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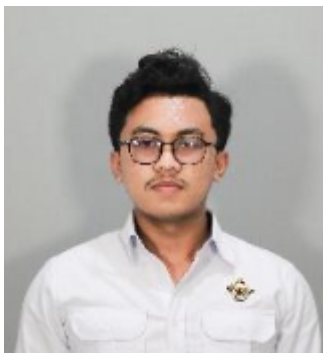
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Sherlita Nurosidah has been in the Audit Board of Indonesia (BPK) for over five years. Prior to that, she gained her bachelor's degree in accounting at Brawijaya University in 2015 and a master's degree in economic science at the same university in 2023. She has served as an auditor for various local governments at the institution. Upon completing her master's, she is currently a competency development analyst and in charge of a bureaucracy reformation project as one of the strategic unit transformation members. To this date, she has actively written academic journals and conference papers on diverse topics, such as accounting, public auditing, economic issues, flypaper effects, sustainable energy, and legal studies.



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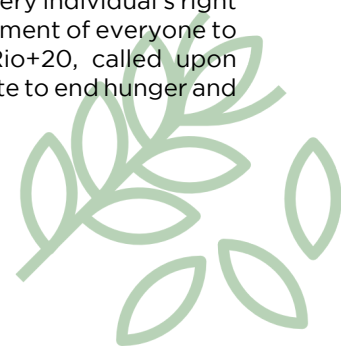
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Background

As the global population continues its expansion, there is an urgent need for increased efforts and innovation to sustainably enhance agricultural production, optimize the global supply chain, reduce food losses and waste, and ensure that those experiencing hunger and malnutrition can access nutritious food. Many in the international community are optimistic about the possibility of eliminating hunger within the next generation and are collaborating to realize this objective.

During the 2012 Conference on Sustainable Development (Rio+20), world leaders reaffirmed every individual's right to safe and nutritious food, aligning with the right to adequate food and the fundamental entitlement of everyone to be free from hunger. The UN Secretary-General's Zero Hunger Challenge, launched at Rio+20, called upon governments, civil society, faith communities, the private sector, and research institutions to unite to end hunger and eradicate the most severe forms of malnutrition.

