

REPUBLIC OF INDONESIA

**DATA COLLECTION SURVEY
ON
PROMOTION FOR INTRODUCTION
OF
AGRICULTURE INSURANCE IN INDONESIA**

FINAL REPORT

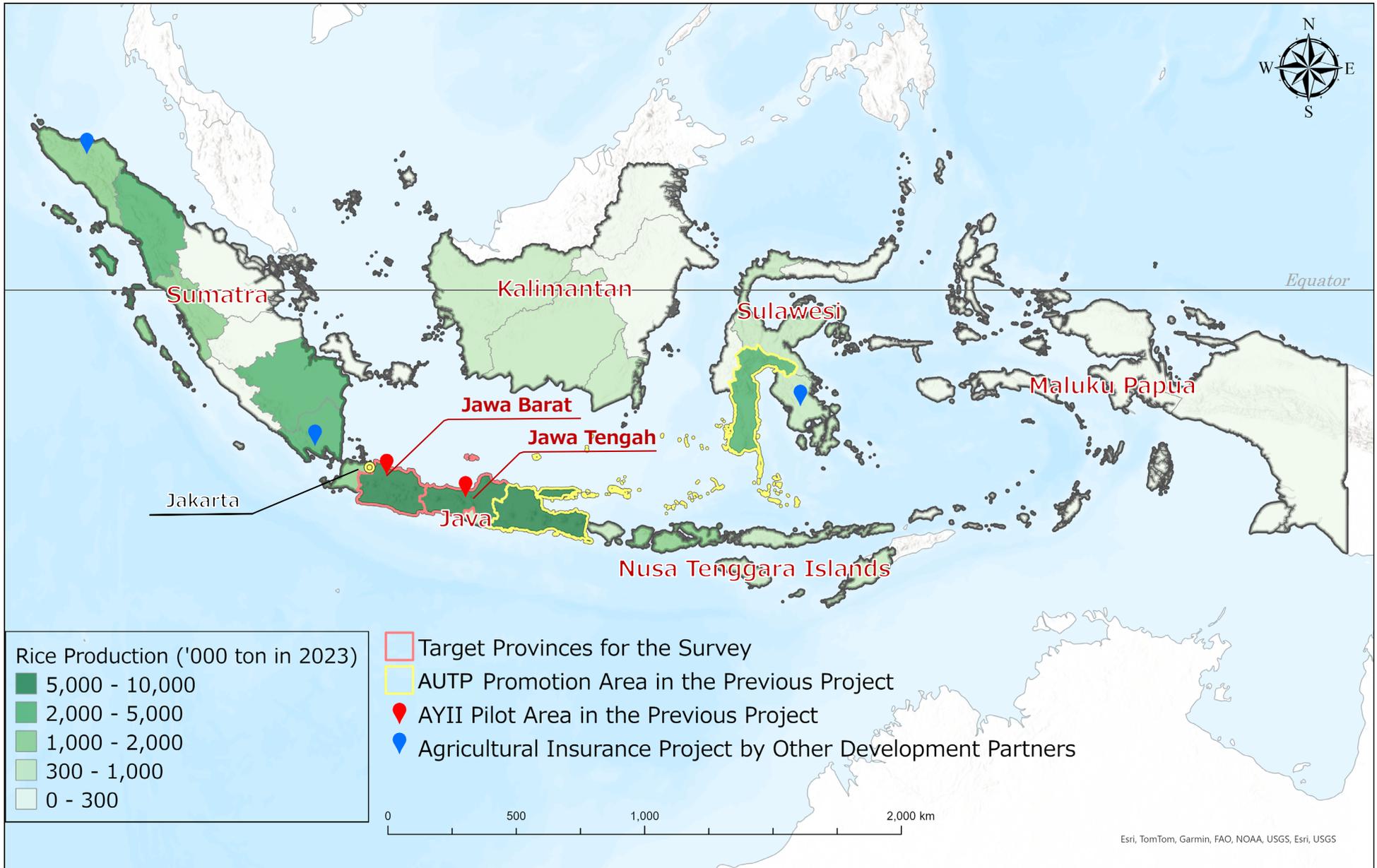
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Japan International Cooperation Agency (JICA)

Sanyu Consultants Inc. (SCI)

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LOCATION MAP: Data Collection Survey on Promotion for Introduction of Agriculture Insurance in Indonesia



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Abbreviations

| Abbreviation | English/ Bahasa |
|--------------|---|
| AAUI | Asosiasi Asuransi Umum Indonesia (Indonesian General Insurance Association) |
| AIC | Agriculture Insurance Company (India) |
| APR | Actuarial Premium Rate |
| AUTP | Asuransi Usaha Tani Padi |
| AYI | Area Yield Index |
| BAAC | Bank for Agriculture and Agricultural Cooperatives (Thailand) |
| BAPPENAS | Badan Perencanaan Pembangunan Nasional (Ministry of National Development Planning) |
| BBDLP | Balai Besar Penelitian dan Pengembangan Sumberdaya Lahan Pertanian (Center for Agricultural Land Resources Research and Development) |
| BBPP | Balai Besar Pelatihan Pertanian (Agricultural Training Center) |
| BBPSDMP | Balai Besar Pelatihan Sumber Daya Manusia Pertanian (Center for Agricultural Human Resource Development Training) |
| BBSIP SDLP | Balai Besar Pengujian Standar Instrumen Sumberdaya Lahan Pertanian (Center for Agricultural Instrument Standardization for Agricultural Land Resources) |
| BKSDA | Direktorat Jendral Bidang Kemaritiman dan Sumber Daya Alam (Directorate General of Maritime Affairs and Natural Resources) |
| BMKG | Badan Meteorologi, Klimatologi dan Geofisika (Agency for Meteorology Climatology and Geophysics) |
| B POM | Badan Pengawas Obat dan Makanan (Indonesian Food and Drug Authority) |
| BPS | Badan Pusat Statistik (Statistics Indonesia) |
| BRIN | Badan Riset dan Inovasi Nasional (National Research and Innovation Agency) |
| C/P | Counterpart |
| CCE | Crop Cutting Experiment |
| DJPPR | Ditjen Pengelolaan Pembiayaan dan Resiko (Directorate General of Financing and Risk Management) |
| DJPSP | Direktorat Jendral Prasana, dan Sarana Pertanian (Directorate General of Agricultural Infrastructure and Facilities) |
| DOAE | Department of Agricultural Extension (Thailand) |
| DPRKN | Direktorat Pengelolaan Resiko Keuangan Negara (Directorate of State Financial Risk Management) |
| DRF | Disaster Relief Fund (Thailand) |
| IDR | Indonesian Rupia |
| IFC | International Finance Corporation |
| IFC | International Finance Corporation |
| IKNB | Industri Keuangan Non-bank Indonesia Stabil dan Kuat (Directorate General of Non-Bank Financial Industry Supervision) |
| INR | Indian Rupees |
| IPB | Institut Pertanian Bogor (IPB University) |

| Abbreviation | English/ Bahasa |
|--------------------|---|
| ISF | InsuResilience Solutions Fund |
| ITB | Institut Teknologi Bandung (ITB University) |
| JAIF | Japan ASEAN Integration Fund |
| JASINDO | PT Asuransi Jasa Indonesia |
| JASINDO Agri | Agricultural Insurance Division |
| JCC | Joint Coordination Committee |
| JICA | Japan International Cooperation Agency |
| KSA | Kerangka Sampling Area (Area Sampling Framework, for CCE) |
| KUR | Kredit Usaha Rakyat (People's Business Credit) |
| LAPAN | Lembaga Penerbangan dan Antariksa Nasional (National Institute of Aeronautics and Space) |
| MOA | Ministry of Agriculture |
| MOF | Ministry of Finance |
| MSMEs | Micro, Small, and Medium-sized Enterprises |
| NAIS | National Agriculture Insurance Scheme |
| OJK | Otoritas Jasa Keuangan (Financial Services Authority) |
| PCIC | Philippine Crop Insurance Corporation |
| PCIS | Pilot Crop Insurance Scheme |
| PDM | Project Design Matrix |
| PH | Bidang Pangan dan Hortikultura (Food Crops and Horticulture Division) |
| PHP | Petugas Perlindungan Tanaman Pangan dan Hortikultura (Food Crops and Horticulture Protection Officer) |
| PHP | Philippines Peso |
| PMFBY | Pradhan Mantri Fasal Bima Yojana (India) |
| POKTAN | Kelompok tani (Farmers Group) |
| POPT | Petugas Pengendali Organisme Pengganggu Tumbuhan - Petugas Perlindungan Tanaman Pangan dan Hortikultura (Pest and diseases officer) |
| PP (BAPPENAS) | Direktorat Pangan dan Pertanian (Directorate of Food and Agriculture) |
| PP (MOA) | Direktorat Pembiayaan Pertanian (Directorate of Agricultural Financing) |
| PP (MOA-Kabupaten) | Bidang Penyuluh Pertanian (Agricultural Extension Division) |
| PPL | Petugas Penyuluh Lapangan (Field Extension Staff) |
| PSP | Bidang Prasana dan Sarana Pertanian (Agricultural Infrastructure and Facilities Division) |
| PUSLATAN | Pusat Pelatihan Pertanian dan Perdesaan Swadaya (Center for Self-Reliant Agricultural and Rural Training) |

| Abbreviation | English/ Bahasa |
|--------------|---|
| R/D | Record of Discussion |
| RENJA-KL | Rencana Kerja Kementerian/Lembaga (Work Plan of Ministries/Agencies, 1 year) |
| RENSTRA-KL | Rencana Strategis Kementerian/Lembaga (Strategic Plan of Ministries/Agencies, 5 years) |
| RPJMN | Rencana Pembangunan Jangka Menengah Nasional (National Medium Term Development Plan, 5 years) |
| RPJPN | Rencana Pembangunan Jangka Panjang Nasional (National Long Term Development Plan, 20 years) |
| RSBSA | Registry System for Basic Sectors in Agriculture (Philippines) |
| RWBCIS | Restructured Weather Based Crop Insurance Scheme (India) |
| SAR | Synthetic Aperture Rader |
| SATREPS (| Science and Technology Research Partnership for Sustainable Development |
| SEADRIF | Southeast Asia Disaster Risk Insurance Facility |
| SIAP | Sistem Informasi Asuransi Pertanian (Agricultural Insurance Information System) |
| TGIA | Thai General Insurance Association (Thailand) |
| THB | Thai Baht |
| TOT | Training of Trainer |
| UPTG | Unit Pelaksana Teknis Daerah (Sub-district/Kecamatan Technical Implementation Unit) |
| USAID | United States Agency for International Development |

CHAPTER 1 OUTLINE OF THE SURVEY

1.1 Background of the Survey

The Indonesian government has positioned food security as a key issue in the National Long-Term Development Plan (RPJPN 2005-2025). As part of its efforts to address this important issue, the government enacted the Law on Farmer Protection and Empowerment¹ in 2013, and has been promoting the introduction of agricultural insurance of indemnity type (AUTP)² for rice cultivation.

However, the extension of agricultural insurance in the country is still limited, with the highest penetration rate³ (insured area/rice harvested area) ever recorded at 9% (approximately 1 million hectares in 2020) and only 3% (approximately 353,000 hectares) in the latest year, 2022. Under this circumstances, JICA's technical cooperation project called “The Project of Capacity Development for the Implementation of Agricultural Insurance” was implemented from 2017 to 2023.

Under the project, human resource development and a pilot project for a new agricultural insurance product, Area-Yield Index Insurance (AYII)⁴, were implemented to promote the extension of agricultural insurance. Through this project, the following four points were identified as challenges in the dissemination of agricultural insurance:

- 1) Improve coordination and collaboration among relevant agencies (government and private sector),
- 2) Provide insurance products based on farmers' needs,
- 3) Improve understanding and awareness of agricultural insurance among farmers and government officials, and
- 4) Establish an efficient agricultural insurance extension system.

Although food security is a priority for the new Indonesian government, inaugurated in October 2024, issues, implementation policies, and future direction about agricultural insurance in Indonesia still remain unclear. To address this situation, the “Data Collection Survey on Promotion for Introduction of Agricultural Insurance in Indonesia” was conducted. The primary objectives are to assess the current state of agricultural insurance in Indonesia and to identify key issues that need to be considered for future cooperation.

Through this Survey, it is expected to 1) develop a common understanding of the vision and direction of agricultural insurance and 2) identify key challenges and organizations responsible for addressing the key challenges. In addition, the Survey requires active discussions and consensus-building among relevant organizations to ensure ownership and commitment to the promotion of agricultural insurance in Indonesia.

1.2 Purpose the Survey

The objective of this Survey is to explore the possibility and direction of future JICA cooperation (technical cooperation in the short term and probably Yen loans in the medium to long term) regarding food security strategies and agricultural insurance in the agricultural sector in Indonesia.

This Survey focuses on the current status and issues of agricultural insurance, one of the social systems to ensure stable income for small-scale farmers, and will also identify the need for and future challenges

¹ Law on Farmer Protection and Empowerment (Law No. 19, 2013)

² An agricultural insurance compensating actual losses (AUTP: Asuransi Usaha Tani Padi): Agricultural insurance covering rice cultivation that pays claims based on actual losses.

³ The insured area is based on data from JASINDO, the insurance underwriter, and the harvested area is based on data from the BPS. The insured area in 2023 is approximately 306,000 ha, but the harvested area is not available at this time.

⁴ An Area-Yield Index Insurance (AYII): Agricultural insurance based on crop yield per unit area which pays out if the actual yield falls below a pre-determined benchmark yield.

in promoting agricultural insurance in Indonesia.

1.3 The Survey Area and Scope

This Survey covered all of Indonesia (see the map at the beginning of the report). In particular, in the pilot provinces of the agricultural insurance project—West Java and Central Java—the Survey Team assessed the outcomes of AYII implementation and evaluated the level of understanding of agricultural insurance among insured farmers and agricultural extension officers. Additionally, the Survey Team conducted interviews to examine the initiatives of private insurance companies and other donors involved in agricultural insurance, as well as the application of new technologies in the sector.

1.4 Relevant Organizations

The relevant Indonesian ministries and agencies involved in this Survey are as follows (see Figure 1.4.1); National Planning and Development Agency (BAPPENAS), Ministry of Agriculture (MOA), Provincial Agricultural Office, District (Kabupaten) Agricultural Office, and Sub-district (Kecamatan) level office for extension which is under the Kabupaten Office, and Ministry of Finance (MOF), Financial Services Agency (OJK), JASINDO (a national insurance company), Statistics Indonesia (BPS), and international organizations active in the agricultural insurance sector, including but not limited to GIZ (Details of each organization are described in Sub-chapter 3.3.2).

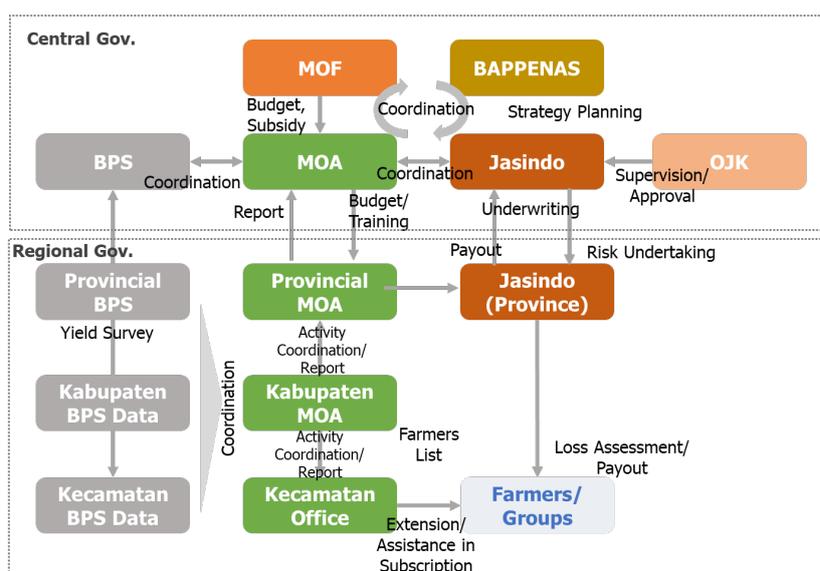


Figure 1.4.1 Institutional Arrangement of Agri. Insurance Implementation
Source: JICA Survey Team

1.5 Survey Schedule

This Survey was conducted from early September 2024 to the end of February 2025. During this period, the Survey Team carried out interviews with relevant organizations, field surveys, and workshops with key stakeholders. Through discussions and a total of three workshops, the Survey Team identified key issues, explored the future direction of agricultural insurance in Indonesia, and fostered a shared understanding for the implementation of a new agricultural insurance project.

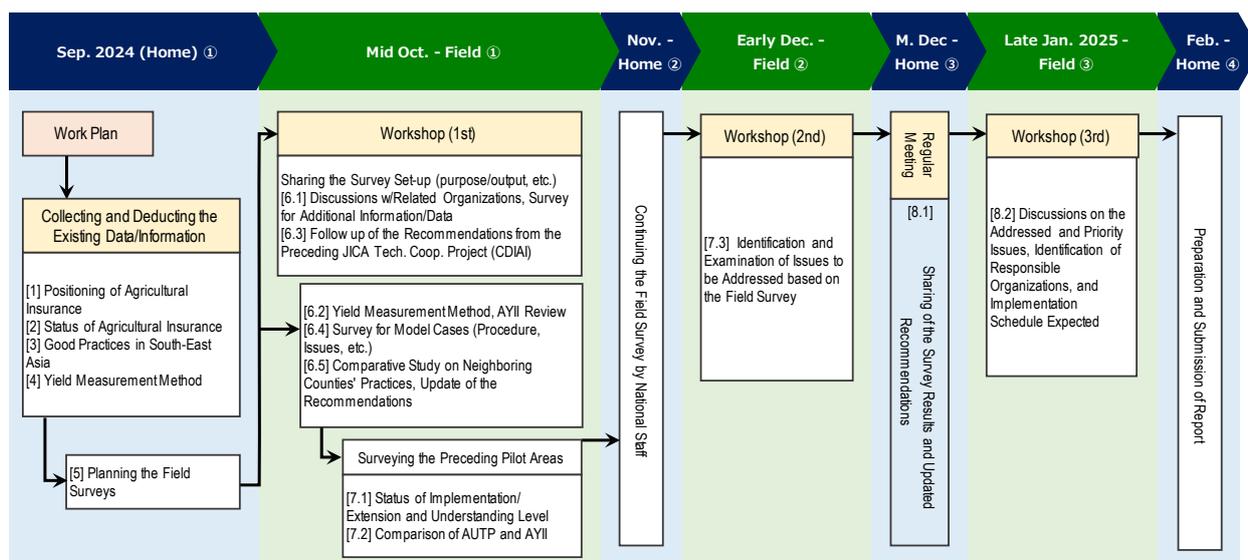


Figure 1.5.1 Survey Workflow

1.6 Structure of the Report

This Report presents the findings from field surveys, workshops, interviews, and literature reviews conducted between September 2024 and February 2025. It consists of four chapters. Following this introduction, Chapter 2 provides an analysis of Indonesia's social and economic landscape within the ASEAN region using key economic indicators. It also offers an overview of Indonesia's agricultural sector, based on agricultural statistics, and discusses the characteristics of agricultural insurance and its position within the global market.

