer-oriented agricultural innovation system. Such a system is critical to ensuring that scientific progress directly contributes to national agricultural transformation and long-term food resilience.

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Policy Issues

STRENGTHENING THE ROLE OF DAIRY COOPERATIVES TO INCREASE NATIONAL MILK PRODUCTION



To date, domestic milk production has met only approximately 20% of total national milk demand, meaning that the majority of demand is highly dependent on imports. This dependence indicates that the national dairy farming sector still faces various

structural challenges that hinder increases in production and productivity. On the other hand, strengthening domestic milk production is crucial for enhancing food security, improving farmers' welfare, and reducing reliance on international markets.

Within the national milk production system, cooperatives play a highly strategic role. Approximately 75% of domestic fresh milk production is generated by small-scale farmers, the majority of whom are members of cooperatives. Cooperatives not only serve as collection and distribution agencies for milk to the processing industry but also as providers of various services to farmers, such as the supply of feed and medications, animal health services, access to financing, and technical assistance in farming activities. With this role, cooperatives serve as the primary link

between smallholder farmers and the market and the dairy processing industry. However, they also face various constraints that limit their ability to fully perform these service functions.

Challenges in Strengthening the Role of Dairy Cooperatives

Strengthening the role of dairy cooperatives still faces various challenges related to institutional capacity, service provision to members, industry partnerships, and access to finance. From an institutional perspective, many cooperatives are still managed in a traditional manner, with management systems that are not yet professional and lack adequate transparency and digitalization. The regulations governing cooperatives, namely Law No. 25 of 1992 on Cooperatives, are considered insufficient to address the increasingly complex needs of cooperative management. Furthermore, leadership succession remains a concern, as management is still dominated by the older generation, whilst interest among the younger generation in entering the dairy farming sector is relatively low. The absence of a structured succession system causes leadership transitions to proceed slowly and risks hindering the emergence of innovation in cooperative management.

Another challenge relates to the cooperatives' limitations in providing production inputs and technical services to farmers. The supply of forage still largely depends on member farmers, as many cooperatives lack land for forage cultivation. Efforts to collaborate on land use with other parties, such as Perum Perhutani (a state-owned forestry company) or PT Perkebunan Nusantara (a state-owned plantation company), still face obstacles related to permits, infrastructure, and potential land-use conflicts. Furthermore, the cooperatives' reliance on commercial feed companies also makes it difficult to control feed prices. On the other hand, the limited number and expertise of extension workers mean that adoption of good dairy farming practices and milk-handling procedures has not been widespread among farmers, resulting in low productivity and inconsistent milk quality.

Cooperatives also face challenges in their partnerships with the dairy processing industry. Policy changes introduced by the Minister of Agriculture Regulation No. 30 of 2018 and Minister of Agriculture Regulation No. 33 of 2018 removed the industry's obligation to form partnerships with cooperatives or farmers, thereby weakening the cooperatives' bargaining position within the milk supply chain. Most cooperatives have no market alternatives other than selling fresh milk to the processing industry, whilst milk prices are generally set by the industry, and milk acceptance depends heavily on meeting the set quality standards. Furthermore, the industry's obligation to absorb domestic milk is currently regulated only through circulars and thus lacks strong legal force, ultimately creating market uncertainty for farmers and cooperatives.



On the other hand, access to finance remains a constraint on the development of farmers' businesses. The KUR program offers financing opportunities through a cluster scheme, but uptake by dairy cooperatives remains limited. Many

cooperatives have yet to meet administrative requirements, such as standardized financial reporting and required institutional legal documentation. Furthermore, uncertainty about the industry's milk procurement has made cooperatives reluctant to serve as guarantors for such financing schemes. As a result, the role of cooperatives in facilitating financing for their member farmers has not yet been optimally realized.

Policy Recommendation

To enhance the role of cooperatives in supporting the development of the national dairy industry, comprehensive policy strengthening efforts are required. Improvements in cooperative governance should be supported by accelerating the revision of the Cooperatives Act to better align with the needs of modern cooperative management. Strengthening the managerial capacity of cooperatives must also be achieved through training programs, the digitization of administrative systems, and the development of a more systematic mechanism for the succession planning of cooperative management.

The government can facilitate land-use cooperation between cooperatives and landowners to develop forage production. Furthermore, strengthening cooperation with educational institutions and veterinary professionals is crucial for enhancing farmers' technical support capacity. The formation of inter-cooperative consortia could also serve as a strategy to improve the efficiency of feed procurement through bulk purchasing.