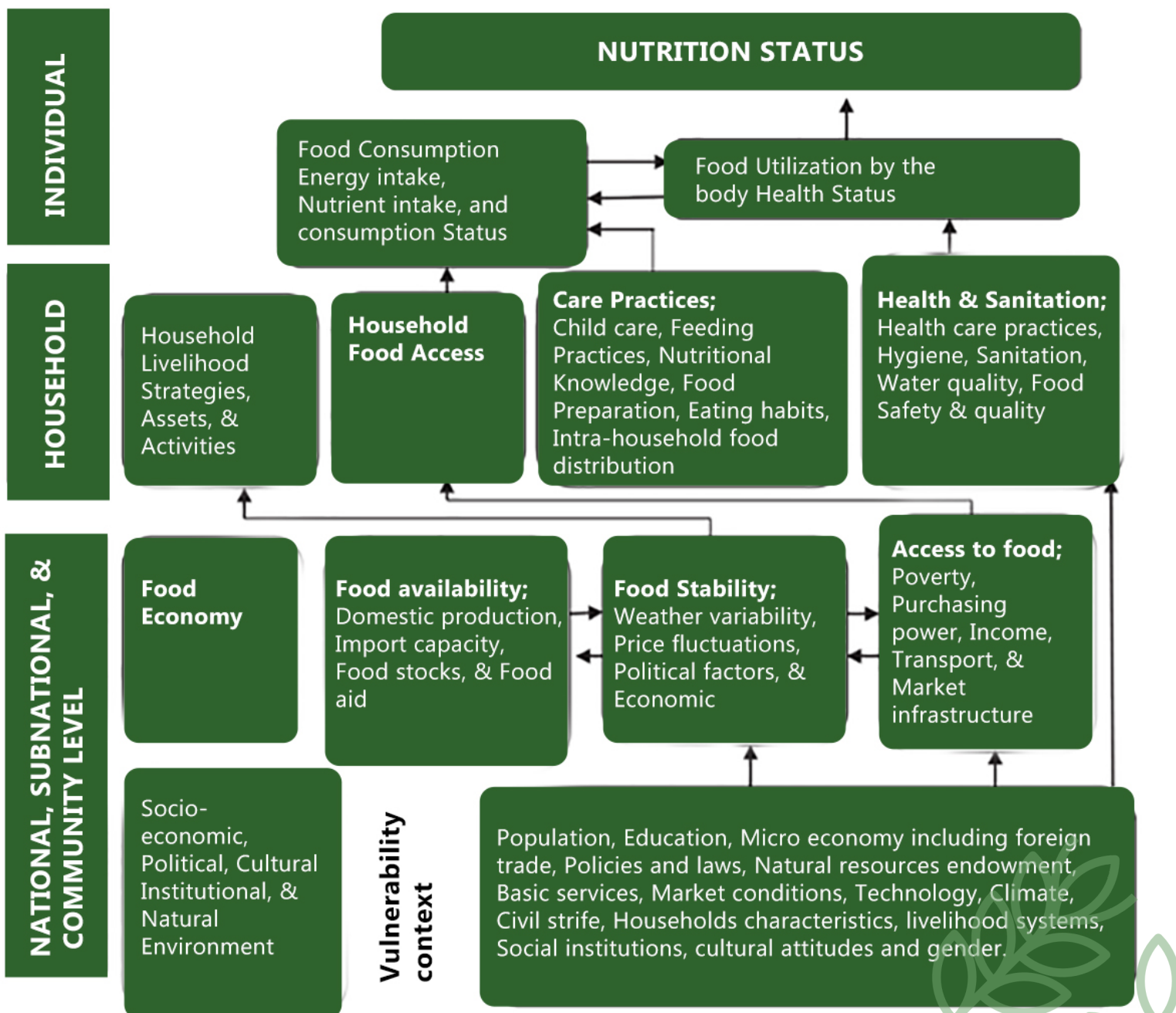




The Zero Hunger Challenge has received extensive backing from numerous member States and entities. The initiative encompasses the following objectives: achieving zero stunted children under the age of two, ensuring 100% access to adequate food throughout the year, establishing sustainability in all food systems, realizing a 100% increase in smallholder productivity and income, and striving for zero loss or waste of food.

In Indonesia, the Audit Board of Indonesia (BPK) plays a significant role in safeguarding and ensuring that the state finances are utilized to the fullest for the welfare of the people. All development activities in any field involve public funds, one aspect of which is Agriculture and Food Security. BPK fully supports the goals of the Sustainable Development Goals (SDGs), one of which focuses on SDG 2. In Indonesia, current projects related to SDGs is implemented through the Medium-Term Government Plan (RPJM) for the years 2020-2024. BPK audits ministries and institutions tasked with achieving these SDGs targets to support and ensure that state finances are used in line with the welfare of the people and harmony with global programs.

Figure The Food and Agricultural Organization-Vulnerability Information and Mapping Systems (FAO-FIVIMS) Framework





Food Security Theory

According to Chapter VII of Law Number 7 Year 1996 on Food, Indonesia has determined several steps to ensure food security. These steps include regulations, fosters, controls, and supervisions of food availability which shall be sufficient in quantity and quality, safe, nutritious, diverse, evenly distributed, and affordable for citizens' purchasing power. The program contributes to the national food reserves. However, many cases in developing countries reveal that the availability of food does not necessarily transform into food security (Simelane and Worth 2020).

The absence of food scarcity shall be unavoidable as well as its accessibility, acceptance, and sustainability for inhabitants. The attainment of food security is contingent upon the universal availability of sufficient, uncontaminated, and nourishing food that meets the dietary requirements and preferences of individuals, so enabling them to lead an active and healthy lifestyle. The term food in this article will exclude water regardless its essentiality in daily life as prior research does.

Methodology

This is a qualitative study that employs semi-structured interviews and content analysis. To supplement and persuade researchers concerning the content analysis that has been performed, interviews were conducted. Interviewees consist of BPK auditors who participated in the audit of sustainable agriculture and food security.

The research primarily employs content analysis as its methodology. Aiming to provide knowledge, new insights, empirical presentations, and practical guides to behavior, content analysis is a research technique that derives valid and reproducible conclusions from data regarding the context (Elo & Kyngas, 2008). White & Marsh (2006) and Bengtsson (2016) discovered that content analysis applies to all categories of texts, irrespective of their origin. Detailed interviews, focus group interviews, individual written questions, and open-ended inquiries such as surveys and situational observations, images, and films do not require adherence to any set of guidelines. The materials utilized in the content analysis comprise audit reports and a comprehensive summary of semester audit outcomes sourced from the Ministry of Agriculture.