Chapter 3 focuses on agricultural insurance in Indonesia, covering its role in various national policies, the state of the non-life insurance market, and the implementation status of AOTP (Asuransi Usaha Tani Padi). It also presents survey findings on awareness and understanding of agricultural insurance in rural areas and examines private sector initiatives, including the adoption of remote sensing technology. Additionally, this chapter compares Indonesia's agricultural insurance system with those of Thailand and the Philippines, highlighting key lessons that can inform future improvements.

The final chapter, Chapter 4, summarizes the outcomes of the three workshops conducted during the study. Drawing on insights from Chapters 1 to 3 and workshop discussions, it identifies key challenges in promoting agricultural insurance in Indonesia and proposes recommendations to address them. These recommendations are further structured into specific action points for the Indonesian government. The chapter concludes by outlining a strategic direction for advancing agricultural insurance and presents the direction of JICA's cooperation to support this initiative.

Table 2.1.2 Indonesia's GDP Share by Industry and Employment Rate by Industry (15 years old +)

| Industry | GDP Share (%) | Employment (%) | Remarks |
|---|---------------|----------------|--------------------------------|
| Manufacturing | 18.67 | 13.83 | Biggest industry in GDP |
| Wholesale, retail, repair of motor vehicle, motorcycles | 12.94 | 18.99 | |
| Agriculture, forestry and fishing | 12.53 | 28.21 | Biggest employ't sector |
| Mining and quarrying | 10.52 | 1.19 | |
| Construction | 9.92 | 6.62 | |
| Transportation and storage | 5.89 | 4.40 | |
| Information and communication | 4.23 | 0.71 | |
| Finance and insurance | 4.16 | 1.17 | |
| Public administ'n, defense, compulsory social security | 2.95 | 3.49 | |
| Education | 2.79 | 4.95 | |
| Accommodation and food service | 2.52 | 7.72 | |
| Others | 12.88 | 8.72 | |

Source: [Indonesia: employment numbers by sector 2023 | Statista](#), [Indonesia: GDP share by sector 2023 | Statista](#)

The above table shows that Indonesia is a country focused on agriculture. Rice is the nation's staple food, and both paddy and upland rice together provide 96% of all carbohydrate calories, and about 90% of calories from paddy rice alone (only in Papua Province do people consume more calories from potatoes, which provide about 40% of carbohydrate calories)⁵. In other words, paddy rice is the first priority in terms of food security for the nation's staple food.

In Indonesia, efforts have been made to increase rice productivity in the 1960s, and as a result of the introduction of “green revolution,” self-sufficiency in rice production was achieved in 1984. However, by the late 1980s, with the “green revolution” already spread to many areas of the country and the completion of many large irrigation systems, rice production could no longer keep up with the demand due mainly to the population growth, and rice imports increased at the end of the same decade⁶. Although rice supply and demand have now improved, full self-sufficiency has not been achieved (see Chapter 3.1 for details).

2.1.2 Social and Economic Situation in Indonesia and Comparison with ASEAN Countries

Table 2.1.3 summarizes social and economic indicators for Indonesia and other ASEAN countries, Timor-Leste, the rest of the world, Japan, and East Asia and the Pacific (Source: World Bank; HDI (Human Development Index): UNDP, different from those shown in Table 2.1.2. Though much of the 2022 data are used, some of the missing data are replaced by 2021 data). The HDI is a statistical composite index of life expectancy, education, and per capita income indicators to measure achievements in key dimensions of human development. Human Development Reports are released annually by UNDP. Table 2.1.3 lists a total of 33 indicators, of which the 12 main indicators are shown separately in Figures 2.1.1 through 2.1.12. These 12 indicators are summarized below:

- ✓ Figure 2.1.1 shows a comparison of the area of each country, organized by land surface area. It can be seen that Indonesia has a very large land area compared to other ASEAN countries, with an area of 1.9 million km², which is three to four times larger than Myanmar (677,000 km²), the next largest country, and Thailand (513 km²), the third largest country.
- ✓ Indonesia has a very large population (see Figure 2.1.2) along with a large land area. It already has a population of nearly 276 million. The next largest countries are Japan, the Philippines, and Vietnam, with approximately 100-120 million people, but compared to these countries, Indonesia has more than twice as many people.
- ✓ On the other hand, looking at population density (see Figure 2.1.3), Singapore, a financial country,

⁵ Project on Formulation of Irrigation Development and Management Strategy for Food Security in the Republic of Indonesia, JICA, JICA, 2015, see Chapter 3

⁶ Project on Formulation of Irrigation Development and Management Strategy for Food Security in the Republic of Indonesia, JICA, 2015, see Chapter 7.

as well as the Philippines, Vietnam, and Japan, have high population densities, but compared to the ASEAN countries including these countries, the population density can be said moderate at 144 persons/km².

- ✓ The population growth rate shown in Figure 2.1.4 indicates that Indonesia has a population growth rate of 0.64% per year, which is lower than other ASEAN countries. Except for Japan, whose population has already begun to decline (-0.44%), Thailand's population growth rate of 0.64% is the next lowest at 0.13%. The low population growth rate is said to be due to economic growth, improvement in women's education level⁷, extension of family planning⁸, and urbanization⁹.
- ✓ The GDP shown in Figure 2.1.5, together with Indonesia's large population, is considerably larger than that of other ASEAN countries. In fact, Indonesia's GDP is about three times higher at \$1.3 trillion as compared to those of Singapore, Thailand, the Philippines, Vietnam, Malaysia with 400 billion to 500 billion \$.
- ✓ Figure 2.1.6 shows that GDP per capita is very high for Singapore, Brunei, and Japan, and when compared to other ASEAN countries, Indonesia's GDP per capita is only 4,788\$/person behind Malaysia (11,993\$/person) and Thailand (6,913\$/person).
- ✓ Figure 2.1.7 shows the GDP composition of Indonesia compared to other countries. The percentages of primary, secondary, and tertiary industries in Indonesia are 12.4%, 41.43%, and 46.17%, respectively. Although the share of the primary sector, which includes agriculture, is lower than in Myanmar (22%), Laos (15%), and Cambodia (22%), it is still 12.4% in Indonesia, which is slightly higher than in the Philippines and Thailand, which have similar GDP per capita. However, Indonesia still accounts for 12.4% of GDP per capita.
- ✓ Looking at GDP growth rates (see Figure 2.1.8), Indonesia shows a fairly high growth rate of 5.31% per year. However, this is not as high as the fast-growing ASEAN countries such as the Philippines, Vietnam, and Malaysia, which have annual growth rates in excess of 7-8%, yet in any case, the GDP growth rate is quite high.
- ✓ The HDI shown in Figure 2.1.9 indicates that Indonesia is almost same with the Philippines (0.71) and Vietnam (0.73), that is 0.71. Although not as high as Singapore (0.95), Thailand (0.80), Brunei (0.82), and Malaysia (0.81), Indonesia is relatively high among the ASEAN countries.
- ✓ Figure 2.1.10 shows life expectancy. Indonesia's life expectancy is 68 years, which is the second lowest after Myanmar's 67 years. The reason for the low life expectancy, despite the not low economic indicators and under-five mortality rate, could be that Indonesia is a vast country with probably the limited access to medical care, especially in rural areas, and that many diseases are caused by lifestyle-related diseases, including smoking^{10 11}.
- ✓ Figure 2.1.11 compares the under-five mortality rates for Indonesia and other countries. Indonesia's rate is 21 per 1,000 live births. This is about the same as Vietnam's rate of 20 per 1,000 live births, which is about middle among the ASEAN countries.
- ✓ Figure 2.1.12 shows the number of births per woman per lifetime, comparing Indonesia and other countries. The figure for Indonesia is 2.15, which seems slightly higher than the average of other ASEAN countries. For example, Indonesia comes after the Timor-Leste (3.05), the Philippines

⁷ [International Journal for Equity in Health](#), J.ofPopulationProblems) 78—2 (2022.6) pp.293-309

⁸ [United Nations ESCAP](#), <https://www.nusantara.fan/reasons-for-indonesias-large-population/>

⁹ World Economic Forum

¹⁰ [Why do some countries do better or worse in life expectancy relative to income? An analysis of Brazil, Ethiopia, and the United States of America | International Journal for Equity in Health | Full Text \(biomedcentral.com\)](#)

¹¹ [Comparing Life Expectancy Determinants Between Indonesia and Oman from 1980 to 2020 | Journal of Cross-Cultural Gerontology \(springer.com\)](#), accessed on Sep. 26, 2024

(2.73), Laos (2.45) and Cambodia (2.32).

Table 2.1.3 Social and Economic Indicators for Indonesia and ASEAN Countries (2022, partly 2011)

| Indicators | Indonesia | Cambodia | Singapore | Thailand | Philippines | Brunei D. | Viet Nam |
|--|-----------|----------|-----------|-------------|-------------|-----------|---------------------|
| Surface area (1000 sq. km), data for 2021 | 1,917 | 181 | 1 | 513 | 300 | 6 | 331 |
| Forest area (1000 sq. km), data for 2021 | 915.28 | 79.13 | 0.15 | 198.37 | 72.23 | 3.80 | 147.19 |
| Forest area share against surface area (%) | 47.75 | 43.71 | 21.14 | 38.66 | 24.08 | 65.86 | 44.42 |
| Population, 1000 total | 275,501 | 16,768 | 5,637 | 71,697 | 115,559 | 449 | 98,187 |
| Population density (people per sq. km of land area) | 143.72 | 92.62 | 7,743.16 | 139.73 | 385.20 | 77.82 | 296.33 |
| Population growth (annual %) | 0.64 | 1.07 | 3.31 | 0.13 | 1.46 | 0.81 | 0.73 |
| Urban population growth (annual %) | 1.75 | 2.86 | 3.31 | 1.52 | 2.08 | 1.19 | 2.59 |
| Net migration, 1000 | -50.00 | -30.00 | 27.00 | 19.00 | -70.00 | 0.00 | -82.70 |
| GDP (current million US\$) | 1,319,076 | 29,505 | 498,475 | 495,645 | 404,353 | 16,682 | 410,324 |
| GDP per capita (current US\$/population) | 4,788 | 1,760 | 88,429 | 6,913 | 3,499 | 37,152 | 4,179 |
| GDP growth (annual %) | 5.31 | 5.24 | 3.84 | 2.46 | 7.58 | -1.63 | 8.12 |
| GNI, PPP (current international million \$) | 3,870,444 | 82,654 | 646,129 | 1,546,858 | 1,221,448 | 36,395 | 1,312,689 |
| GNI per capita, PPP (current international \$) | 14,050 | 4,930 | 114,620 | 21,570 | 10,570 | 81,060 | 13,370 |
| Inflation, GDP deflator (annual %) | 9.57 | 4.07 | 13.48 | 4.77 | 5.49 | 24.24 | 4.05 |
| Agriculture, forestry, and fishing, value added (% of GDP) | 12.40 | 22.23 | 0.03 | 8.72 | 9.55 | 1.10 | 11.96 |
| Industry (including construction), value added (% of GDP) | 41.43 | 37.90 | 23.75 | 35.15 | 29.22 | 67.93 | 38.18 |
| Service & Others (agri., fores. & fish. and industry deducted from 100%, % of GDP) | 46.17 | 39.87 | 76.23 | 56.12 | 61.23 | 30.98 | 49.87 |
| Foreign direct investment, net inflows (BoP, current million US\$) | 24,702 | 3,579 | 148,764 | 11,232 | 9,492 | -292 | 17,900 |
| Exports of goods and services (% of GDP) | 24.50 | 68.34 | 185.76 | 65.36 | 28.39 | 86.39 | 93.81 |
| Imports of goods and services (% of GDP) | 20.96 | 54.85 | 147.22 | 67.49 | 44.04 | NA | 89.98 |
| Net official development assistance and official aid received (current million US\$) | 662.70 | 1,546.94 | NA | 554.00 | 1,612.48 | NA | 48.92 |
| Personal remittances, received (current million US\$) | 13,089 | 2,616 | 0 | 8,917 | 38,049 | 1 | 13,200 |
| Personal remittances per population, received (current US\$/person) | 47.51 | 156.01 | 0.00 | 124.37 | 329.26 | 1.94 | 134.44 |
| Tax revenue (% of GDP) | 10.38 | NA | 12.03 | 14.38 | 14.62 | NA | NA |
| Human Development Index (Source: UNDP) | 0.71 | 0.60 | 0.95 | 0.80 | 0.71 | 0.82 | 0.73 |
| Life expectancy at birth, total (years) | 68.25 | 69.90 | 82.90 | 79.68 | 72.19 | 74.55 | 74.58 |
| Mortality rate, under-5 (per 1,000 live births) | 21.30 | 23.70 | 2.20 | 8.10 | 27.50 | 9.70 | 20.30 |
| Fertility rate, total (births per woman) | 2.15 | 2.32 | 1.04 | 1.32 | 2.73 | 1.76 | 1.94 |
| Immunization, measles (% of children ages 12-23 months) | 84.00 | 83.00 | 96.00 | 96.00 | 69.00 | 97.00 | 88.00 |
| School enrollment, primary (% gross) | 100.64 | 109.96 | NA | 101.59 | 91.87 | NA | 123.13 |
| Primary completion rate, total (% of relevant age group) | 102.99 | 90.70 | NA | 97.39 | 87.98 | NA | 115.85 |
| School enrollment, secondary (% gross) | 98.97 | NA | NA | 105.60 | 93.67 | NA | 97.25 |
| Mobile cellular subscriptions (per 100 people) | 114.90 | 116.33 | 156.48 | 176.32 | 144.04 | 117.76 | 139.95 |
| Indicators | Malaysia | Myanmar | Lao PDR | Timor-Leste | World | Japan | East Asia & Pacific |
| Surface area (1000 sq. km), data for 2021 | 330.41 | 676.59 | 236.80 | 14.87 | 140,486.94 | 377.97 | 24,830.82 |
| Forest area (1000 sq. km), data for 2021 | 190.64 | 282.54 | 165.61 | 9.20 | 40,449.47 | 249.35 | 6,648.56 |
| Forest area share against surface area (%) | 57.70 | 41.76 | 69.94 | 61.85 | 28.79 | 65.97 | 26.78 |
| Population, 1000 total | 33,938 | 54,179 | 7,529 | 1,341 | 7,951,595 | 125,125 | 2,375,209 |
| Population density (people per sq. km of land area) | 102.72 | 80.08 | 31.80 | 90.20 | 56.60 | 331.04 | 95.66 |
| Population growth (annual %) | 1.08 | 0.71 | 1.40 | 1.53 | 0.79 | -0.44 | 0.21 |
| Urban population growth (annual %) | 1.74 | 1.73 | 3.15 | 2.72 | 1.55 | -0.35 | 1.45 |
| Net migration, 1000 | 49.00 | -35.00 | -10.00 | -5.00 | 0.00 | 99.99 | -180.38 |
| GDP (current million US\$) | 407,027 | 62,253 | 15,469 | 3,205 | 101,225,060 | 4,256,411 | 30,663,750 |
| GDP per capita (current US\$/population) | 11,993 | 1,149 | 2,054 | 2,389 | 12,730 | 34,017 | 12,910 |
| GDP growth (annual %) | 8.65 | 4.04 | 2.71 | -20.54 | 3.09 | 0.95 | 2.89 |
| GNI, PPP (current international million \$) | 1,149,763 | 303,476 | 61,256 | 7,962 | 171,145,613 | 6,254,021 | 55,166,152 |
| GNI per capita, PPP (current international \$) | 33,880 | 5,600 | 8,140 | 5,940 | 21,523 | 49,980 | 23,226 |
| Inflation, GDP deflator (annual %) | 6.45 | 6.16 | 15.77 | 11.36 | 7.33 | 0.33 | 5.52 |
| Agriculture, forestry, and fishing, value added (% of GDP) | 8.92 | 22.33 | 14.87 | 10.23 | 4.27 | 1.02 | 5.94 |
| Industry (including construction), value added (% of GDP) | 39.10 | 38.25 | 34.11 | 53.75 | 27.38 | 26.92 | 35.53 |
| Service & Others (agri., fores. & fish. and industry deducted from 100%, % of GDP) | 51.98 | 39.42 | 51.02 | 36.02 | 68.34 | 72.07 | 58.54 |
| Foreign direct investment, net inflows (BoP, current million US\$) | 15,028 | 1,239 | 636 | -395 | 1,796,637 | 48,005 | 711,548 |
| Exports of goods and services (% of GDP) | 76.95 | NA | NA | 55.68 | 31.02 | 21.54 | 31.55 |
| Imports of goods and services (% of GDP) | 69.71 | NA | NA | 41.96 | 30.38 | 25.30 | 28.91 |
| Net official development assistance and official aid received (current million US\$) | 4.89 | 1,003.34 | 547.74 | 223.56 | NA | NA | NA |
| Personal remittances, received (current million US\$) | 1,618 | 1,261 | 240 | 164 | 792,361 | 5,408 | 123,796 |
| Personal remittances per population, received (current US\$/person) | 47.67 | 23.27 | 31.84 | 122.58 | 99.65 | 43.22 | 52.12 |
| Tax revenue (% of GDP) | 11.65 | ..NA | 12.11 | 21.67 | 14.15 | 14.07 | 11.53 |
| Human Development Index (Source: UNDP) | 0.81 | 0.61 | 0.62 | 0.57 | 0.00 | 0.92 | 0.00 |
| Life expectancy at birth, total (years) | 76.26 | 67.26 | 69.00 | 69.06 | 72.00 | 84.00 | 76.90 |
| Mortality rate, under-5 (per 1,000 live births) | 7.80 | 40.10 | 40.40 | 48.60 | 37.10 | 2.30 | 14.50 |
| Fertility rate, total (births per woman) | 1.79 | 2.13 | 2.45 | 3.05 | 2.26 | 1.26 | 1.49 |
| Immunization, measles (% of children ages 12-23 months) | 96.00 | 75.00 | 76.00 | 79.00 | 83.54 | 98.00 | 89.23 |
| School enrollment, primary (% gross) | 97.75 | NA | 97.22 | NA | 101.43 | NA | 102.05 |
| Primary completion rate, total (% of relevant age group) | 95.11 | NA | 89.05 | NA | 91.14 | NA | 97.66 |
| School enrollment, secondary (% gross) | 84.54 | NA | 56.88 | NA | 77.20 | NA | 91.08 |
| Mobile cellular subscriptions (per 100 people) | 141.29 | 106.70 | ..NA | 110.42 | 108.10 | 167.52 | 128.70 |

Source: Indicators | Data (worldbank.org) and Country Insights | Human Development Reports (undp.org).