To strengthen the bargaining position of cooperatives in milk marketing, the government needs to expedite the drafting of regulations that provide certainty regarding the processing industry's obligation to purchase domestic milk. Furthermore, improving milk quality by implementing a quality control system from the farmer level to the milk collection point is a key factor in enhancing the competitiveness of domestic dairy products.

Optimizing and facilitating access to financing facilities, such as the Cluster KUR, Agricultural Machinery KUR, LPDB (revolving fund scheme), Cooperatives, and others, can support the development of livestock businesses, the procurement of milk-cooling facilities, the modernization of milk collection points, and the development of other infrastructure. This serves as a vital instrument for supporting the development of the national dairy industry.

DRIVING FAIR MILK PRICING AND QUALITY STANDARDS: COLLABORATION BETWEEN ICASEPS, THE MINISTRY OF INDUSTRY, AND THE MINISTRY OF COOPERATIVES

The collaboration between ICASEPS, the Ministry of Industry, and the Ministry of Cooperatives is a concrete follow-up to the Dairy Policy Advisory Committee (DPAC) meeting held on

September 11, 2025. This initiative marks a strategic step toward strengthening the governance of the national dairy industry through much-needed inter-ministerial synergy. The collaboration, formalized through an

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intensive discussion on December 8, 2025, at the Ministry of Industry, marks an initial milestone toward more operational and integrated policy directions.

The primary objective of this collaboration is to establish a fair, transparent, and quality-based pricing system for fresh milk. In addition, it aims to strengthen the role of dairy cooperatives as key intermediaries between farmers and the dairy processing industry (DPI), thereby fostering a more efficient, competitive, and sustainable dairy ecosystem.

The first key discussion point emphasizes the importance of integrated milk quality monitoring. Quality control is not only the responsibility of farmers and cooperatives but also requires active involvement from the dairy processing industry. Each actor in the supply chain plays a role in maintaining milk quality from production through processing, thereby ensuring the final product's quality.

To support this approach, strengthening partnerships becomes crucial. The relationship between cooperatives and farmers needs to be reinforced through capacity building, technical assistance, and continuous support. At the same time, partnerships between cooperatives and the dairy processing industry must be strengthened to ensure alignment on quality standards and procurement mechanisms and to achieve a more equitable distribution of benefits.

The second point highlights the importance of transparency in quality standards and milk pricing systems. The dairy processing industry and cooperatives need to agree on key quality parameters that form the basis for pricing. Furthermore, there should be clear consequences if quality standards are not met, enabling farmers to fully understand the system in place.

To support this transparency, it is necessary to develop guidelines for milk pricing based on key quality parameters. Indicators such as fat content, protein levels, and milk hygiene can serve as the primary basis for price determination. Meanwhile, additional quality parameters can be used as incentives to encourage farmers to continuously improve milk quality.

The third point of this collaboration focuses on strengthening inter-institutional cooperation to expand access to forage land and grazing areas for dairy cattle. Limited land availability in Java remains a major constraint to increasing national milk production. Therefore, expansion strategies beyond Java are required, supported by cross-ministerial policies and relevant stakeholders.

The benefits of this collaboration are expected to be widely shared among farmers, cooperatives, and industry players. Farmers will gain fairer price certainty and incentives to improve quality. Cooperatives will further strengthen their role as professional economic institutions that provide services and connect farmers with industry. Meanwhile, the industry will benefit from a sustainable supply of high-quality raw materials. Overall, this collaboration enhances the competitiveness of the national dairy industry and strengthens food security through domestic dairy products.

RESEARCH PRIORITIZATION DIALOGUE

ACIAR Executive Board visited Indonesia from 21 to 26 September 2025. A series of meetings was organized, including consultation with key ministries on research prioritization. The

meeting was attended by representatives from several ministries—including the Ministries of Agriculture, Marine Affairs and Fisheries, and Environment and Forestry—as well as the National Research and Innovation

Agency (BRIN) and the Coordinating Ministry for Food.

The Director of Food and Agriculture of Bappenas highlighted the details of the National Medium-Term Development Plan (2025–2029), which identifies several key challenges facing the agricultural sector, including climate crisis and environmental constraints, shrinking per capita agricultural land, aging farmers, data fragmentation and interoperability, research and development capacity and institutions, as well as researcher utilization and internationalization. Some policy approaches that were offered to address the challenges were: (a) adopt a holistic food-systems approach beyond economics, incorporating low-carbon/emissions and other environmental and social dimensions; (b) align with the food–energy–water nexus in long-term planning (RPJPN); and (c) advance downstreaming and the circular/bioeconomy, strengthening value creation from on-farm to off-farm activities.