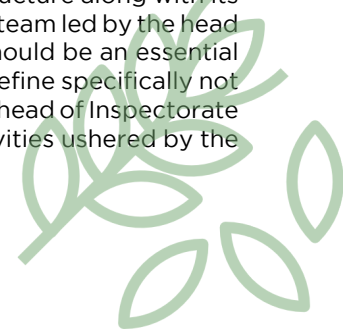
Effectiveness of Food Security Research Program

Over the years, food security has become part of Indonesia's National Strategic Projects (PSN), enshrined in the five-year development planning, not to mention for 2010-2014. BPK has audited various activities within the stream of food security programs and investigated the research scheme carried out by the Biological and Biotechnology Research Center, Indonesian Institute of Sciences (LIPI). BPK concluded that the outcome was ineffective in supporting the food security plan. Despite their efforts to initiate internal and external collaborations, several issues were still encountered.

These findings include the absence of full-fledged SOP, inadequate necessary infrastructures, inconformity with the plans initiated, unreliable output, and uncertain quality. SOP of planning, execution, and evaluation are undoubtedly paramount tools for any program to operate. BPK found that such procedures were determined in 2014, which makes it four years behind. The delay caused a lack of guidance throughout the five-year agenda. Thus, the aimed objectives of the research program cannot be achieved.

Moreover, the institution has insufficient greenhouse infrastructure, lack of advanced technology and available rooms to facilitate research studies. These lacking create a barrier towards their goal. Apart from a shortfall in infrastructure, the panel's proposed research proposals shall also be revised. Incompetent planning causes slack and unsustainable output targets. The last problem experienced was the unavailability of research quality assurance. The external party, i.e. Inspectorate, needed to thoroughly examine the effectiveness of planning, execution, and evaluation and its conformity to related procedures.

Due to these concerns, BPK recommends that the chief of LIPI instruct the principal secretary to arrange and enact a research procedure or guidance that holds a quality management system for their primary activities. Furthermore, LIPI's head of the planning and finance bureau should compose an analysis of essential infrastructure along with its budget and gradual allocation plans. Regarding research suggestions, BPK proposed forming a team led by the head of Puslit to assess research and evaluation activities' planning. As mentioned by BPK, there should be an essential indicator manual, program performance indicator, and activity performance indicator, which define specifically not only critical definition but also formulation technique and data location. Lastly, BPK advised the head of Inspectorate to organize and issue an SOP of inspection on the essence of research programs and any activities ushered by the panel.





Program to Boost Horticultural Product Production, Processing, and Marketing

BPK audited the efficacy of the Ministry of Agriculture's program to increase the production, processing, and marketing of horticultural commodities from 2014 to 2017. West Nusa Tenggara, East Nusa Tenggara, Java, Sulawesi, Lampung, and East Kalimantan were all subject to audits. The objective of the audit is to assess the program's efficacy in encouraging price stability and diminishing Indonesian imports of horticultural products. In the coming years, lower import reliance and price stability will contribute to an increase in Indonesia's food security.

The auditing findings of BPK reveal that the program is not entirely effective now. This conclusion is predicated, in part, on several audit findings. First, the planning for producing chilies and onions at the General Directorate of Horticulture needs to be improved. The Strategic Plan of the Directorate General of Horticulture lacks substantiating data and information that are reliable and valid, which has compromised the determination of production target figures. Consequently, activities conducted at the directorate might not resolve national issues about chili, onion, and fruit commodities, neglected objectives of national planning, or failure to align the execution of activities with the intended completion of those objectives.

Second, the management of planting patterns to ensure production stability for onions and chilies is suboptimal. From 2014-2016, they presented a variety of chilies and onions. The Directorate General of Horticulture's Strategic Plan specifies that most production objectives have been met; however, revisions and a forecast for national requirements remain unstable throughout the year. To preserve production stability, the policy for managing cultivation patterns that the Directorate General of Horticulture devised has failed. It is therefore unfeasible to implement in the regions. Therefore, the presence of production instability gives rise to the possibility of price instability. This occurs due to the absence of a legally binding policy governing cropping pattern management between the Ministries of Agriculture and regional work divisions, considering monthly demand data for each commodity.