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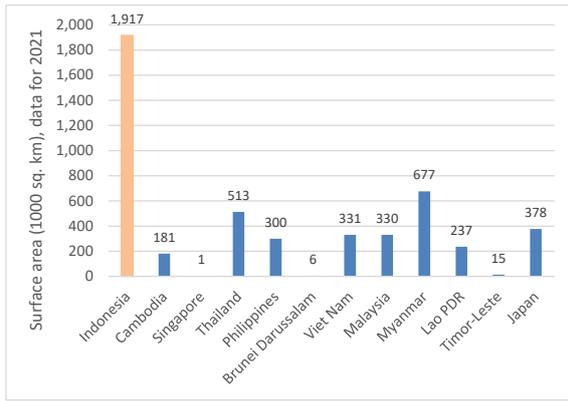


Fig. 2.1.1 Comparison of Land Area (Surface Area)
Source: World Dev. Indicators (2023)

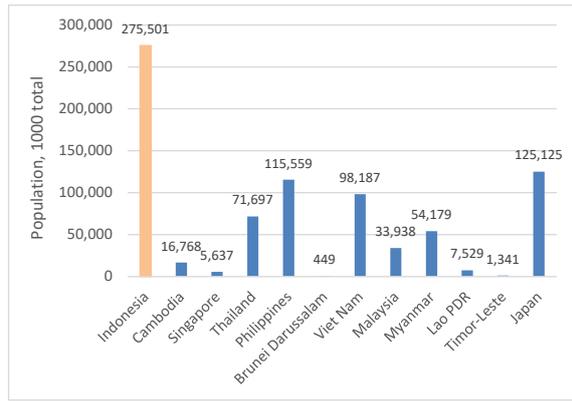


Fig. 2.1.2 Comparison of Population
Source: World Dev. Indicators (2023)

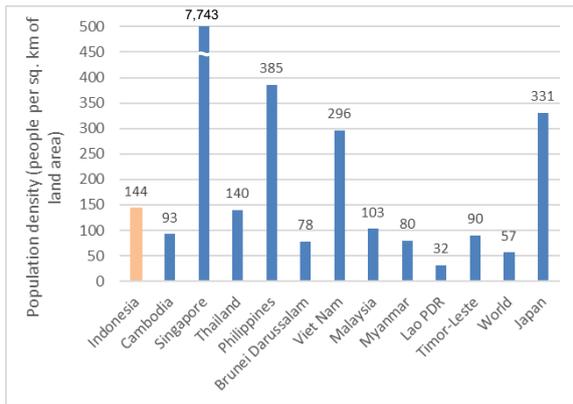


Fig. 2.1.3 Comparison of Population Density
Source: World Dev. Indicators (2023)

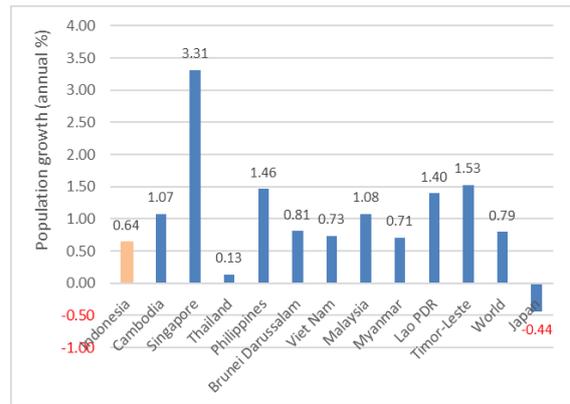


Fig. 2.1.4 Comparison of Population Growth
Source: World Dev. Indicators (2023)

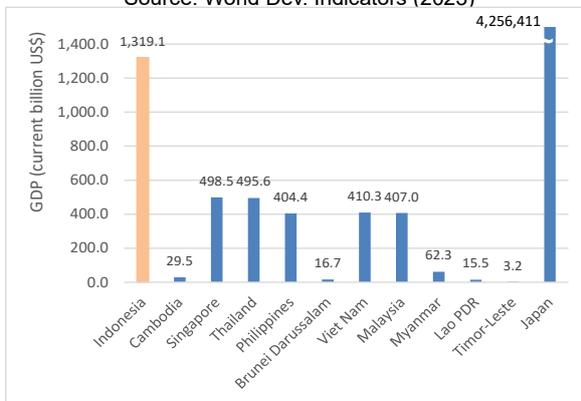


Fig. 2.1.5 Comparison of GDP
Source: World Dev. Indicators (2023)

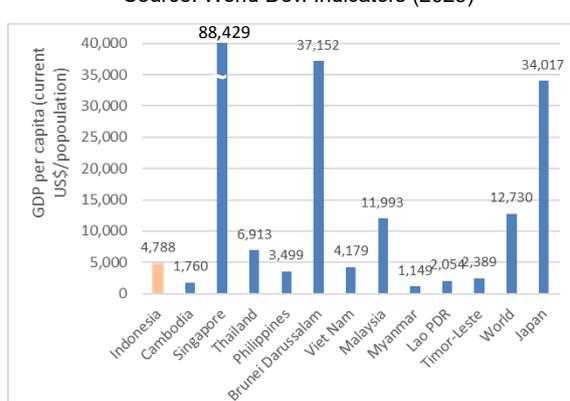


Fig. 2.1.6 Comparison of GDP per Capita
Source: World Dev. Indicators (2023)

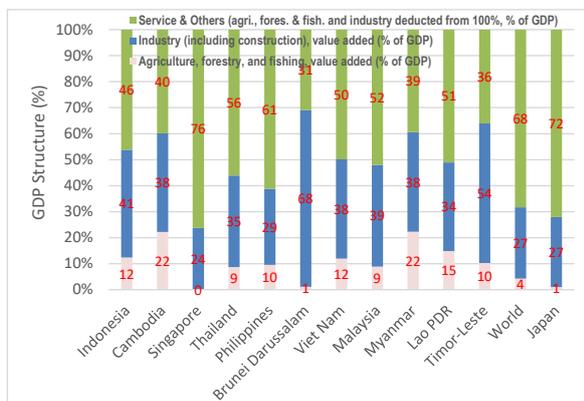


Fig. 2.1.7 Comparison of GDP Composition
Source: World Dev. Indicators (2023)

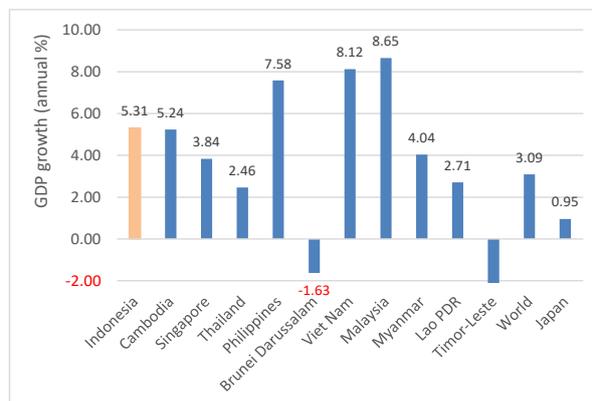


Fig. 2.1.8 Comparison of GDP Growth Ratio
Source: World Dev. Indicators (2023)

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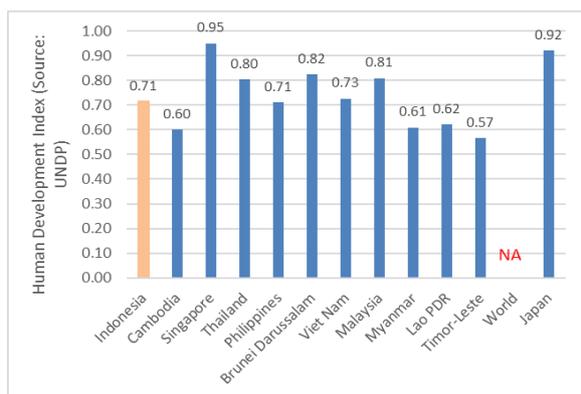


Fig. 2.1.9 Comparison of HDI
Source: World Dev. Indicators (2023)

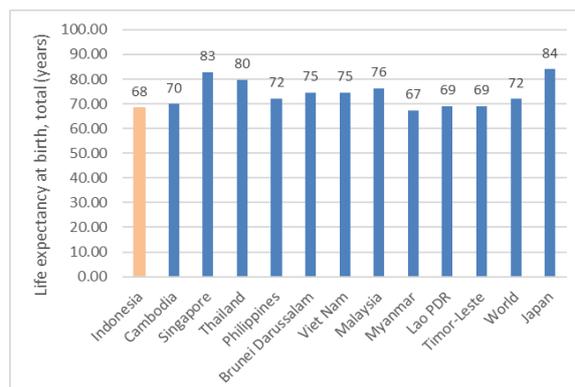


Fig. 2.1.10 Comparison of Average Life Expectancy
Source: World Dev. Indicators (2023)

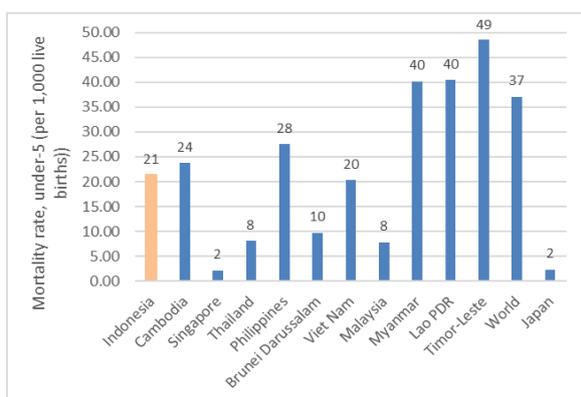


Fig. 2.1.11 Comparison of Under 5-year Mortality
Source: World Dev. Indicators (2023)

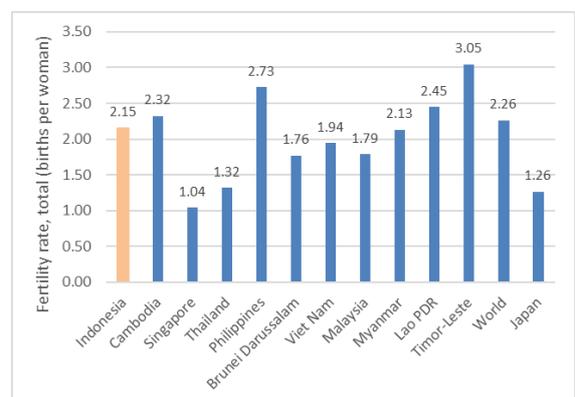


Fig. 2.1.12 Comparison of Birth Ratio per Woman
Source: World Dev. Indicators (2023)

2.2 Agricultural Sector Overview

2.2.1 Agricultural Land Use and Crop Acreage including Plantation

Table 2.2.1 shows the agricultural land area according to the agricultural land classification of Indonesia. There is a total of 37.5 million ha of agricultural land not including plantations as of 2019, of which about 20% (about 8.16 million ha) is classified as wetland and is used for paddy rice cultivation. By island, about 40% of wetlands are distributed in Java (about 3.2 million ha), followed by Sumatra (about 2.22 million ha), Kalimantan (about 1.07 million ha), and Sulawesi (about 1.05 million ha)¹².

Table 2.2.1 Agricultural Land Area in Indonesia (2019), Unit ('000ha)

| Island | Wetland (Paddy Field) | | | Agricultural Dryland (Upland) | | | | Total |
|--------------------|-----------------------|------------------|-----------|-------------------------------|----------------------------------|--------------------|-----------|-------|
| | Paddy (Irrigated) | Paddy (Rain-fed) | Sub-total | Dry Field/Garden | Unirrigated/Shifting Cultivation | Temporarily Unused | Sub-total | |
| Sumatera | 1,055 | 1,159 | 2,215 | 3,676 | 1,487 | 2,351 | 7,514 | 9,729 |
| Java | 2,380 | 817 | 3,197 | 2,645 | 353 | 49 | 3,047 | 6,244 |
| Bali-Nusa Tenggara | 391 | 144 | 535 | 924 | 453 | 820 | 2,197 | 2,732 |
| Kalimantan | 168 | 906 | 1,074 | 1,619 | 677.757 | 3,338 | 5,635 | 6,709 |
| Sulawesi | 715 | 334 | 1,048 | 1,818 | 677 | 804 | 3,298 | 4,347 |

¹² Agricultural land area in Indonesia is vast. For example, the area of farmland, upland area, and paddy field in Japan are 4.3 million ha, 1.98 million ha, and 2.34 million ha, respectively (data for 2023: https://www.maff.go.jp/j/tokei/kekka_gaiyou/sakumotu/menseki/r5/kouti/index.html). Both Japan and Indonesia are almost self-sufficient in rice, or import some (in case of Indonesia). Therefore, the per capita area of rice paddies in Japan and Indonesia is 0.019 ha and 0.029 ha, respectively, which means that the per capita area of rice paddies in Indonesia is about 1.5 times that of Japan. The reason why the rice paddy area in Indonesia is larger than that in Japan may be due to the difference in rice consumption per capita (Japan consumes 50.8 kg in 2022 (<https://www.zenoh.or.jp/press/release/2022/10/12/%E7%B1%B3%E6%83%85%E5%8B%A2.pdf>) and 94.9 kg in 2020 in Indonesia (<https://www.indonesiasoken.com/news/indonesian-rice-farmers-and-the-latest-rice-distribution-situation/>)).

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| Island | Wetland (Paddy Field) | | | Agricultural Dryland (Upland) | | | | Total |
|------------------|-----------------------|------------------|--------------|-------------------------------|-----------------------------------|--------------------|---------------|---------------|
| | Paddy (Irrigated) | Paddy (Rain-fed) | Sub-total | Dry Field/ Garden | Unirrigated/ Shifting Cultivation | Temporarily Unused | Sub-total | |
| Maluku-Papua | 37 | 58 | 95 | 1,710 | 1,542 | 4,410 | 7,662 | 7,757 |
| Indonesia | 4,746 | 3,418 | 8,164 | 12,393 | 5,189 | 11,771 | 29,353 | 37,517 |
| Share (%) | 13% | 9% | 22% | 33% | 14% | 31% | 78% | 100% |

Source: Agricultural Land Statistics 2015-2019 (Center for Agriculture Data and Information System Secretariat General– Ministry of Agriculture 2020)

Note: Total does not necessarily equal individual additions due to rounding.

Of the wetlands where paddy rice cultivation is practiced, the area of irrigated paddy fields is about 4.75 million ha, accounting for about 60% of the total paddy field area, also equal to 13% of the total agricultural land area. By island, 50% of the irrigated rice paddy area is distributed in Java (about 2.38 million ha), followed by Sumatra (about 1.06 million ha) and Sulawesi (about 720,000 ha).

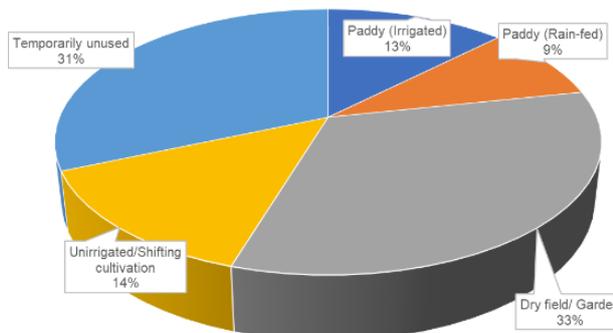


Figure 2.2.1 Share of Farmlands in Indonesia

Source: Agricultural Land Statistics 2015-2019

Indonesia is characterized by the large number of plantation crops (estate crops) grown in the country. Table 2.2.2 shows the plantation crops and their area in 2022, and Figure 2.2.2 shows their ratios. The total area reaches 29 million hectares. Oil palm is the largest plantation crop, with 16.8 million ha, or 58% of the total plantation area. This is followed by rubber (3.83 million ha, 13%), coconut (3.34 million ha, 11%), cocoa (1.42 million ha, 5%), and coffee (1.27 million ha, 4%).

Table 2.2.2 Plantation Crop Area in Indonesia (2022) , Unit ('000ha)

| Island | Oil Palm | Rubber | Coconut | Cocoa | Coffee | Clove | Sugar Cane | Cashew nut | |
|----------------------|----------------------------|--------------|--------------|--------------|--------------|------------|----------------------------|------------|---------------|
| Sumatera | 10,202 | 2,668 | 1,067 | 314 | 786 | 65 | 185 | 0 | |
| Java | 32 | 106 | 690 | 62 | 201 | 128 | 355 | 64 | |
| Bali - Nusa Tenggara | 0 | 0 | 264 | 83 | 123 | 38 | 5 | 212 | |
| Kalimantan | 5,983 | 1,022 | 190 | 18 | 14 | 1 | 0 | 0 | |
| Sulawesi | 390 | 16 | 761 | 853 | 125 | 270 | 25 | 165 | |
| Maluku - Papua | 228 | 15 | 368 | 91 | 17 | 71 | 0 | 11 | |
| Indonesia | 16,834 | 3,826 | 3,341 | 1,421 | 1,266 | 575 | 525 | 452 | |
| Share (%) | 58% | 13% | 11% | 5% | 4% | 2% | 2% | 2% | |
| Island | Nutmeg/ Myristic a fragans | Sago Palm | Tobacco | Pepper | Patchouli | Tea | Aleurites Trisperma Blanco | Cotton | Total |
| Sumatera | 35 | 78 | 6 | 107 | 6 | 12 | 0 | 0 | 15,530 |
| Java | 16 | 0 | 145 | 6 | 1 | 83 | 0 | 0 | 1,889 |
| Bali - Nusa Tenggara | 7 | 0 | 36 | 1 | 0 | 0 | 1 | 0 | 770 |
| Kalimantan | 0 | 7 | 0 | 22 | 0 | 0 | 0 | 0 | 7,258 |
| Sulawesi | 75 | 14 | 3 | 38 | 10 | 0 | 0 | 0 | 2,746 |
| Maluku - Papua | 137 | 102 | 0 | 0 | 0 | 0 | 0 | 0 | 1,040 |
| Indonesia | 271 | 201 | 190 | 174 | 17 | 94 | 1 | 0 | 29,188 |
| Share (%) | 1% | 1% | 1% | 1% | 0% | 0% | 0% | 0% | 100% |

Source: Agricultural Statistics 2023 (Ministry of Agriculture, 2023)

2.2.2 Harvested Area and Production of Major Crops (Cereals and Legumes)

Figures 2.2.3 and 2.2.4 show the harvested area and production of rice, maize, and cassava as staple foods, and soybeans, peanuts, mung beans, and sweet potatoes as major legumes (2022). Rice is mainly produced from wetland paddies, but about 5% of rice in Indonesia is produced in the upland fields, i.e., as upland rice. In the statistics, these two types of rice are shown together rather than separately. Paddy in the figure refers to unhusked rice, and Milled Rice refers to white rice after milling.