ACIAR General Manager for Partnerships, Dr. Suzie Newman, presented the focus areas of ACIAR's partnership with their member countries. These include capacity development (including gender and disabilities) and inclusive value chains, climate change adaptation and mitigation, and impact evaluation to guide investment choices. ACIAR's investment aims to promote stronger food security and livelihoods to support regional food security and prosperity.

Prof. Atien Priyanti also discussed BRIN's current position and role. BRIN's priority programs for 2025 include: (a) public sector reform and leadership for quality public services; (b) fair and sustainable decentralization; (c) integration of food security – self-sufficiency and sovereignty; and (d) economic transformation in the digital era. The Secretary of the Directorate of the Agency for Agricultural Assemblies and Modernization (BRMP) outlined three major areas for collaboration, namely (a) information systems and AI in collaboration with BRIN to develop SISCrop – remote sensing to monitor total paddy field area which also introduces paddy water balance and planting calendar; (b) production and productivity, e.g. ACIAR project on Mango; and (c) policy and scaling-up activities.

Land conversion versus national strategic projects was also discussed, as in many regions, it reduces the total agricultural land area for food commodities. Downstream development and the adoption of digital technology were also highlighted as concerns, as planning must address long-term activities. The transformation of modern agriculture will face challenges related to the availability and adoption of technology, particularly as agricultural land shrinks, in which technology can play an important role. The importance of developing evidence-based policies and maximizing research output to support these policies was emphasized throughout the discussion. Dr. Ingrid Van Putten, Research Director of ACIAR, closed the discussion by highlighting the importance



of establishing a research hub that may connect the technical ministries with BRIN.

STAKEHOLDER MEETING ON ADVANCING COMMERCIALIZATION OF FORAGE FEED TO STRENGTHEN DAIRY CATTLE FEED



AVAILABILITY

ICASEPS, in collaboration with the Directorate of Feed of the Ministry of Agriculture, held a stakeholder meeting themed “Commercialization of Forage Feed to Strengthen Dairy Cattle Feed Availability.” The meeting was motivated by long-standing issues related to feed availability, including limited land access, small-scale land ownership for forage production, and insufficient forage production. This forum served as a platform for dialogue among government representatives, academics, cooperatives, and private-sector actors to identify solutions to address feed availability, one of the major constraints in the livestock sector.

In his opening remarks, Dr. Sudi Mardianto, Director of ICASEPS, emphasized that feed remains a critical factor in determining the success of both dairy and beef cattle enterprises. He noted that research findings show little improvement in farmers’ access to land for feed production since the 1990s. In fact, recent trends indicate that farmers are facing increasing difficulties in accessing forage land.

Field conditions reveal that many farmers still rely on self-collected grass (cut-and-carry system), where feed quality is inconsistent and collection time is increasing due to longer distances and limited availability of wild grasses. This situation

becomes more severe during the dry season when forage options are scarce. As a result, milk quality and productivity are adversely affected. Limited knowledge of animal nutrition among farmers also contributes to a lack of alternative feed options, particularly for meeting energy and protein requirements, as well as to the underutilization of local feed resources.

The discussion also highlighted broader challenges in the national livestock industry. Indonesia continues to face deficits in both beef and milk production, with a high dependency on imports. This indicates the need to strengthen domestic production systems, including feed supply chains.

One key point raised was the shifting perspective on forage feed. Previously regarded as a freely available resource with little economic value, forage is now increasingly seen as a commodity with strong commercial potential. In the long term, forage feed even offers opportunities for export markets.

However, several challenges remain in realizing this potential, including the absence of feed quality standards, limited land for production, low adoption of processed feed, and high production and distribution costs. Therefore, participants agreed on the need for stronger policy support, including improved access to financing, targeted subsidies, and strengthened certification systems for feed and forage seeds.

The meeting also provided a platform to share experiences and best practices from various business models. These models included corn silage development, the use of plantation land for forage production, and partnership opportunities between businesses and cooperatives. Cooperatives were recognized for their crucial role in helping smallholder farmers access quality feed and technology. Notably, there was also a proposal to establish a platform or intermediary institution to connect stakeholders with information, technology, and market access within the livestock feed business, from upstream to downstream.

As a follow-up, ICASEPS and its stakeholders will develop a more sustainable forage-feed business model. Further meetings are planned to deepen discussions and strengthen collaboration. Through this initiative, the commercialization of forage feed is expected to expand, contributing to increased livestock productivity and reducing Indonesia’s dependence on imported milk and beef.

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