Last, the efforts of the Directorate General Horticulture to promote local fruit development have proven insufficient in supplanting the demand for imported fruit. Indonesia imports a considerable amount of fruit. Orange imports occur during the harvest season, which is improper and should be prohibited. Hence, when viewed through the lens of diversification, the success of government programs is neither measurable nor sustainable. This occurs because the policy of the Director General of Horticulture regarding the provision of fruit import recommendations disregards national and regional requirements.

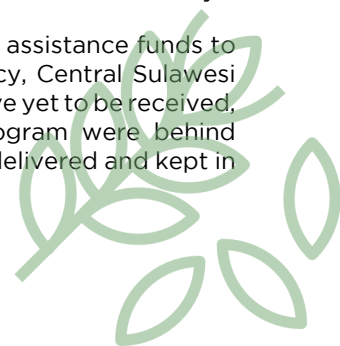
Considering the findings above, BPK advises the Minister of Agriculture to develop a planning standard operating procedure (SOP) for creating activities and programs that are more measurable and targeted in their execution. The Ministry of Agriculture must cooperate with the Ministry of Trade and the Directorate General of Customs and Excise to regulate fruit imports by the domestic fruit harvest schedule.

Securing National Production for Food Autonomy and Diversification

Indonesia's National Strategic Projects (PSN) for 2015 to 2019 also prioritizes food sovereignty as one of its mandatory agendas. It is believed to be a state of being capable of setting and fulfilling national needs on food. To strengthen national production capacity, especially in five critical commodities nationally, i.e., rice, corn, soybeans, sugar and meat. The Ministry of Agriculture has set seven major strategies, namely increasing land availability and utilization; improvement of agricultural infrastructure and facilities; development and expansion of seed/seedling logistics; strengthening agricultural institutions; development and strengthening of agricultural financing; development and strengthening of bioindustry and bioenergy; and strengthening agricultural product market networks.

The audit covers financial statements from 2014 to semester 1, 2016, at the Directorate General of Agricultural Infrastructure and Facilities (PSP) of the Ministry of Agriculture. The primary subject faced by the institution in agricultural development was a downfall in the quantity and quality of agricultural infrastructure and facilities. Hence, PSP issued several policies in the emergence of agricultural infrastructure in food crops, horticulture, plantations and livestock supported by the management of land, irrigation water, financing, fertilizers, pesticides and machinery.

BPK reported twelve findings, which revealed 21 issues amounted to Rp3 billion. Government assistance funds to develop outstanding varieties of rice in order to raise rice production in 2015 in Sigi Regency, Central Sulawesi Province, by Rp1.047 billion, was used to cover personal expenses. Revenues other than fines have yet to be received, approximately Rp811.76 million. Seven projects in the rural agribusiness development program were behind schedule, totaling Rp700 million. Unconformity of social assistance fund's spending due to undelivered and kept in farmer groups' account around Rp445,1 million.





From these cases, BPK commands the Minister to compile data on the supply and demand of agricultural tools and machinery accurately as a guide for future allocation. Any damage and fines that need to be deposited to the treasury fund shall be handled accordingly. Instructions were also made to PSP to adhere to any necessary coaching to farmer groups to consider their responsibility in incomplete receivables. The head of the regency's or city's department of agriculture should consider fund allocation to accompany the farmer's groups in the creation of organic fertilizer.

Food Availability

BPK audit work is based on the BPK Strategic Plan 2016-2020, which refers to the National Medium-Term Development Plan (RPJMN) 2015-2019. The strategic plan stipulates examinations of government development programs in various dimensions, one of which is food availability. The examination of licensing, certification, and the implementation of sustainable oil palm plantation management and its compliance with international policies and regulations was carried out at the Ministry of Environment and Forestry, Ministry of Agriculture, and other institutions in several regions in Indonesia. BPK concluded that the management of oil palm plantations did not meet the criteria. Some palm oil companies need the Indonesian Sustainable Palm Oil (ISPO) system requirements, resulting in a reduction in the competitiveness of the national palm oil commodity for plantations that do not have ISPO certification. In response to these issues, the BPK recommends that the Minister of Agriculture instruct relevant parties to increase supervision of ISPO certification bodies and regulate the authority to impose sanctions by the ISPO commission.