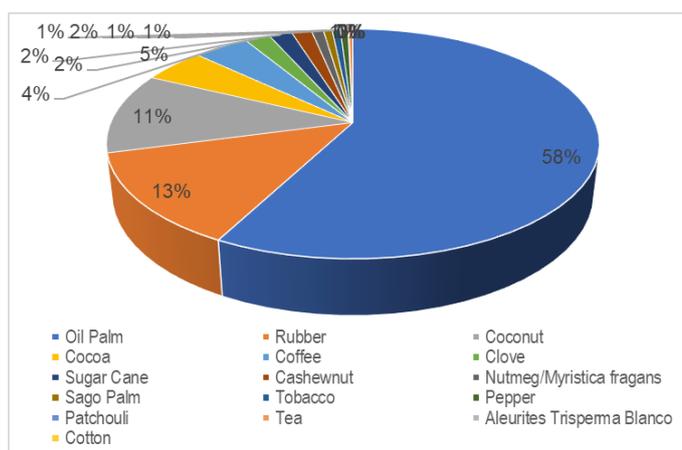


Fig. 2.2.2 Share of Plantation Area

Source: Agricultural Statistics 2023

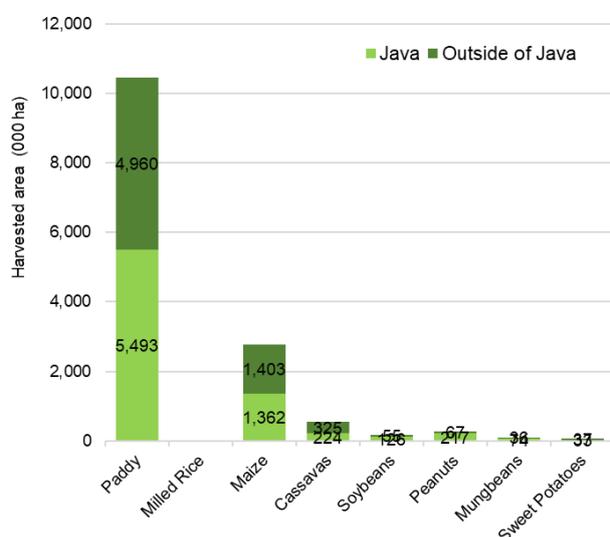


Figure 2.2.3 Harvested Area by Major Crop ('000ha)

Source: Agricultural Statistics 2023, MOA

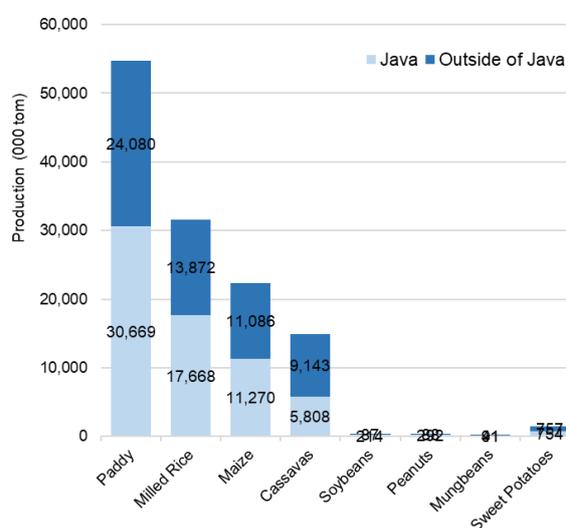


Figure 2.2.4 Production by Major Crop ('000ton)

Source: Agricultural Statistics 2023, MOA

Figures 2.2.3 and 2.2.4 show that rice is the staple food in Indonesia, with a very large harvested area and production. Only Papua Province consumes a large amount of sweet potatoes as part of their staple food in Indonesia (in Papua Province, sweet potatoes account for about 43% of the caloric intake of cereals and potatoes, Statistik Indonesia 2015, BPS, as of 2015). In addition, maize and cassava are mostly used for livestock feed and processing, and are almost never used as staple foods.

2.2.3 Rice and Plantation Harvested, and Planted Area and Production

Figures 2.2.5 and 2.2.6 show the area of rice harvested and plantation crops and their respective production. It can be seen that oil palm is the largest crop in terms of area (approximately 17 million ha). The harvested area of rice follows at approximately 10 million hectares¹³. Rice (unhusked rice), which has the highest production volume in terms of weight per unit area, is also the largest in terms of production volume. Rice (unhusked rice) production is 55 million tons, equivalent to 32 million tons on

¹³ Table 2.1.1 mentioned that the area of rice paddies in Indonesia is approximately 8 million hectares, but since double cropping is carried out in irrigated paddies, the area of rice harvested is larger than the area of agricultural land used for rice paddies.

a milled basis, followed by oil palm production at around 47 million tons.

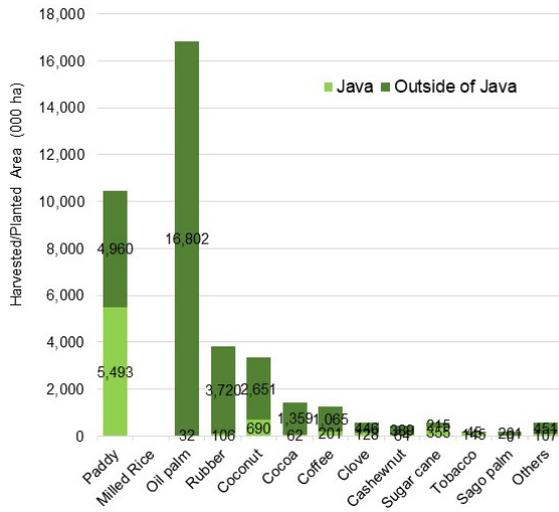


Figure 2.2.5 Rice Harvested and Plantation Areas ('000ha)

Source: Agricultural Statistics 2023, MOA

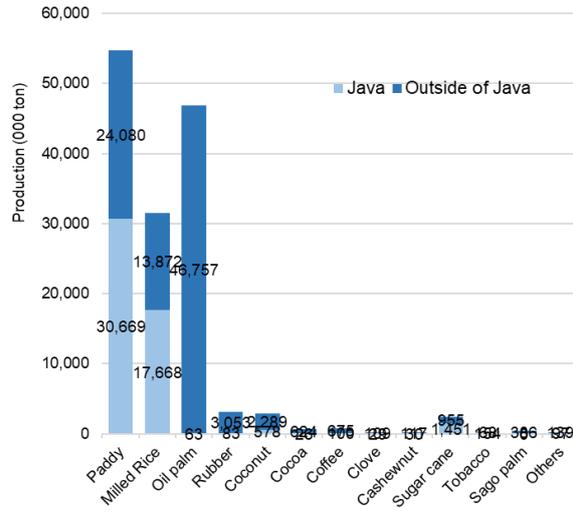


Figure 2.2.6 Production of Rice and Plantation Crops ('000ton)

Source: Agricultural Statistics 2023, MOA

2.2.4 Trend of Paddy Production in Indonesia

Figure 2.2.7 shows the trend of paddy production in the country of Indonesia since 1980. As shown in the figure, paddy production has increased year after year over time; however, the methodology for estimating paddy production started to be revised in 2016. Previously, rice production was estimated based on harvest area and yield surveys conducted by regional and district officers who visited the field directly. Under the new estimation method, BPS began to use satellite images to estimate harvested area using a method called the KSA (Kerangka Sampel Area), and sample yield surveys were carried out at specific locations based on information about harvested area. The production data estimated by the new estimation method was published in 2018. Therefore, after 2016, a downward revision of 32% has been applied from the production estimated based on the earlier methodology, resulting in a sharp drop in production after 2016.

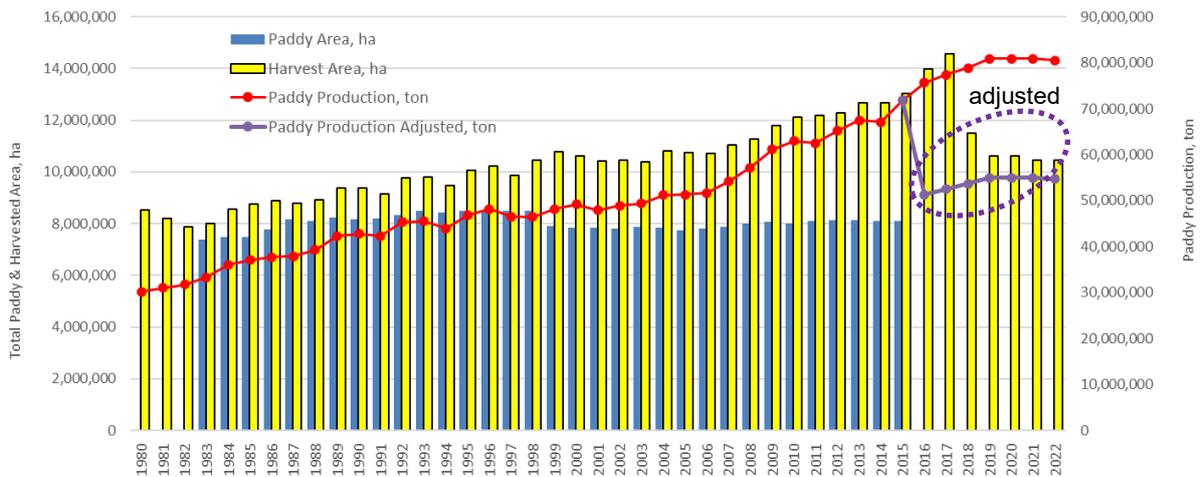


Figure 2.2.7 Long Term Trend of Paddy Production, Harvested Area and Paddy Area

Source: Statistics Indonesia (Badan Pusat Statistik; BPS), MOA

Figure 2.2.7 shows that while paddy land area (light blue bars, shown through 2014) has not changed

significantly over the years, harvested area (yellow bars) has continuously increased. The increase in the harvested area can be attributed to the development of irrigated paddy fields, the introduction of two-season cropping even under rainfed conditions in areas with high rainfall throughout the year, and also to the increase in cropped area due to the effective use of irrigation water in existing irrigated areas. In addition, the increase of subsidized fertilization contributed to increase the production (red line).

The revised paddy production in 2022 comes to 54.75 million tons (unhusked rice equivalent), although the data valid as of 2024 are only up to 2022. The harvested area in 2022 is 10.45 million hectares. As a result, the yield in terms of unhusked rice arrives at 5.24 tons/ha, which means that the national average paddy yield in Indonesia is already quite high.

For the production of 54.75 million tons of unhusked rice, the weight of rice after milling comes to 35.04 million tons, using the conversion factor of 0.64, which is normally used in Indonesia. Dividing this by Indonesia's population of 275,501,000 in 2022, we can obtain the per-capita milled rice of 127 kg/capita. Although this amount of milled rice per capita is very large, the actual per capita consumption could be lower due to post-harvest losses, securing seed rice for the next season, and others such as rice used for processing and losses at each stage of distribution. In fact, Indonesia imports about 1 million tons of milled rice every year¹⁴.

2.2.5 Farmland Area Owned

Figure 2.2.8 shows the percentage of farmers by size of farmland owned, and also by regional island. The size of farmland is divided into less than 0.5 ha, 0.5 ha to less than 2 ha, and 2 ha or more. The average for Indonesia as a whole is shown on the far right. From the chart, we can see that the majority of farmers in Indonesia are small-scale or micro-scale, with 62% of farmers owning less than 0.5 ha of farmland. In particular, on Java Island, where the population density is high, slightly over 80% of farmers own less than 0.5 ha of farmland.

2.2.6 Agricultural Extension System

Agricultural extension in Indonesia is the responsibility of the District Agricultural Office (Dinas Pertanian) established in the level of each district (Kabupaten). Agricultural extension officers are usually affiliated with the agricultural extension division within the Agricultural Office. This division is responsible for providing extension services aimed at improving farmers' agricultural practices.

Agricultural extension officers are usually assigned to extension offices established at the Kecamatan (sub-district) under the jurisdiction of the District Agricultural Office. This allows them to be located closer to the rural areas they are in charge of, enabling better communication and support for farmers. The number of extension officers assigned to each extension office varies greatly depending on the area coverage, agricultural service needs, and budget allocated by the regional government. In general, there are usually between 5 and 20 extension officers per extension office.

The main agricultural extension services provided by the extension officers and the extension activities

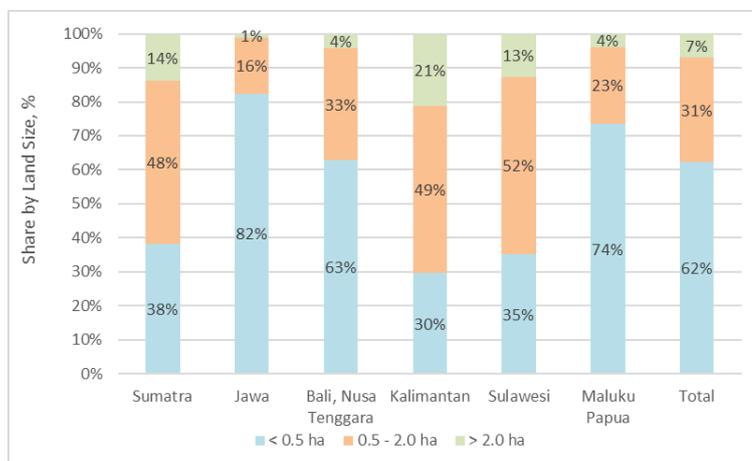


Figure 2.2.8 Farmers Percentage by Farmland Size
Source : BPS Census

¹⁴ See the 3.1.1 Food Security Strategy in Indonesia, 3) Food Self Sufficiency of Staple Food in Indonesia for the detail.

employed to deliver them are described below:

1) Main agricultural extension services

| | |
|----------------------|---|
| Training and W/S: | Conducting educational sessions on best practices in crop production, pest management, and sustainable agricultural techniques. |
| Advisory services: | Providing individual advice on crop selection, soil management, and pest control strategies. |
| Access to resources: | Providing farmers with access to improved seeds, fertilizers, and other agricultural inputs. |
| Technology transfer: | Introducing new agricultural technologies and methods that improve productivity. |

2) Extension activities

| | |
|--------------------------------------|---|
| Field visits: | Regularly visit the farms to assess conditions, provide on-site advice, and demonstrate new techniques. |
| Group meetings: | Organize community meetings to discuss common issues and share knowledge among farmers. |
| Demonstration plots: | Establish demonstration farms to introduce effective farming practices and technologies. |
| Cooperation with local institutions: | Work with local agricultural research institutions to disseminate research results and technological innovations. |

2.2.7 Farmer Organizations

The most typical farmer organization in Indonesia is called “Kelompok Tani” (abbreviated as “Poktan”), which means “farmer group” in Indonesian. This organization plays an important role in supporting its member farmers and improving agricultural productivity, and its structure is such that representatives are elected to serve as 1) chairperson, 2) secretary, and 3) treasurer, and ordinary local farmers participate as members under these representatives. The main roles and responsibilities of Poktan are as follows:

| | |
|--------------------------------------|--|
| Collective and collaborative action: | Promote collective action among farmers to address common issues such as pest control, marketing, and resource sharing. |
| Training and capacity building: | Organize training sessions and workshops to educate members about farming practices, new technologies, and sustainable farming methods that they feel would be most appropriate. |
| Access to Resources: | Support access to agricultural inputs such as seeds, fertilizers, and equipment, and enable cost reductions through bulk purchasing. |
| Access to Markets: | Support farmers in finding markets for their produce and negotiating better prices, and also in some cases, support direct sales to consumers. |
| Advocacy: | Advocate for policies and programs that benefit farming communities by representing farmers' interests to local governments and other stakeholders. |
| Communication: | Share important information such as agricultural trends, weather forecasts, and government programs to improve farming activities. |

In addition to the above, Poktan also works with agricultural extension services to carry out the following activities:

| | |
|-------------------------|---|
| On-site demonstrations: | Introducing new farming methods and crop varieties to encourage adoption by member farmers. |
| Group meetings: | Regularly getting together to discuss issues, share experiences and plan joint actions. |
| Networking: | Linking up with other organizations, NGOs and government agencies to strengthen support and resources for member farmers. |

2.2.8 Major Agricultural Risks

Indonesia is exposed to a number of agricultural risks that can affect food security and farmers' livelihoods. The main risks identified by the Ministry of Agriculture and literature are as follows:

- 1) Natural disasters: Indonesia is prone to a variety of natural disasters, including floods, droughts and earthquakes. These disasters can severely damage agricultural production and lead to crop failures¹⁵.
- 2) Climate change: Changes in climate patterns, such as rising temperatures and changes in rainfall patterns, pose risks to agricultural productivity. Farmers may face challenges in terms of crop yields and pest control due to these changes¹⁶.
- 3) Economic instability: Fluctuations in food prices and economic downturns affect farmers' income and their ability to invest in agricultural input. In particular, the instability of food prices since the Lehman Shock and the Asian currency crisis has affected the vulnerability of the agricultural sector¹⁷.
- 4) The Coronavirus: COVID-19 has affected supply chains and access to food, exacerbating existing food security challenges. The Coronavirus has raised concerns about the resilience of the agricultural sector¹⁸.
- 5) Conflicts over land and labor: Conflicts over land ownership and labor practices disrupt production in some cases. Uncertainty of land rights poses risks for farmers, such as sudden restrictions on farmland use or forced evictions, which affect labor stability and agricultural productivity. These conflicts over land ownership and labor issues pose risks to agricultural operations¹⁹.
- 6) Dependence on imports: Dependence on imports of grain and other agricultural products makes them vulnerable to fluctuations in world markets and disruptions in trade^{20,21}.
- 7) Pest and disease outbreaks: Pest and disease outbreaks can threaten crop yields and livestock health, leading to economic losses for farmers²².

2.3 Global Trends in Agricultural Insurance Market

2.3.1 Agricultural Insurance Overview

There are four primary approaches to managing risks such as natural disasters and disease:

- 1) Avoidance – Eliminating exposure to risk entirely.

¹⁵ https://www.oecd-ilibrary.org/agriculture-and-food/managing-food-insecurity-risk_9789264233874-en

¹⁶ <https://www.adb.org/publications/summary-indonesias-agriculture-natural-resources-and-environment-sector-assessment>

¹⁷ <https://www.adb.org/publications/summary-indonesias-agriculture-natural-resources-and-environment-sector-assessment>

¹⁸ <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8459289/>

¹⁹ <https://ap.ftc.org.tw/article/2592>

²⁰ <https://www.world-grain.com/articles/16222-focus-on-indonesia>

²¹ <https://news.unair.ac.id/2020/07/16/indonesia-dependence-on-australian-wheat-imports/?lang=en>

²² https://www.oecd-ilibrary.org/agriculture-and-food/managing-food-insecurity-risk_9789264233874-en

- 2) Mitigation/Prevention – Taking measures to reduce the likelihood or impact of risk.
- 3) Retention – Accepting and managing risk through personal savings or other self-financed means.
- 4) Transfer – Shifting risk to a third party, such as an insurance company, through payments like insurance premiums.

Non-life insurance falls under risk transfer, where individuals or businesses pay premiums to an insurance company in exchange for financial compensation when a covered loss occurs. This system operates on the principle of mutual assistance—small contributions from many policyholders create a collective financial pool that helps cover significant losses that individuals could not manage alone.

Insurance pricing, including premiums and payouts, is determined based on the probability of loss, following the law of large numbers. This principle states that as the number of insured individuals increases, the actual occurrence of losses aligns more closely with statistical predictions.

Agricultural insurance specifically protects farmers against financial losses caused by natural disasters, crop failure, or livestock issues, ensuring they can maintain expected income levels. Given current global uncertainties—such as geopolitical instability in the Middle East, the invasion of Ukraine, and rising protectionism in the U.S. and other countries—ensuring national food self-sufficiency is becoming a key agricultural policy priority worldwide.