On the other hand, the Ministry of Agriculture's Strategic Plan mentions that the 2015-2019 period will implement efforts for the protection, preservation, and expansion of agriculture. In the second semester of 2019, the BPK completed an examination report on the expansion of paddy fields, which contained 17 findings encompassing 21 issues. These issues consist of 9 weaknesses in the internal control system, 6 instances of non-compliance with legal provisions, and 6 issues related to economy, efficiency, and effectiveness (3E).

Management of Food Import System

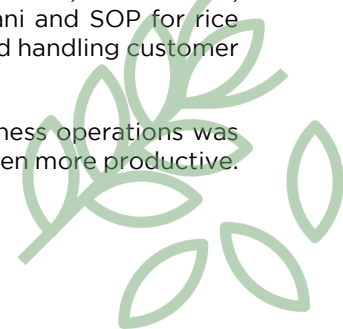
In 2017, BPK was overseen food import system by the Ministry of Trade Republic of Indonesia for 2015 – the first semester of 2017. The examination comprises policy and control evaluation in export-import, e.g. protection and safeguarding of national interests from the backlash of foreign trade. In contrast, foreign trade control encompasses licensing, standards, prohibitions, and restrictions. Specifically, the audit focused on the internal control system's effectiveness and its conformity to the law, e.g. holding limited meetings, determining import allocations, issuing import permits, reporting import realization as well as monitoring and evaluating imports for food commodities in the form of sugar, rice, beef and beef, soybeans and salt. The finding stipulated that the internal control system was ineffective yet non-compliant with the law.

The issues were pointed towards the nonexistence of an integrated information system and pertinent analysis that helps the institution estimate the suitable import figure, including the relation to price stabilization. The current application, i.e., Inatrade, did not automatically link to other institutions that provide applicable data on the outcome coordination and recommendation documentation. In addition, the Import and Export Facility Director has yet to initiate any mandatory evaluation. No sanctions were given to import companies that gave late import realization reports. Aside from internal systems, the entity shall respond to Rp11.04 billion of conformity findings. BPK urged the Ministry to abide by regulations on issuing import approval and maintaining Inatrade portal automation. The Ministry should sanction parties who acted unfavorably towards the institution's value. Hence, these predicaments will not be repeated.

Business Sector Activities Relating to Seed and Rice

A performance audit of the effectiveness of seed and rice business activities in 2017-first semester of 2018 was carried out at PT Pertani and related agencies in DKI Jakarta, East Java, South Sulawesi, West Java, Central Java, West Kalimantan, and East Kalimantan. An organizational structure has supported PT Pertani and SOP for rice receipt and production, SOP for branch office supplies, as well as SOP for customer service and handling customer complaints.

According to the BPK's audit findings, PT Pertani's management of its inbred rice seed business operations was remarkably effective. Active participation in the rice industry, on the other hand, could have been more productive. The ongoing challenges encountered at PT Pertani are outlined below.





The Cirebon Branch Office's management of sales and collection of receivables for subsidized inbred rice seed in 2017 was insufficient, despite exceptional efforts; the functions of distribution, invoicing, and payment receipting were multifaceted. In addition, officers failed to deposit seed income receipts from farmer organizations totaling Rp553.23 million into the PT Pertani's bank. Consequently, PT Pertani incurred financial losses totaling Rp553.23 million due to undeposited seed income from operational officers into the company's account. This transpired due to the Cirebon Branch Head's suboptimal oversight and control over the 2017 Seed Subsidy Program and Food Self-Sufficiency Upsus implementation.

The execution of the collaborative agreement between PT Pertani and PT PT Sakti regarding the manufacturing and distribution of premium Delman brand rice has not quite reached its full potential. Consequently, 230.50 tons of premium quality rice valued at Rp2.40 billion have remained unsold as a result of the subpar marketing performance of PT Sakti and the Sragen-specific rice milling unit, in addition to the disruption of cash inflow for outstanding receivables amounting to Rp9.10 billion that exceeded the deadline as per the directors' policy. This transpired due to the evaluation team's carelessness in conducting a feasibility study or test regarding the rice market's Rp9.10 billion absorption. PT Sakti's appointed distributor failed to make timely payments on receivables.

Improvement of Food Resilience

Performance examination of efforts to enhance food resilience has been conducted on a specific examination object, namely the evaluation of the effectiveness of improving food resilience in the aspect of food availability within the scope of the Provincial Government of Banten. The efforts made include various activities carried out by the Provincial Agriculture Office of Banten, such as facilitation, dissemination, and utilization of food research results. One of the implemented activities is the farming demonstration (demfarm) and plot demonstration (demplot) for rice and corn crops.