Agricultural insurance comes in various forms, typically categorized by coverage type, payment schemes, and loss thresholds, as outlined below:

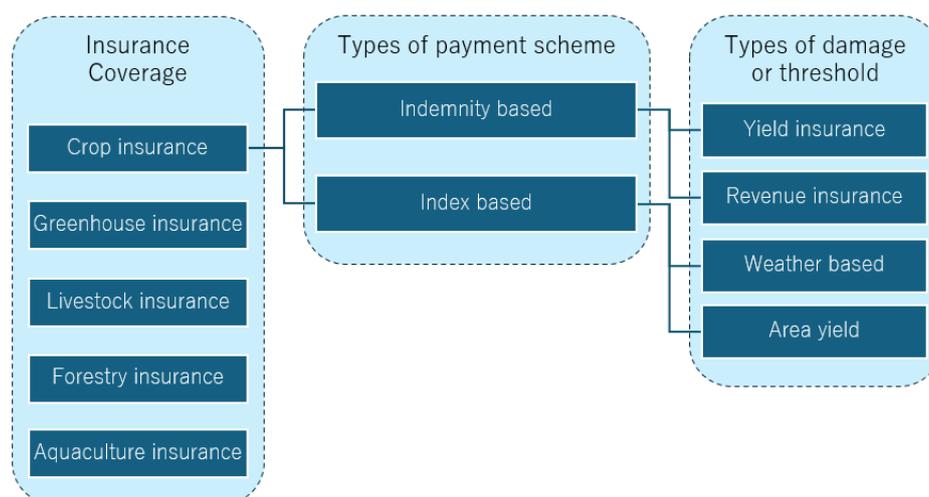


Figure 2.3.1 Classification of Agricultural Insurance

Source: JICA Survey Team

(1) Classification by Insurance Coverage

Crop insurance: Insuring rice, wheat, field crops, fruit trees, etc., accounts for more than 80% of all agricultural insurance, and various insurance policies have been developed.

Greenhouse insurance: Greenhouse insurance covers the building and machinery of the greenhouse and the crops grown in the greenhouse and compensates for damages against fire and natural disasters.

Livestock insurance: Livestock insurance covers livestock, such as cattle and pigs, for death or disuse due to fire, natural disasters, illness/injury, etc., or for loss due to theft. Some policies may also cover medical expenses for illness or injury.

Forestry Insurance: Forest insurance is mainly for forest owners and commercial forestry operations. It covers a pre-agreed range of forests and compensates for damage caused by fire, natural disasters, etc.

Aquaculture insurance: Aquaculture insurance covers aquaculture products such as salmon, tuna, shrimp, and shellfish farmed on land and at sea and covers damage caused by natural disasters, disease, algae blooms, and predators. Some policies also cover hatcheries, cages, and other equipment necessary for aquaculture.

(2) Classification by Types of Payment Scheme

Indemnity based

The Indemnity-based method is used to pay the actual amount of loss as insurance proceeds up to the insurance amount. The insurance amount is determined in advance when the insurance contract is set and is calculated based on the value of the crops and the amount of income that will be used as the basis for payment in the event of damage. Since the actual amount of damage determines the insurance amount to be paid, the actual damage is surveyed and assessed to determine whether or not insurance claims can be paid and the amount of insurance payments. The Indemnity-based is a fair method since a payout is given based on the actual damage, and it is possible to recover quickly from the damage. However, it may take time to complete the loss assessment survey, and it may take to conclude the payout process.

Index based

In an index-based method, a predefined index (or indicator) serves as the condition for payouts. When a disaster occurs and the index surpasses a set threshold, insurance payments are triggered. The index can be based on various factors, such as temperature, rainfall, regional average harvest yield, or wind speed. The payout amount is determined in advance based on the threshold of the selected index. This approach ensures transparency in the decision-making process for insurance payments. Additionally, since there is no need for on-site damage assessments, claims can be processed quickly and efficiently. The reduced administrative burden on insurance providers also helps keep premiums relatively low.

However, because index-based insurance does not directly assess actual damage, there is a risk that payouts may not always align with farmers' real losses. This basis risk can take two forms: (1) uncompensated risk, where farmers experience losses but do not receive payouts because the index does not reach the threshold, and (2) overcompensated risk, where payouts are made despite minimal or no actual damage. This limitation exists because index-based insurance relies on external indicators rather than assessing each farmer's specific situation, making it imperfect in capturing individual losses.

(3) Types of Damage or Threshold

Yield Insurance

The Insurance covers a decrease in yield due to a disaster and is divided into two types depending on the peril (disaster) to be compensated.

- Named Perils Crop Insurance: covers only those perils enumerated in the policy, such as hail, fire, windstorm, frost, etc.
- Multiple Perils Crop Insurance: covers a wide range of risks, such as drought and flood, that are not usually covered by enumeration perils crop insurance.

Revenue Insurance

This insurance policy covers reduced income due to lower yields, low crop prices, and price risks other than decreasing yields. The coverage is further expanded from combined perils crop insurance.

Weather Index Insurance

This insurance product uses indices from weather data, such as precipitation and temperature, which are highly correlated with harvest volume.

Area Yield Index Insurance

An index insurance policy pays out if yields in a particular range in a specific region fall below the historical average yield.

2.3.2 Overview of the Global Agricultural Insurance Market

The size of global agricultural insurance premiums has more than doubled in recent decades, from USD 23.6B in 2007²³ to USD 54.3B in 2023²⁴. The breakdown by region is as follows. North America and Europe have seen a significant decline in premiums written as a percentage of the total, while Asia-Pacific has nearly tripled its growth. South America and Africa have not changed in percentage.

The main reasons for the increase in Asia-Pacific are: 1) higher global demand and prices for crops such as soybeans, wheat, and corn, resulting in higher insurance values and premiums, and 2) government policies to promote agricultural insurance have led to an increase in government subsidized agricultural insurance, especially in China and South Asia. These and other factors can be cited at²⁵. While China is said to have now reached its peak population, demand is expected to continue to increase in the Asia-Pacific, as India and many other Asian countries are expected to continue to grow in population²⁶.

A breakdown by insurance type in Figure 2.3.3 shows that crop insurance accounts for over 80% of the market²⁷. In addition, for indemnity and index insurance, Figure 2.3.3 shows that indemnity base insurance accounts for the overwhelming share of the market, at nearly 90%.

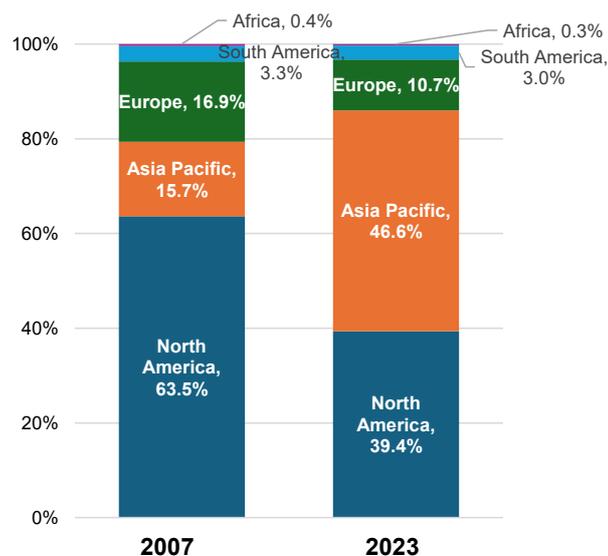


Figure 2.3.2 Agricultural Insurance: Premium Share by Region

Source: JICA Survey Team based on GIZ and AIAG (Footnote)

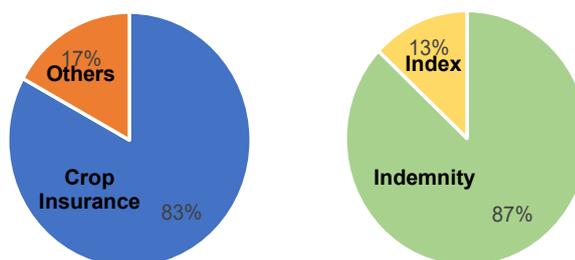


Figure 2.3.3 Agricultural Insurance: Breakdown by Type

Source: JICA Survey Team based on SwissRe's website

²³ Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH, "Innovations and emerging trends in agricultural insurance for smallholder farmers - an update", 2021

²⁴ AIAG, <https://www.aiag-iahi.org/en/news/globale-agrarversicherungspraemien-2023/>

²⁵ Food and Agriculture Organization of the UN, <https://www.fao.org/4/i2344e/i2344e00.pdf>

²⁶ UN (translated by National Institute of Population and Social Security Research),

https://www.ipss.go.jp/international/files/WPP2024_Summary_JPN.pdf

²⁷ Swiss Re, "Agricultural reinsurance A growth story", 2019

2.3.3 Agricultural Insurance in the ASEAN Region

The agricultural environment and socioeconomic conditions of ASEAN countries vary significantly, leading to differences in their agricultural insurance systems and operations. Currently, seven ASEAN member countries have introduced agricultural insurance: Indonesia, the Philippines, Thailand, Vietnam, Cambodia, Malaysia, and Myanmar. However, in Cambodia, Malaysia, and Myanmar, agricultural insurance is still in the pilot project phase rather than being fully implemented.

Among these countries, Thailand has the largest area of agricultural land covered by crop insurance, reaching approximately 4 million hectares in 2022. This is followed by the Philippines with 2.6 million hectares (2022) and Indonesia with 1 million hectares (2020). In these countries, agricultural insurance programs operate at the national level as government-supported initiatives. Conversely, in Cambodia and Myanmar, crop insurance remains in the pilot stage, with limited implementation. The following table provides an overview of agricultural insurance adoption across ASEAN member countries.

Table 2.3.1 Agricultural Insurance in the ASEAN Region

| Country | Status | Insurance Type | Subsidy | Type | Insured Area |
|------------------|------------------|---------------------------|------------|-----------------|----------------------------|
| Brunei | No program | - | - | - | - |
| Cambodia | Pilot | Weather, Area Yield Index | 50% | Private | 81,692 ha (2023) |
| Indonesia | Scaled-up | Indemnity | 80% | Public | 1,000,001 ha (2020) |
| Lao PDR | No program | - | - | - | - |
| Malaysia | Pilot | Indemnity | - | - | - |
| Myanmar | Pilot | Weather Index | 0% | Private, public | 169,377 ha (2023) |
| Philippines | Scaled-up | Indemnity | 55-100% | Public | 2,645,074 ha (2022) |
| Singapore | No program | - | - | - | - |
| Thailand | Scaled-up | Indemnity | 60-100% | Public-Private | 4,025,440 ha (2022) |
| Vietnam | Scaled-up | Area Yield Index | 20-100% | Public-Private | 70,676 ha (2013) |

Source: Sanyu Consultants Inc.

The implementation status of agricultural insurance in the ASEAN region can be broadly classified into three groups. The first group includes countries where agricultural insurance is fully implemented, such as Indonesia, the Philippines, Thailand, and Vietnam. The second group consists of countries where agricultural insurance is in the pilot phase, including Cambodia, Myanmar, and Malaysia, where pilot programs are either ongoing or planned. The third group comprises countries where agricultural insurance has not yet been introduced, such as Brunei, Singapore, and Lao PDR.

These classifications are based on the scale of agricultural insurance programs and the level of government involvement rather than their overall success. In other words, a country with full-scale implementation does not necessarily have a more effective or successful program than a country in the pilot stage. Additionally, even within the same category, implementation conditions can vary significantly. For instance, while Indonesia has established a government-led agricultural insurance system, there are substantial differences in coverage areas compared to Thailand and the Philippines, despite all three countries being classified under full-scale implementation.

Figure 2.3.4 illustrates the percentage of agricultural employment and agricultural production as a share of GDP in ASEAN countries. It highlights the significant role of agriculture in the economies of Cambodia, Myanmar, and Laos. However, agricultural insurance remains in the pilot stage in Cambodia and Myanmar, and it has yet to be introduced in Laos. Expanding agricultural insurance in these countries could be a key priority for strengthening agricultural risk management across the ASEAN region.

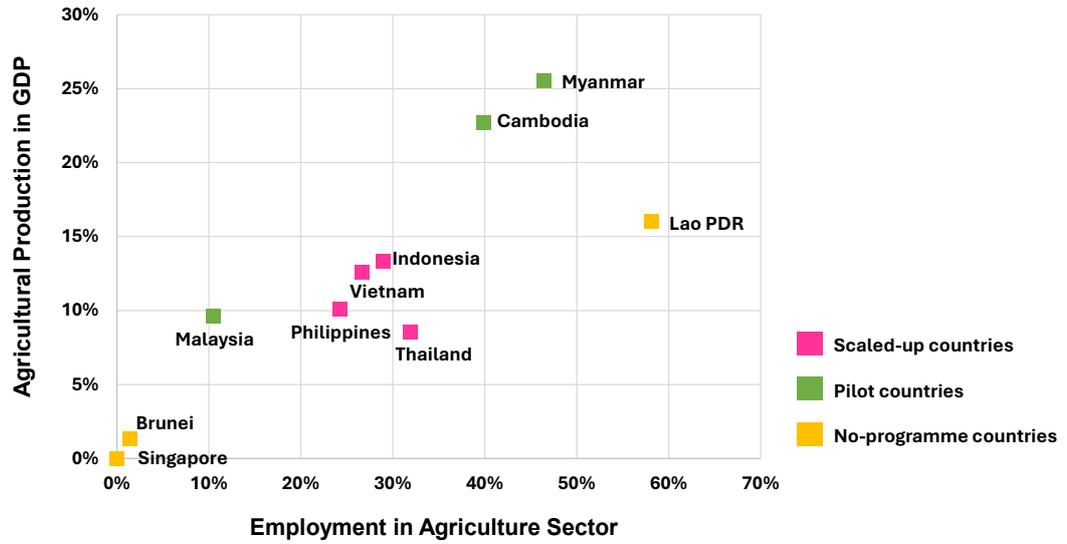


Figure 2.3.4 Shares of Employment in Agriculture Sector and Agricultural Production in GDP
 Source: FAOstat (2021)

CHAPTER 3 CURRENT STATUS AND CHALLENGES OF AGRICULTURAL INSURANCE IN INDONESIA AND IMPLICATIONS BASED ON COMPARISON WITH OTHER CASES

3.1 Positioning of Agricultural Insurance in the Food Security Strategy and Agricultural Sector

3.1.1 Food Security Strategy in Indonesia

In the inaugural speech of the 8th President, Mr. Prabowo emphasized the importance of food security and self-sufficiency. Also, referring to the law, the Food Law (Food Law, No. 18/2012) was enacted in 2012, establishing three levels of food security: food sovereignty, food self-sufficiency, and food security. In addition, in 2013, the Law on Farmer Protection and Empowerment (Law No. 19, 2013¹) was enacted to improve farmers' welfare and guarantee their rights, and to support sustainable agricultural practices.

In terms of development planning, there is the National Long Term Development Plan (RPJPN), which covers the 20-year period from 2005 to 2025. Under the RPJPN, there is the National Mid Term Development Plan (RPJMN), which covers five years each. The most recent mid-term development plan covers the period 2020-2024, yet by the time this survey is completed in February 2025, a new national mid-term development plan (2025-2029) will have been formulated.

In conjunction with the RPJMN, each ministry/agency develops its own medium-term development plan covering a five-year period. These are called, e.g., the Strategic Plan of MOA (RENSTRA-KL_MOA_2020-2024) and the Strategic Plan of BAPPENAS (RENSTRA-KL_BAPPENAS_202024). Furthermore, based on the strategic plan, each ministry/agency prepares an annual work plan (e.g., Ministry/Agency Work Plan: RENJA-KL_MOA_2024). The table below outlines the contents of these plans and their relation to agricultural insurance.

Table 3.1.1 Indonesian Laws and Development Plans related to Food Security and Agricultural Insurance

| Gov. Policy | Period | Brief Contents |
|---|-------------------------|---|
| Inaugural Address by President Prabowo Subianto 2024/10/29 | Term of office: 5 years | President Prabowo's initiatives in the agricultural sector focus on 1) food security and self-sufficiency ^{2,3} , 2) eliminating farmers' debt ^{4,5} , 3) access to funding ⁶ , and 4) overcoming unemployment and poverty ⁷ . Of these, food security is emphasized as a key issue in national strategy to ensure that the food needs of the people are met. Although agricultural risk management and insurance are not specifically mentioned in the President's pledge, policies such as debt relief and increased access to credit can be considered part of a risk management strategy in the agricultural sector. This will help farmers better manage and respond to financial and operational risks they face, including the provision of agricultural insurance. |
| Law | Year | Brief Contents |
| Food Law, No.18/2012 | Enacted in 2012 | Indonesia's Food Law (No. 18/2012) focuses primarily on food security, safety, and quality under the three levels of food security: food sovereignty, food self-sufficiency, and food security. Although the law does not explicitly provide for agricultural insurance, it establishes a framework to protect farmers from financial losses due to crop damage. Specifically, Article 37 of the Law stipulates that both the central and local |

¹ Law on Farmer Protection and Empowerment (Law No. 19, 2013)

² <https://ditjenpkh.pertanian.go.id/berita/2049-pidato-perdana-presiden-prabowo-subianto-indonesia-harus-swasembada-pangan-dalam-waktu-singkat>

³ <https://www.presidentri.go.id/siaran-pers/presiden-prabowo-tinjau-infrastruktur-areal-lumbung-pangan-di-wanam-merauk/>

⁴ <https://www.detik.com/edu/detikpedia/d-7617079/prabowo-hapus-utang-petani-nelayan-dan-umkm-di-bank-pakar-positif-tapi>

⁵ <https://www.presidentri.go.id/siaran-pers/presiden-prabowo-subianto-tandatangani-pp-tentang-penghapusan-piutang-macet-umkm/>

⁶ <https://www.kompasiana.com/syaifulanwar2876/6705a65934777c01a40a7f82/ekonomi-di-era-presidensial-prabowo-akses-pembiayaan-untuk-pertanian-dan-perikanan>

⁷ <https://pks.id/content/prabowo-andalkan-sektor-pertanian-untuk-atasi-pengangguran-dan-kemiskinan>

Data Collection Survey on Promotion for Introduction of Agricultural Insurance in Indonesia

| | | governments are responsible for protecting farmers from such losses, which can be achieved, for example, through the instrument of agricultural insurance. In other words, this provision emphasizes the government's role in ensuring that farmers have access to economic protection mechanisms and lays the groundwork for the introduction of agricultural insurance as a means of assisting Indonesian farmers. |
|--|----------------------|--|
| Law on Farmer Protection and Empowerment (Law No. 19, 2013) | Enacted in 2013 | <p>Law No. 19/2013 on Farmer Protection and Empowerment in Indonesia aims to guarantee farmers' welfare and farmers' rights and support sustainable agricultural practices. The law emphasizes empowering farmers with resources, technology, and information while protecting their access to land and fair treatment.</p> <p>The law emphasizes the importance of protecting farmers' rights and improving their welfare, which includes economic security against agricultural risks. In other words, one important aspect of the law is the establishment of an agricultural insurance framework to mitigate risks associated with agricultural activities. It allows for the provision of access to insurance products that protect farmers from losses due to natural disasters, pests, and other unforeseen events that negatively affect their crops and livelihoods.</p> <p>The law also encourages governments to promote a more resilient agricultural sector by facilitating the development and implementation of agricultural insurance schemes. Such support is critical to farmer empowerment and economic stability and is vital to Indonesia's food security.</p> |
| Ministerial Decree | Year | Brief Contents |
| Regulation of the Minister of Agriculture: Facilitation of Agricultural Insurance (No. 40 of 2015) | Enacted in 2015 | <p>This Ministerial Decree that specifies the rules for implementing agricultural insurance by the Minister of Agriculture. Based on the Farmers Protection and Empowerment Law (Law No. 19), it states the need for agricultural insurance to help small-scale farmers deal with pest and disease risks and climate change risks.</p> <p>This Ministerial Decree stipulates the specific implementation system for agricultural insurance, and includes provisions on the definition of agricultural insurance, the types of insurance covered by the Ministerial Decree (crop insurance and livestock insurance), how to register for agricultural insurance, insurance companies (designating state-owned or locally-owned insurance companies), insurance premiums and support for insurance premiums, eligible crops, the roles of relevant organizations, etc.</p> |
| Regulation of the Minister of Agriculture: Facilitation of Agricultural Insurance (No. 30 of 2023) | Enacted in 2023 | <p>This revision of the Ministerial Decree on the Implementation of Agricultural Insurance, originally enacted in 2015, introduces two key changes: (1) the scope of agricultural insurance now includes Sharia insurance (insurance based on Islamic principles, refer to 3.2.2 for more details) alongside conventional insurance, and (2) the eligibility criteria for insurance premium subsidies have been refined, specifying that they apply to "small-scale farmers with less than 2 ha and the participation in the government's priority farmland program", rather than "small-scale farmers with less ha 2 ha".</p> <p>Additionally, terminology has been updated to reflect the inclusion of Sharia insurance; for instance, where "premiums" were previously mentioned, the text now refers to "premiums/contributions."</p> |
| Dev. Plan | Year | Brief Contents |
| National Long Term Development Plan (RPJPN) | 20 years (2005-2025) | <p>The Indonesian National Long-Term Development Plan (RPJPN) sets the strategic framework for the country's development over the 20-year period 2005-2025, focusing on sustainable economic growth, social welfare, and enhanced governance to achieve a prosperous and equitable society. It aims to achieve stable and inclusive economic growth while reducing poverty and unemployment, improving access to education and health services, and promoting environmental sustainability.</p> <p>Strategic priorities include infrastructure development, investment in human resources, and governance reforms to strengthen public confidence. While the plan emphasizes key sectors such as agriculture, manufacturing, and tourism, it also encourages decentralization to empower local governments and places priority on reducing regional disparities.</p> <p>While the promotion of agricultural insurance itself is not explicitly stated, it can be assumed that it is implied as a means of protecting farmers from various risks, such as natural disasters and market fluctuations, etc. The RPJPN emphasizes the need for equitable development, especially for disadvantaged groups, which is a key component of the RPJPN's mandate to provide farmers with economic stability. This is consistent with the objective of agricultural insurance promotion to provide farmers with economic security</p> |

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| | | and stability, thereby contributing to poverty alleviation and rural revitalization. |
| National Mid Term Development Plan (RPJMN) | Each 5 years (2020-2024) | <p>The Indonesian National Med Term Development Plan (RPJMN) outlines the government's development priorities and programs over a five-year period as a guideline for the realization of the broader goals set forth in the National Long Term Development Plan (RPJPN), e.g., social welfare, and improved governance in response to current national and global challenges.</p> <p>Its development goals focus on inclusive economic growth, poverty reduction, and improved quality of life, particularly in education, health, and infrastructure. Strategic priorities include promoting economic development through industrialization and entrepreneurship, improving access to quality education and healthcare, and emphasizing environmental sustainability. Other areas of focus are infrastructure development, agriculture and food security, and digital transformation, while governance and institutional strengthening aims to enhance transparency and citizen participation.</p> <p>The National Med Term Development Plan aims to improve food security and support sustainable agricultural practices, recognizing that farmers face a variety of risks, including climate change impacts, natural disasters, and market volatility. In other words, it supports the need for effective risk management tools such as agricultural insurance to ensure the long-term viability of Indonesia's agricultural sector.</p> |
| National Mid Term Development Plan (RPJMN) (Draft) | 2025-2029 | <p>In the RPJMN 2025-2029, the main themes focus on high-quality human resources and infrastructure, sustainable industrial transformation, and the construction and strengthening of the foundations necessary to achieve the goal of "becoming a developed country by 2045."</p> <p>The development goals include enhancing insurance, education, and social security services in the social sphere, as well as fostering highly productive human resources, promoting innovation, and strengthening labor productivity in the economic sphere. Additionally, the plan highlights the importance of developing a legal framework that facilitates the digitization and reform of public services while reinforcing socio-cultural aspects.</p> <p>In the agricultural sector, several key challenges are identified, including low agricultural productivity, limited value-added agricultural products, slow adoption of agricultural technology, an aging farming population, and deteriorating farmland. Addressing these issues is seen as crucial to positioning the agricultural sector as a driving force behind economic reform. Specifically, the plan aims to increase the added value, productivity, and production of strategic agricultural products; improve access to funding in the agricultural sector; support individuals and farming organizations through agricultural business protection; and enhance efficiency through the modernization and digitization of agricultural technology. Notably, agricultural insurance is emphasized as a key support measure, particularly in areas where new paddy fields are being developed to boost food production and expand agricultural land.</p> |
| BAPPEANS Plan | Year | Brief Contents |
| Strategic Plan of Ministry/Agency (RENSTRA-KL)_BAPPENAS | Each 5 years (2020-2024) | <p>The Strategic Planning Document of BAPPENAS for the period 2000-2024 outlines the Agency's vision, mission, and strategic goals to guide Indonesia's national development planning. Its strategic goals include strengthening the development planning process through evidence-based policies, promoting sustainable economic growth by facilitating investment, and reducing poverty and inequality across regions.</p> <p>Areas of focus include integrating environmental sustainability into planning, investing in human capital, and prioritizing infrastructure development. The plan also emphasizes the importance of coordinating efforts among various government agencies and stakeholders, establishing a robust monitoring and evaluation framework, and encouraging community participation to ensure that policies address the needs and aspirations of the population.</p> <p>The document emphasizes the importance of agricultural insurance as part of Indonesia's broader development goals. In other words, the plan recognizes that agricultural insurance coverage is an important means of increasing farmers' resilience to various risks, including climate change, natural disasters, and market fluctuations, and that promoting access to agricultural insurance will reduce farmers' financial risks and promote investment in agricultural productivity and sustainability.</p> <p>The strategic plan for 2025-2029 has not been published as of January 2025.</p> |
| Ministry/Agency Work Plan (RENJA- | Each year | The Indonesian National Development Planning Agency's Work Plan for 2024 (RENJA) outlines the strategic initiatives and programs that will be |

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| KL)_BAPPENAS | (2024) | <p>implemented to realize the country's development goals of promoting sustainable growth, reducing poverty, and improving social welfare. Key areas of focus outlined in the plan include strengthening evidence-based policymaking, promoting investments in strategic sectors, and implementing poverty reduction initiatives specifically targeted at vulnerable populations.</p> <p>It also emphasizes integrating sustainability into development planning and promoting renewable resources and environmental conservation. The plan also aims to strengthen the capacity of local governments and stakeholders, promote cooperation among the various sectors, and establish a solid monitoring and evaluation framework to ensure accountability. Community involvement is encouraged to ensure that policies reflect the needs and desires of the population, and it also calls for greater transparency in decision-making and stakeholder participation.</p> <p>The work plan outlines initiatives to promote awareness and understanding of agricultural insurance among farmers, which is important for increasing their participation in agricultural insurance programs. It also aligns agricultural insurance with broader national development goals, such as food security and the implementation of sustainable agriculture. This suggests that BAPPENAS aims to foster a more resilient agricultural economy that can contribute to the development of the rural community as a whole by integrating agricultural insurance into its higher-level planning framework.</p> |
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| | 2025 | <p>The 2025 BAPPENAS's Work Plan emphasizes the expansion of agricultural land to boost food production. As part of the support measures to be implemented following this expansion, the plan explicitly highlights the need for agricultural insurance, alongside the distribution of essential agricultural inputs. Additionally, agricultural insurance is recognized as a key measure to mitigate rising prices in the agricultural sector.</p> <p>Furthermore, agricultural insurance is specifically included as a form of support in the national priority agenda for the Central Kalimantan region, which aims to strengthen the harmonious coordination of life, nature, and the cultural environment, while promoting religious tolerance to achieve a just and prosperous society.</p> |
| MOA Plan | Year | Brief Contents |
| Strategic Plan of Ministry/Agency (RENSTRA-KL)_MOA | Each 5 years (2020-2024) | <p>The Ministry of Agriculture's Strategic Planning Document (RENSTRA) presents a vision, mission, and strategic objectives aimed at strengthening Indonesia's agricultural sector to address challenges related to food security, rural development, and sustainability. Key strategic objectives include increasing agricultural productivity through modern technology, food security and self-sufficiency in key commodities, and improving rural livelihoods.</p> <p>The plan identifies priority areas for research and development, infrastructure strengthening, capacity building for agricultural professionals, and the promotion of sustainable practices to conserve natural resources. Cooperation among governments, the private sector, NGOs, and international organizations is encouraged to achieve development goals in the agricultural sector, and institutional capacity building is to be undertaken in parallel.</p> <p>The plan emphasizes the importance of agricultural insurance as part of the broader goal of strengthening food security and agricultural competitiveness. The plan seeks to create self-sustaining and prosperous agricultural communities by implementing a range of risk management strategies, including agricultural insurance, to protect farmers from potential losses due to natural disasters, pests, and market fluctuations.</p> <p>The strategic plan for 2025-2029 has not been published as of January 2025.</p> |
| Ministry/Agency Work Plan (RENJA-KL)_MOA | Each year (2024) | <p>The Indonesian Ministry of Agriculture Work Plan for 2024 (RENJA) outlines strategic activities and programs aimed at developing the Indonesian agricultural sector, with an emphasis on increasing productivity, ensuring food security, and promoting sustainable agricultural practices. The plan sets forth key objectives such as strengthening agricultural competitiveness, achieving self-sufficiency in essential commodities, and fostering environmentally friendly agriculture.</p> <p>It also aims to increase production of staple food crops while promoting diversification to improve nutrition. Capacity building through training in modern and sustainable agricultural practices is also a priority, as well as encouraging environmentally friendly practices such as integrated pest management and conservation efforts to protect biodiversity. Also prioritized are infrastructure development to improve irrigation, roads, and storage; agricultural research to create high-yielding crop varieties; and strengthening</p> |

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| | <p>cooperatives and market access.</p> <p>The work plan emphasizes the need to improve access to agricultural insurance products, which are essential to protect farmers from losses due to natural disasters, pests, and other unforeseen events. By promoting agricultural insurance, the plan intends to provide farmers with financial stability, enabling them to invest in their farming operations and improve their livelihoods. In addition, the work plan includes efforts to increase farmers' awareness of the benefits of agricultural insurance and to promote partnerships with insurance providers.</p> |
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Sources: Food Law, Law on Farmer Protection and Empowerment, various Indonesian national development and strategic planning documents and work plans.

1) Staple Food (Rice) among Indonesians

Figure 3.1.1 shows the caloric intake of all food items, including cereals, and Figure 3.1.2 shows the percentage of total food calories accounted for by cereals (the leftmost figure shows the average for Indonesia as a whole, and the right side shows caloric intake by province). Figures 3.1.1 and 3.1.2 show that cereals have the highest caloric intake, followed by processed foods and beverages (No. 13). The share of cereals in the caloric intake of all food items is 42% on average in Indonesia.

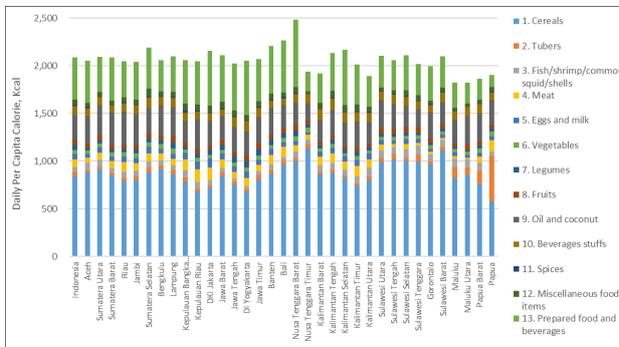


Figure 3.1.1 Caloric Intake for All Food Items
Source: March 2023 Susenas - BPS

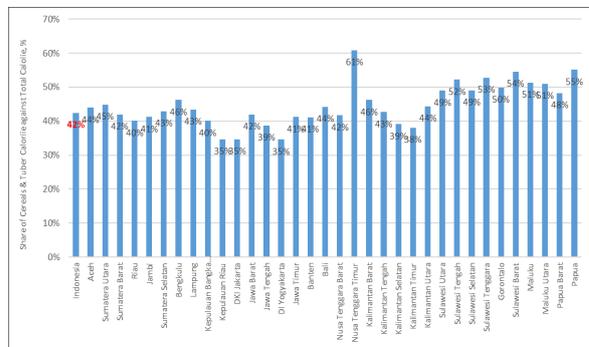


Figure 3.1.2 Caloric Intake of Cereals in All Food Items
Source: March 2023 Susenas - BPS

Figure 3.1.3 shows the caloric intake of carbohydrates only. Carbohydrates in Indonesia include rice, wheat, cassava, and potatoes. In Papua Province (rightmost side of the figure), potatoes are the staple food along with rice, but this is only found in Papua Province.

Figure 3.1.3 shows that Indonesians consume about 800-1000 kcal of energy per day from carbohydrates, and Figure 3.1.4 shows the share of caloric intake of rice among all carbohydrates. In fact, rice accounts for 94% of the Indonesian average of carbohydrates, and in some provinces the share is as high as 98%. This indicates that rice is the staple food of Indonesians, and rice is their first choice when it comes to food security.

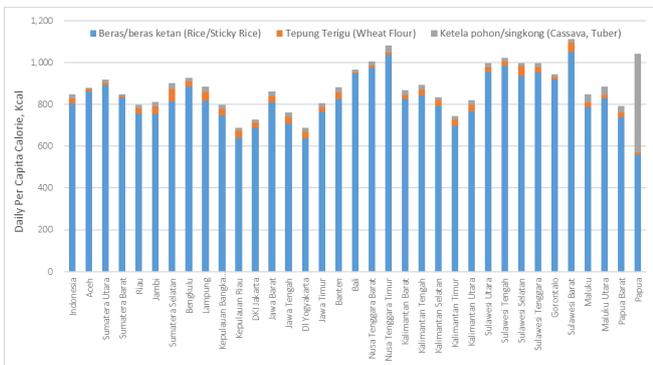


Figure 3.1.3 Caloric Intake of All Carbohydrates including Rice
Source: March 2023 Susenas - BPS

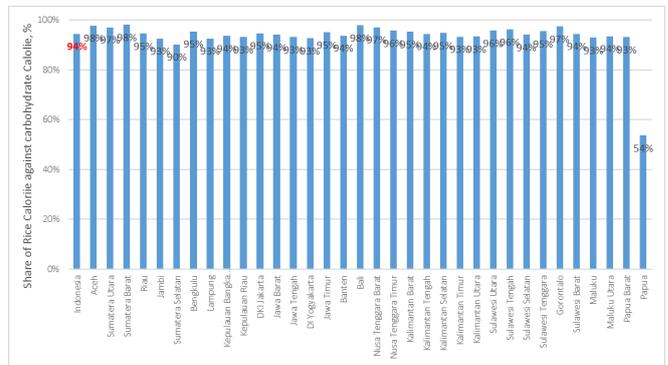


Figure 3.1.4 Caloric Intake of Rice in All Carbohydrate
Source: March 2023 Susenas - BPS

2) Security Framework for Staple Food (Rice) in Indonesia

In accordance with Presidential Decree No. 177/2001, the Food Security Agency was established as one of the directorates of the Ministry of Agriculture. The Ministry of Agriculture's Ministerial Decree No. 43/2015 stipulates that it is responsible for coordinating and shaping policy aspects related to food security and food diversification. In addition, since 2005, the Food Procurement Cooperation (Perum BULOG) has been responsible for the management of the government stockpile of rice according to Presidential Decree No. 48/2016).

BULOG's role in food security is three-fold: first, to purchase rice (both unhusked and milled) at the price stipulated in the Government Purchase Price (GPP); second, to sell rice to low-income households at low prices through government subsidies under the Relief for the Poor Program (RASKIN); and third, to contribute to the distribution and stabilization of government rice reserves managed by BULOG in times of emergency, disaster, or other food security crises.

BULOG has 26 local departments, 101 local branch offices, and 463 warehouses nationwide, and according to information, the combined stockpiling capacity of all warehouses is approximately 3.6 mt. BULOG is required to hold 1 million tons of milled rice in stock at any given time, and if it expects to fall below this level, BULOG is required to keep the 1 million tons of milled rice in stock at all times through domestic procurement or importation.

The amount of rice traded through BULOG is illustrated in Figure 3.1.5. It is assumed that rice distributed through BULOG accounts for only 5-10% of the total, which suggests that the government's control over the rice market nowadays is limited. The rice procured and distributed by BULOG is mainly used for poverty reduction and market intervention policies.

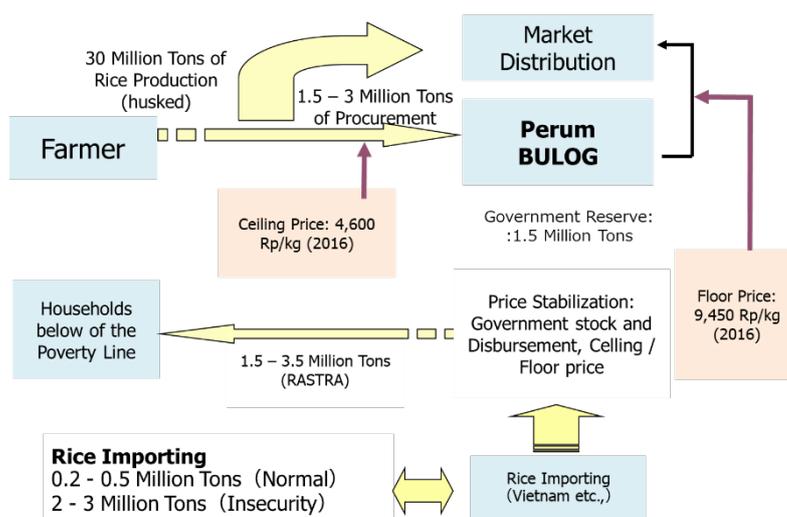


Figure 3.1.5 Market Intervention Framework through BULOG

Source: The Project on Formulation of Irrigation Development and Management Strategy for Food Security in the Republic of Indonesia, Final Report, May 2022, JICA

3) Self-sufficiency Level of Staple Foods in Indonesia

Although the Indonesian nation has given high priority to food security, it is also a net importer of rice. Figure 3.1.6 shows the amount of imported rice (in terms of milled rice, light blue bars) along with its share in Indonesia's total rice production. Note that this import volume as a percentage of Indonesia's total rice production is shown for both the original rice production estimated by the previous method (gray line) and the rice production adjusted by the new BPS method (32% reduction applied to adjust the production after 2016, see red line).