In ensuring adequate, safe, quality, and nutritious food consumption, the Government has enacted Regional Regulation Number 2 of 2017 concerning Food Management, which encompasses regulations related to the application of diverse, balanced, and safe food consumption patterns (B2SA).

The examination results conclude that there are significant issues that, if not promptly addressed, can affect the effectiveness of improving food resilience, especially in the aspect of food availability. Therefore, BPK recommends that the Provincial Government of Banten develop plans for research and development of agricultural technology. Additionally, BPK also recommends that the Government formulate plans and policies related to the extensification and intensification of food agricultural land.

Food Production Security

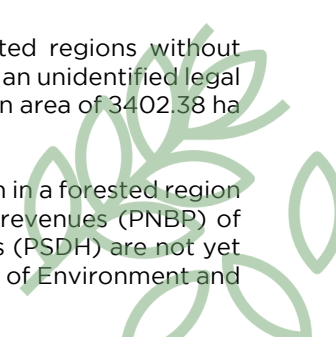
The examination of rice production security in supporting food self-sufficiency for the year 2018 - Semester 1 of 2019 was conducted in the Regency Governments of Pidie Jaya, Southwest Aceh, and North Aceh. BPK examination results concluded that there are issues that will affect the effectiveness of regional governments in improving rice production security to support food self-sufficiency, including distributors and retailers not fulfilling their obligations to ensure the availability of subsidized fertilizer stocks, lack of documentation related to the realization of subsidized fertilizer utilization by each farmer group, the condition of irrigation networks is not fully adequate, there is no up-to-date network data, and there is no standard operating procedure (SOP) as a guide in the implementation of borrowing/rental of agricultural machinery.

Management and Oversight of Forest Area Utilization

Forests comprise biological resources and are an integral component of an ecosystem. BPK audited the Ministry of Environment and Forestry to preserve Indonesia's forests' functionality by recommending measures to restrict or prevent further deforestation. This audit aims to determine whether governance by statutory regulations has effectively regulated and monitored the utilization of forest areas or if it has benefited forest areas in their lack of forestry permit sanctions.

Several noteworthy findings emerged from BPK's audit. Predominantly occurring in forested regions without forestry permits, mining operations encompassing an area of 841.79 thousand hectares involve an unidentified legal entity. In addition, another company cleared forest areas beyond the scope of permission on an area of 3402.38 ha within a major corporation's mining business permit area.

Secondly, as of 2020, the legal entity associated with a 2.90 million hectares oil palm plantation in a forested region without a forestry permit has yet to be determined. This affects prospective non-tax state revenues (PNBP) of Rp20.22 trillion and \$6.15 billion from reforestation funds (DR) and forest resource provisions (PSDH) are not yet billable to business entities. If the legal subject of plantation activities is unknown, the Ministry of Environment and Forestry can also not administer administrative sanctions.





Additional operations, including establishments, agricultural zones, open land, rice fields, reservoirs, and production forests devoid of forestry permits, encompass conservation forest areas with a total area of 3866.76 thousand ha and protected forest areas with an area of 33.74 million ha. The absence of legal status regarding this activity is well-documented. This circumstance arises from the Ministry of Environment and Forestry's inability to conduct additional operations within forested regions without forestry permits.

BPK suggests that the Ministry of Environment and Forestry collaborate with law enforcement officials, process the resolution, and identify legal subjects for palm oil plantations, mining, and other activities in forest areas without forestry permits. By consulting relevant regulations, the Ministry of Environment and Forestry may also develop a strategic plan to facilitate the cessation of mining operations, oil palm plantation activities, and other prohibited activities in forest regions.

Conclusion

The examination sheds light on how the Audit Board of the Republic of Indonesia (BPK), functioning as an external audit institution in Indonesia, has played a crucial role in advancing the objectives of SDG 2 for the past 13 years, particularly in food security. By meticulously scrutinizing government policies and expenditures, BPK has actively contributed to fostering sustainable practices and ensuring effective strategies for achieving food security goals in the country. Following a thorough examination of policies and expenditures, BPK has also contributed to promoting and implementing sustainable agricultural practices, aligning with the broader goals of environmental conservation and responsible resource management.

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