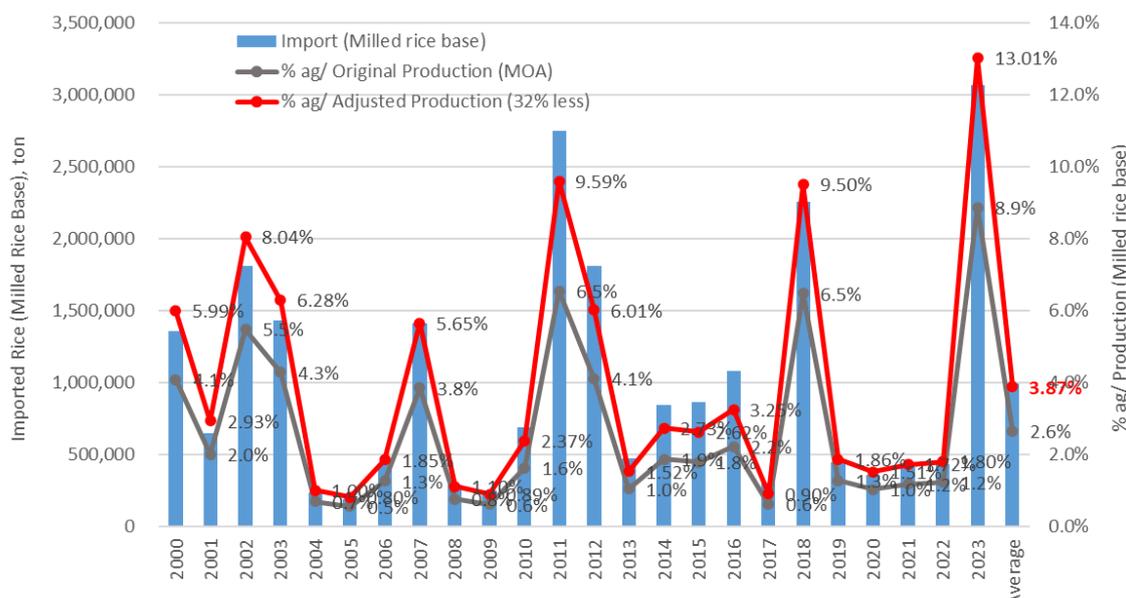


Figure 3.1.6 Rice Import Volume and Share against the Total Rice Production in Indonesia

Source: Statistics Indonesia (Badan Pusat Statistik; BPS), MOA

The figure shows that the Indonesian nation imports a minimum of 200,000 tons and a maximum of over 3 million tons of milled rice each year, with an average annual import volume of approximately 1 million tons⁸. If we look at the import sources by country, Vietnam, India, Thailand and Pakistan are the four largest import sources (see Figure 3.1.7). The average import volume corresponds to approximately 3.9% of Indonesia's total rice production (imports as a percentage of adjusted production). In other words, Indonesia's rice self-sufficiency rate has reached approximately 96%. However, due to its large population, the volume of imports is quite high, reaching 1 million tons per year on average.

Although there is no officially announced per capita rice consumption in Indonesia, it was 110.9 kg as of 2017, according to the JICA study, “Project for Formulation of Long-Term Strategy for Irrigation Development and Management for Food Security in Indonesia”. This includes 82.4 kg consumed through home cooking, 15.0 kg consumed as prepared food, and 13.5 kg for other uses and waste. 1 million tons of imported milled rice divided by 111 kg yields 9 million population. It means that

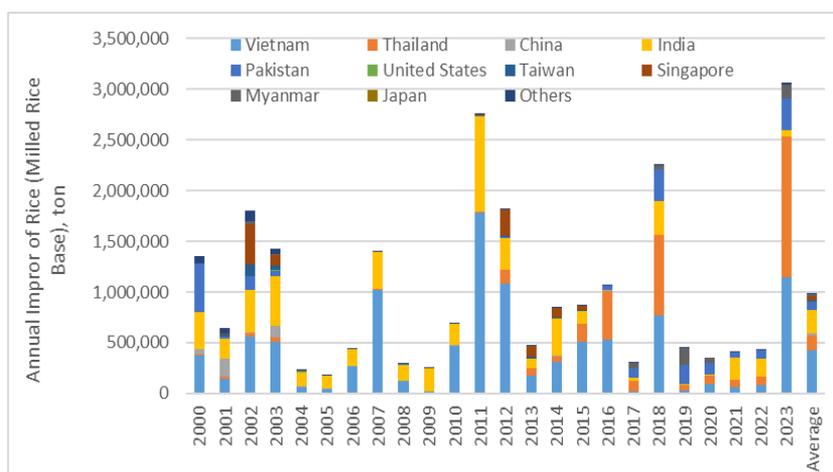


Figure 3.1.7 Rice Import to Indonesia by Source Country, ton

Source: Statistics Indonesia (Badan Pusat Statistik; BPS), MOA

⁸ The most recent import volume from 2017 to 2023 was 1.04 million tons per year (on a milled rice basis), and the CIF \$ price was 534 million \$. The import volume in 2023 was 3.06 million tons (on a milled rice basis), the largest ever, and the CIF \$ price at that time was 1,789 million \$. Meanwhile, Indonesia's national budget for 2024 was 216 billion dollars, and the budget for food security was 7,427 million dollars. Accordingly, the average and maximum import costs against the national budget account for 0.25% and 0.83%, respectively. In addition, the average and maximum import costs against the food security budget account for 7.2% and as much as 24%, respectively.

Indonesia as an average, every year, imports rice for feeding as many as 9 million population.

3.1.2 Positioning of Agricultural Insurance in the Agricultural Sector

(1) Positioning in terms of the Law, National Level Plans (Long-term, Medium-term), and Five-Year Strategic Plans, etc.

Table 3.1.1 above summarizes the presidential pledges, laws and development plans related to food security and agricultural insurance in Indonesia. According to this, President Prabowo emphasizes food security as a key issue in the national strategy to ensure that the food needs of the people are met. Although agricultural risk management and insurance are not specifically mentioned in the President's pledge, policies such as debt relief and increased access to loans can be considered as part of a risk management strategy in the agricultural sector.

According to the laws and development plans related to food security and agricultural insurance in Indonesia, in fact, they do not explicitly mention the need for or introduction of agricultural insurance due to their rather past enactment. For example, the first AOTP was implemented in 2015, while the starting years of the Food Law, Law on Farmer Protection and Empowerment, and National Long-term Development Plan were 2012, 2013, and 2005, respectively.

However, the Food Law, for example, establishes a framework to protect farmers from economic losses due to crop damage, and Article 37 of the Law further stipulates that both the central and local governments are responsible for protecting farmers from such losses. This can be accomplished through the means of agricultural insurance, for example, and thus provides the basis for the introduction of agricultural insurance.

The Law on Farmer Protection and Empowerment emphasizes protecting farmers' rights and improving their welfare. This includes economic security against agricultural risks. In other words, one of the key aspects of the law provides the need for agricultural insurance to mitigate risks associated with agricultural activities. Furthermore, although the National Long-Term Development Plan does not explicitly state the promotion of agricultural insurance, it can be assumed that it implies the promotion of agricultural insurance as a means of protecting farmers from various risks, such as natural disasters and market fluctuations.

Under the National Long-Term Development Plan (covering 20 years), there is a National Medium-Term Development Plan (covering 5 years), a further 5-year strategic plan document to be prepared and implemented by each ministry, and a work plan to be prepared annually. Referring to Table 3.1.1 above, the National Medium-Term Development Plan aims to improve food security and support sustainable agricultural practices, recognizing that farmers face a variety of risks, including climate change impacts, natural disasters, and market fluctuations. In other words, it confirms the need for risk management tools such as agricultural insurance to ensure the long-term sustainability of Indonesia's agricultural sector.

The strategic plan documents of MOA and BAPPENAS both emphasize the importance of agricultural insurance. For example, the Ministry of Agriculture's strategic plan document aims to create self-sustaining and prosperous agricultural communities by implementing various risk management strategies, including agricultural insurance, to protect farmers from potential losses due to natural disasters, pests, and market fluctuations.

Meanwhile, BAPPENAS strategic plan document recognizes that the promotion of agricultural insurance is an important means of increasing farmers' resilience to various risks, including climate change, natural disasters, and market fluctuations. In other words, by facilitating access to agricultural insurance, the plan aims to reduce farmers' financial risks and promote investment in agricultural productivity and sustainability.

The same is true in the annual work plans of MOA and BAPPENAS. Referring to the MOA's work plan, it emphasizes the need to improve access to agricultural insurance products, which are essential to protect farmers from losses due to natural disasters, pests, and other unforeseen events. By promoting agricultural insurance, the intention is to provide farmers with financial stability, enabling them to invest in their farming operations and improve their livelihoods. In addition, the work plan includes efforts to raise farmers' awareness of the benefits of agricultural insurance and to promote partnerships with insurance providers.

As mentioned above, the importance of agricultural insurance in Indonesia is implicit and explicit in both the law and the higher-level national development plans (long- and medium-term plans), as well as in the five-year strategic planning documents of MOA and BAPPENAS, and in the annual work plans. In fact, the introduction and promotion of agricultural insurance is specifically indicated in the five-year strategic planning documents and annual work plans. Thus, agricultural insurance in Indonesia is clearly positioned as a necessity and as a priority implementation in the country's agricultural sector.

(2) Positioning of Agricultural Insurance in terms of Food Security

In the above, it was made clear that rice is the staple food of Indonesians. In fact, rice accounts for 94% of Indonesians' carbohydrate intake in terms of calories on nationwide average. In other words, when considering food security in Indonesia, the first priority is given to rice. Although Indonesia has been able to significantly increase its rice production, it has been importing rice almost every year, due probably to its high population growth rate.

The average annual rice imports are 1 million tons (on a milled basis), and in a year the import exceeded 3 million tons. The average import of 1 million tons is roughly equivalent to the rice consumption of 9 million people. Various measures will be necessary to ensure self-sufficiency in rice, the staple food of the country.

For example, irrigation facilities should be improved; farmland should be prevented from being diverted to other uses; and fertilizer should be applied appropriately to increase yield. The promotion and dissemination of agricultural insurance can play a major role in this regard. In other words, the promotion and dissemination of agricultural insurance is important from the perspective of food security.

(3) Agricultural Ministry Budget Trends in 2025 Under the New Prabowo Administration

As mentioned earlier, the new government under President Prabowo, which took office in October 2024, has pledged to prioritize food security. To achieve this, it has identified eight key programs: (1) providing free school meals, (2) offering free health check-ups, (3) achieving food self-sufficiency through food estate development, (4) establishing advanced educational institutions, (5) expanding the social welfare card program, (6) increasing salaries for civil servants, police officers, and soldiers, (7) improving access to housing, and (8) enhancing the National Revenue Agency and tax collection efficiency⁹. Under President Prabowo's administration, these programs take precedence, meaning that national budget allocations will focus on their implementation.

In the 2025 State Budget (RAPBN), the Ministry of Agriculture has been allocated 7.906 trillion IDR (approximately 66.4 billion yen), with 60.9% (around 40 billion yen) designated for national priority programs¹⁰. These funds will support key initiatives such as boosting agricultural productivity, developing new rice paddies, improving food production infrastructure, promoting local agricultural products, and strengthening traceability and biosecurity measures. Through these efforts, the

⁹ <https://www.mof.go.jp/pri/research/conference/aseanws/2024/20241113-2.pdf>

¹⁰ HIMPUNAN RENCANA KERJA DAN ANGGARAN KEMENTERIAN NEGARA / LEMBAGA (RKA - K/L) TAHUN ANGGARAN 2025: <https://media.kemenkeu.go.id/getmedia/6ecae803-b27d-4427-8ccf-3fca8bf2facb/03-BUKU-III-HIMPUNAN-RENCANA-KERJA-DAN-ANGGARAN-RAPBN-TA-2025.pdf?ext=.pdf>

government aims to enhance food security and ensure the sustainability of Indonesia’s agricultural sector.

Additionally, 11.1% (about 7.3 billion yen) of the ministry’s budget is earmarked for other priority programs¹¹, including the development of staple crops like rice, corn, and soybeans, livestock breeding, agricultural machinery distribution, pest and disease control, and irrigation system improvements. These initiatives seek to modernize agriculture, strengthen supply chains, and enhance the overall competitiveness of the sector.

Despite these commitments, the budget for agricultural insurance (AUTP) has faced significant cuts. Initially, a budget allocation was set to cover 400,000 hectares of insured farmland, with the December 2024 Budget Implementation List (DIAP) earmarking approximately 5.7 billion IDR (around 530 million yen) for premium subsidies¹². However, as of January 2025, these funds are expected to be reallocated to other prioritized activities as budget adjustments prioritizing food self-sufficiency and rice production. While agricultural insurance remains a vital tool for ensuring food security, its importance being reaffirmed in various policy documents, its future funding has become increasingly uncertain.

3.2 Overview of the Non-Life Insurance Market in Indonesia

3.2.1 Recent Trends of the Non-Life Insurance Market in Indonesia

In Indonesia, the Financial Services Authority (Otoritas Jasa Keuangan: OJK) serves as the insurance regulatory body, overseeing the industry under the Insurance Law and government ordinances outlined in Law of the Republic of Indonesia Number 40 of 2014, Chapter V, Article 25. Under this framework, all domestic property must be insured by a licensed insurance company registered with the OJK. Additionally, minimum capital requirements are set for each type of insurance, with property insurance requiring a minimum of IDR 500 billion.

In 2023, total direct insurance premiums amounted to IDR 268.7 trillion, with non-life insurance premiums contributing nearly 50% (IDR 111.4 trillion). As shown in Figure 3.2.1, the trend in direct premiums of non-life insurance over the past five years has been gradually increasing, except for a temporary decline during the COVID-19 pandemic.

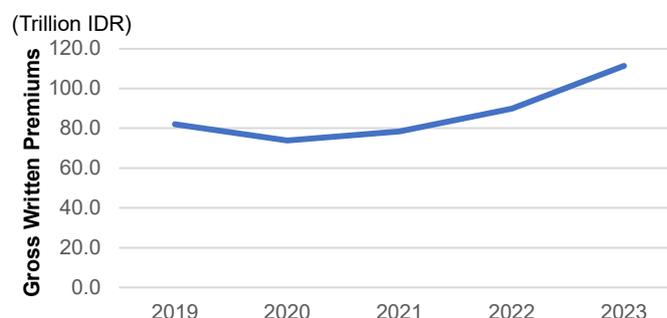


Figure 3.2.1 Trends in Non-Life Insurance Premiums in Indonesia

Source: JICA Survey Team based on AXCO Report

The breakdown of non-life insurance premiums is illustrated in Figure 3.2.3, where property insurance holds the largest share, followed by automobile insurance. Together, these two categories account for the majority of total non-life insurance premiums.

As shown in Figure 3.2.3, the loss ratio for non-life insurance has remained stable at around 40% over the past five years, staying within a range that allows insurance companies to maintain financial balance.

¹¹ HIMPUNAN RENCANA KERJA DAN ANGGARAN KEMENTERIAN NEGARA / LEMBAGA (RKA - K/L) TAHUN ANGGARAN 2025: <https://media.kemenkeu.go.id/getmedia/6ecae803-b27d-4427-8ccf-3fca8bf2facb/03-BUKU-III-HIMPUNAN-RENCANA-KERJA-DAN-ANGGARAN-RAPBN-TA-2025.pdf?ext=.pdf>

¹² Interview results with MOA

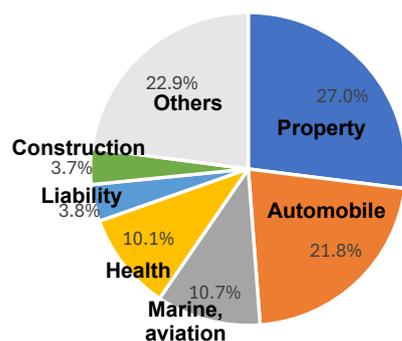


Figure 3.2.2 Breakdown of Non-Life Insurance Premiums

Source: JICA Survey Team based on AXCO Report

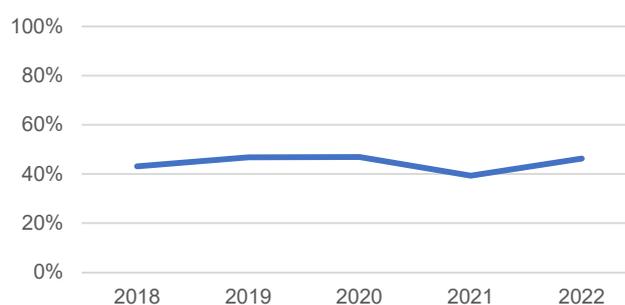


Figure 3.2.3 Loss Ratio for Non-Life Insurance in Indonesia

Source: JICA Survey Team based on SOMPO Holdings report

3.2.2 Market Structure of Non-Life Insurance in Indonesia

In Indonesia, both state-owned and private insurance companies operate in the market. The four state-owned insurance companies are as follows. Additionally, PT Bahana Pembinaan Usaha Indonesia (BPUI) serves as a state-owned holding company that owns shares in these four companies.

Table 3.2.1 State-Owned Insurance Companies in Indonesia

| Name | Overview |
|---|--|
| PT Asuransi Jasa Raharja | Administrator of the Passenger Accident Compensation Insurance Fund for accidents that occur on public transport |
| PT Asuransi Jasa Indonesia (JASINDO) | Provides most types of non-life insurance, including agricultural insurance |
| PT Asuransi Kredit Indonesia (Askrindo) | Provides domestic credit insurance. Also provides reinsurance |
| PT Jaminan Kredit Indonesia (Jamkrindo) | Provides credit guarantees for small and medium-sized enterprises |

Sources: JICA Survey Team based on AXCO Report

As of 2022, there are 78 non-life insurance companies and 8 reinsurance companies in the private sector¹³. The top 10 non-life insurance companies and the top 5 reinsurance companies, ranked by market share, are as follows. Among them, the state-owned PT Asuransi Kredit Indonesia (Askrindo) holds the second position, while JASINDO ranks sixth. This indicates a relatively significant presence of state-owned companies in the market.

Table 3.2.2 Top 10 Non-Life Insurance Companies in Indonesia (2022)

| Rank | Company | Gross Written Premium (M IDR)(2022) | Share |
|------|-----------------------------------|-------------------------------------|--------|
| 1 | PT Asuransi Sinar Mas | 9,257,258.83 | 10.87% |
| 2 | PT Asuransi Kredit Indonesia | 5,923,373.95 | 6.95% |
| 3 | PT Asuransi Astra Buana | 5,666,949.74 | 6.65% |
| 4 | PT Asuransi Bangun Askrida | 5,219,577.87 | 6.13% |
| 5 | PT Asuransi Central Asia | 3,422,029.35 | 4.02% |
| 6 | PT Asuransi Jasa Indonesia | 3,250,357.00 | 3.82% |
| 7 | PT Zurich Asuransi Indonesia Tbk. | 2,706,772.71 | 3.18% |
| 8 | PT Asuransi Wahana Tata | 2,639,137.67 | 3.10% |
| 9 | PT Lippo General Insurance Tbk. | 2,594,837.53 | 3.05% |
| 10 | PT Sampo Insurance Indonesia | 2,567,235.28 | 3.01% |

Sources: JICA Survey Team based on AXCO Report

¹³ OJK HP, <https://www.ojk.go.id/id/kanal/iknb/data-dan-statistik/asuransi/Pages/Statistik-Perasuransian-2023.aspx>

Table 3.2.3 Top 5 Reinsurance Companies in Indonesia (2022)

| Rank | Company | Gross Written Premium (M IDR)(2022) | Share |
|------|--------------------------------------|-------------------------------------|--------|
| 1 | PT Reasuransi Nasional Indonesia | 7,011,792.43 | 28.67% |
| 2 | PT Reasuransi Indonesia Utama | 6,044,554.14 | 24.72% |
| 3 | PT Reasuransi Nusantara Makmur | 5,549,867.25 | 22.69% |
| 4 | PT Tugu Reasuransi Indonesia | 2,809,137.46 | 11.49% |
| 5 | PT Maskapai Reasuransi Indonesia Tbk | 2,656,235.94 | 10.86% |

Sources: JICA Survey Team based on AXCO Report

In 2023, direct sales accounted for 25.3% of total insurance sales, roughly one-quarter of the market. Sales through agents made up 13.1%, while brokers accounted for 31%. As of 2022, Indonesia had 155 registered non-life insurance brokers and 41 reinsurance brokers¹⁴.

Indonesia also has a market for Islamic insurance, known as Takaful, which is commonly referred to as Sharia in the country. This market operates in two ways: through specialized Sharia insurance companies and general insurance companies that have a Sharia division. As of 2022, there were six dedicated Sharia insurance companies and 19 general insurance companies with Sharia departments¹⁵.

The following are insurance companies specializing in Sharia:

- Asuransi Takaful Syarikat
- Asuransi Takaful Umum
- PT Zurich General Takaful Indonesia(Zurich Sharia): It became an independent from PT Zurich Asuransi Indonesia Tbk. in 2021

The following are insurance companies with Takaful department (Sharia):

- Sinar Mas
- Astra Buana
- Tugu Pratama Indonesia
- Central Asia
- Sampo Insurance Indonesia

Furthermore, the OJK has announced plans to raise capital requirements for Takaful (Sharia) insurance companies starting in 2024. The increase will be implemented in phases, with deadlines at the end of 2026 and the end of 2028. As a result, industry restructuring, including potential mergers, is expected in the coming years.

Table 3.2.4 Takaful/ Sharia Insurance Companies

| Company | Rank in Market Share | Market Share |
|-------------------------------------|----------------------|--------------|
| PT Asuransi Central Asia | 5 th | 4.02% |
| PT Mandiri AXA General Insurance | 27 th | 1.07% |
| PT Asuransi Bintang Tbk. | 47 th | 0.54% |
| PT Zurich General Takaful Indonesia | — | — |

Sources: JICA Survey Team based on AXCO Report

3.2.3 Agricultural Insurance Market in Indonesia

In Indonesia, agricultural insurance is primarily provided by the Ministry of Agriculture and JASINDO, including the AOTP program. However, in recent years, private insurance companies have also begun exploring agricultural insurance initiatives.

¹⁴ OJK HP, <https://www.ojk.go.id/id/kanal/iknb/data-dan-statistik/asuransi/Pages/Statistik-Perasuransian-2023.aspx>

¹⁵ OJK HP, <https://www.ojk.go.id/id/kanal/iknb/data-dan-statistik/asuransi/Pages/Statistik-Perasuransian-2023.aspx>

Currently, two foreign insurers (Zurich and AXA) and two local insurers (ACA and Bintang) have been identified as handling agricultural insurance in Indonesia. However, none of these initiatives have reached the commercialization stage and remain in the pilot phase. These companies are developing index-based insurance models that rely on indicators such as rainfall and soil moisture (See “Section 3.5 Initiatives for Agricultural Insurance by the Private Sector” for more details).

3.2.4 Recent Initiatives by Other Donors in Agricultural Insurance

In 2017, the International Finance Corporation (IFC), a member of the World Bank Group, began supporting the technical design and development of agricultural insurance for PT Reasuransi MAIPARK, a private local reinsurance company. In 2018, the World Bank published a report on the development of climate parametric insurance, using Central Java as a case study. This report demonstrated the feasibility of parametric insurance based on a drought index for rice and served as a complement to the IFC's support efforts.

Since 2019, the International Fund for Agricultural Development (IFAD) has been implementing the INSURED program¹⁶ in collaboration with MOA and BAPPENAS. This program focuses on the coffee and cocoa value chains and includes an agricultural and climate risk assessment of AUDP. As part of this initiative, index insurance is being developed with Blue Marble as the key implementing partner. This insurance model is designed to provide frequent small payments to protect small-scale farmers, with payouts triggered when rainfall or drought levels exceed predefined thresholds.

GIZ is currently implementing the Agri-Climate Risk Financing Project (AgriCRF) in partnership with the ASEAN Secretariat. This project aims to enhance farmers' financial capacity (Climate Risk Finance) to cope with weather-related risks, with agricultural insurance as a key component. Indonesia serves as a pilot country for AgriCRF, where agricultural insurance is being developed in collaboration with cacao farmers, off-takers, and agricultural input suppliers on Sulawesi Island.

The broader goal of AgriCRF is to strengthen climate resilience across the ASEAN region by fostering regional cooperation and capacity-building in Indonesia, Thailand, and Vietnam. This initiative represents a proactive approach to climate adaptation in the agricultural sector, promoting collaboration among various stakeholders and encouraging sustainable practices that can mitigate the impacts of climate change. The following section provides a summary of AgriCRF.

Table 3.2.5 Overview of AgriCRF by GIZ

| | |
|-------------------------|---|
| Project Title | Agri-Climate Risk Financing Project (AgriCRF) |
| Target Countries | Regional level: 10 ASEAN member states Country level: Indonesia, Thailand, and Vietnam |
| Partners | <ul style="list-style-type: none"> • Food, Agriculture and Forestry Division of ASEAN Secretariat • ASEAN Sectoral Working Group on Crops (ASWGC) |
| Duration | • January 2023 – December 2025 (3 years) |
| Funding Body | German Federal Ministry for Economic Cooperation and Development (BMZ) |
| Budget | 4 million Euro |

¹⁶ INSURED (Insurance for Rural Resilience and Economic Development) is an agricultural insurance initiative launched by IFAD in 2018. The initiative provides technical assistance for agricultural insurance, aiming to enhance the resilience of smallholder farmers to climate change. Implemented by IFAD, the program is supported by \$6 million in funding from the Swedish International Development Cooperation Agency (Sida). To date, INSURED has been active in several countries, including the Philippines, Indonesia, Vietnam, Cambodia, Nepal, Ethiopia, Kenya, Uganda, Rwanda, Zambia, and Malawi.

| | |
|-----------------|--|
| Approach | <p>Objective: To strengthen the resilience of farmers and improve access to gender-sensitive climate risk finance.</p> <p>1) Promoting climate risk finance in the ASEAN region: Conducting technical exchanges in the ASEAN region and formulating policy documents on strengthening climate risk finance in the agricultural sector (targeting 10 ASEAN countries)</p> <p>2) Increasing the supply of climate risk finance: Targeting financial institutions, developing climate risk finance products and conducting training on related topics (Indonesia, Thailand, Vietnam)</p> <p>3) Improving the capacity of stakeholders: Developing and implementing training programs for farmers and partner organizations other than financial institutions (Indonesia, Thailand, Vietnam)</p> <p>Sustainable climate risk finance: Promoting the linkage between management standards for sustainable agricultural production and climate risk finance (Indonesia, Thailand, Vietnam)</p> |
|-----------------|--|

Sources: JICA Survey Team

According to GIZ staff working in Indonesia, the project has three key characteristics: pilot activities, collaboration with the private sector, and a focus on climate risk management.

- ✓ **Pilot activities:** In Indonesia, the project is implementing pilot initiatives designed to serve as a model for the entire ASEAN region. These activities aim to generate valuable insights and best practices that can be applied across the region.
- ✓ **Collaboration with the private sector:** The project is working closely with established partnerships in the cocoa industry, engaging with off-takers and downstream companies. By leveraging these relationships, the project seeks to mitigate the impact of climate change on agricultural production by integrating climate risk management strategies and introducing response measures, including potential insurance solutions.
- ✓ **Focus on climate risk management:** Recognizing the critical importance of addressing climate risks, particularly for farmers and agricultural stakeholders, the project aims to enhance the resilience of the agricultural supply chain. It does so by incorporating insurance as a key risk management tool to help farmers adapt to the challenges posed by climate change.

Since 2023, the Japan-ASEAN Integration Fund (JAIF), under the ASEAN Secretariat, has been implementing the "Promotion of Crop Insurance in ASEAN through Public-Private Partnership" project across all 10 ASEAN countries. This initiative aims to strengthen regional cooperation through capacity building and experience sharing in agricultural insurance. Although the project is not exclusive to Indonesia, a series of workshop sessions have facilitated the exchange of experience and knowledge, including the pilot project for yield index insurance in Indonesia.

Table 3.2.6 Overview of JAIF Funded Project for Agricultural Insurance

| | |
|----------------------------|---|
| Project Title | Promotion of Crop Insurance in ASEAN through the Public and Private Partnership |
| Target Countries | 10 ASEAN member states |
| Proponent | Department of Agriculture, Ministry of Agriculture and Cooperatives in Thailand |
| ASEAN Body | <ul style="list-style-type: none"> • Food, Agriculture and Forestry Division of ASEAN Secretariat • ASEAN Sectoral Working Group on Crops (ASWGC) |
| Duration | <ul style="list-style-type: none"> • October 2023 – April 2025 (19 months) |
| Implementing Agency | Sanyu Consultants Inc. |

| | |
|-------------------|--|
| Activities | <p>Objectives:</p> <ol style="list-style-type: none"> 1) Enhance understanding of agricultural insurance – Utilize agricultural insurance products, information, and knowledge while sharing experiences to deepen awareness of its importance. 2) Strengthen regional cooperation – Support the development and improvement of cost-effective agricultural insurance across ASEAN countries. 3) Promote public-private partnerships – Foster collaboration between the public and private sectors in the development and implementation of agricultural insurance within ASEAN member states. <p>Main Expected Results:</p> <ul style="list-style-type: none"> ✓ Conduct a technical workshop to identify gaps and challenges related to crop and agricultural insurance. ✓ Organize workshops to support ASEAN member states (AMS) in preparing for insurance operations or developing new insurance products. ✓ Hold workshops and summary sessions to explore potential areas for regional cooperation on crop and agricultural insurance, as well as related strategies and activities. ✓ Prepare a stock-taking survey report on the implementation status of crop insurance across ASEAN countries. ✓ Develop knowledge resources on crop insurance based on the shared interests and needs of ASEAN member states. |
|-------------------|--|

Sources: Sanyu Consultants Inc.

3.3 Government Initiative for Agricultural Insurance

3.3.1 Implementation Status of the Government Program (AUTP: Asuransi Usaha Tani Padi)

1) History of the Implementation of AUTP (Asuransi Usaha Tani Padi)

In the agricultural sector, there have long been two issues: the establishment of agricultural banks and the introduction of agricultural insurance, due to the high risk of agricultural management. The legality of introducing agricultural insurance was secured based on Law No. 19 of 2013 on the Protection and Empowerment of Farmers. In response, the Ministry of Agriculture began pioneering the introduction of agricultural insurance for rice and livestock farming, and carried out a pilot project from 2012 to 2014, aiming for full-scale implementation from 2015.

From 2012 to 2014, the Ministry of Finance approved the implementation of a pilot agricultural insurance project involving crop damage insurance. The implementation of the pilot project was expected to provide lessons for insurance in the agricultural sector. Table 3.3.1 summarizes the results of the pilot project implemented from 2012 to 2014. From the table, we can see that the pilot project was implemented in two provinces, East Java and South Sumatra, in 2012 and 2013, and in East Java and West Java in 2014. The total area covered by the project was 623 ha, 2,203 ha, and 998 ha in 2012, 2013, and 2014, respectively.

Table 3.3.1 Overview of the AUTP Pilot Projects Implemented from 2012 to 2014

| Year | Province | Kabupaten | Area Joined, ha | Area Claimed, ha | Ratio, % |
|------|---------------|-----------|-----------------|------------------|----------|
| 2012 | East Java | Tuban | 320.00 | 80.00 | 25.00 |
| | | Gresik | 150.87 | | |
| | South Sumatra | OKU Timur | 152.25 | 7.28 | 4.78 |
| | Total | | 623.12 | 87.28 | 29.78 |
| 2013 | East Java | Jombang | 727.50 | 16.00 | 2.20 |
| | | Nganjuk | 709.11 | | |
| | South Sumatra | OKU Timur | 766.25 | 42.50 | 5.55 |
| | Total | | 2202.86 | 58.50 | 7.75 |
| 2014 | East Java | Jombang | 496.00 | 4.69 | 0.95 |
| | | Nganjuk | 251.00 | 0.50 | 0.20 |
| | | Lumajang | 127.00 | 11.70 | 9.21 |
| | West Sumatra | Grebon | 123.00 | 34.70 | 28.21 |
| | Total | | 997.700 | 51.59 | 38.57 |

Source: ASURANSI PENGAYOM PETANI PEMBELAJARAN DAN ARAH PENGEMBANGAN, Andi Amran

2) Implementation Status of the AOTP to Date Since 2015

Figure 3.3.1 and Table 3.3.2 show the area of land covered by the AOTP, accumulated by each island, over the past nine years (2015-2023). According to this, the total area of AOTP in Indonesia in 2015 and 2016 was approximately 230,000 ha and 500,000 ha respectively, and from 2017 onwards, the target was to continue until 2020 at approximately 1 million ha (note that the area in 2018 was approximately 810,000 ha). From 2021 onwards, the area has been decreasing year on year, from around 400,000 ha to 320,000 ha.

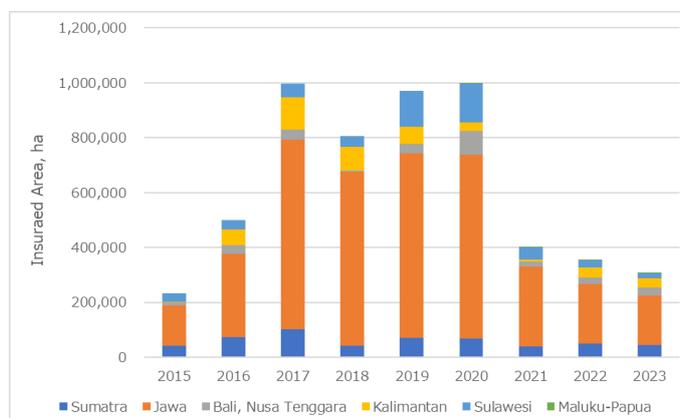


Figure 3.3.1 AOTP-covered Area (ha) by Island, 2015-2023

Source: Ministry of Agriculture, JASINDO

As mentioned above, the pilot project for

AOTP was implemented from 2012 to 2014, and full-scale implementation of AOTP began in 2015. In 2015, the initial target for AOTP was 1 million ha, but only 233,500 ha (23%) was achieved. The government subsidy for insurance premiums (80%) was 33.63 billion IDR. Meanwhile, in 2016, the achievement rate of the AOTP was 499,962 ha (50%) compared to the target of 1 million ha. The reason for the failure to achieve the target was that farmers' understanding of insurance was still low and insurance enrollment was not optimized¹⁷.

However, for the four years from 2017 onwards, the target of almost 1 million hectares has been achieved (except for 2018). Then, from 2021 onwards, the target area decreased to less than half or just under one-third of the target area, mainly due to the reduction of the subsidy for 80% of insurance premiums. In 2020, due to the impact of the coronavirus pandemic, the rise in import prices, and investment in the new capital of Indonesia, there was a reduction in the budget for the Ministry of Agriculture, and as a result, it was not possible to secure sufficient subsidies for the AOTP.

There are approximately 8.16 million hectares of paddy field throughout Indonesia. Of this, 4.75 million hectares are under irrigation while 3.42 million hectares are under rain-fed. Currently, the AOTP can be applied to both irrigated and rain-fed paddy fields, but in reality, most of the insured area are with irrigation. If we calculate the ratio of the 1 million ha of paddy fields that have been enrolled to date to the total area of paddy fields, as shown in the lower part of Table 3.3.2, it comes to 12% (for reference, the ratio to the area of irrigated field and rain-fed field is 21% and 29%, respectively).

Table 3.3.2 Trends in AOTP-covered Area (ha) by Island, 2015-2023

| No | Region | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2017-2023 | 2015-2023 |
|----|--------------------------------|---------|---------|---------|---------|---------|-----------|---------|---------|---------|---|-----------|
| 1 | Sumatra | 42,498 | 73,113 | 102,555 | 43,222 | 71,008 | 69,463 | 38,907 | 51,173 | 44,796 | 421,125 | 536,736 |
| 2 | Jawa | 145,111 | 303,128 | 691,336 | 631,870 | 673,418 | 667,998 | 292,057 | 216,559 | 181,149 | 3,354,387 | 3,802,626 |
| 3 | Bali, Nusa Tenggara | 11,132 | 31,747 | 36,458 | 6,617 | 32,851 | 86,182 | 16,528 | 23,967 | 27,224 | 229,826 | 272,705 |
| 4 | Kalimantan | 4,132 | 58,196 | 117,236 | 84,894 | 61,676 | 32,751 | 9,154 | 34,783 | 34,144 | 374,638 | 436,967 |
| 5 | Sulawesi | 30,626 | 33,779 | 50,375 | 39,596 | 132,266 | 139,867 | 42,894 | 26,749 | 17,752 | 449,499 | 513,904 |
| 6 | Maluku-Papua | - | - | - | - | - | 3,740 | 460 | 29 | 493 | 4,722 | 4,722 |
| 7 | Indonesia | 233,500 | 499,962 | 997,961 | 806,200 | 971,219 | 1,000,001 | 400,000 | 353,259 | 305,558 | 4,834,198 | 5,567,659 |
| | % ag/ All Paddy Field | 3% | 6% | 12% | 10% | 12% | 12% | 5% | 4% | 4% | 8,164,000 ha Nationwide Paddy Area | |
| | % ag/ All Irrigate Paddy Field | 5% | 11% | 21% | 17% | 20% | 21% | 8% | 7% | 6% | 4,746,000 ha Nationwide Irrigated Area | |

¹⁷ ASURANSI PENGAYOM PETANI PEMBELAJARAN DAN ARAH PENGEMBANGAN Andi Amran Sulaiman Syahyuti Sumaryanto Ismeth Inounu IAARD PRESS, 2017

Data Collection Survey on Promotion for Introduction of Agricultural Insurance in Indonesia

| No | Region | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2017-2023 | 2015-2023 |
|-------------------------------|--------|------|------|------|------|------|------|------|------|------|--------------|-------------------------|
| % ag/ All Rainfed Paddy Field | | 7% | 15% | 29% | 24% | 28% | 29% | 12% | 10% | 9% | 3,418,000 ha | Nationwide Rainfed Area |

Source: Ministry of Agriculture, JASINDO

Figure 3.3.2 shows the ratio of the area claimed to the area of insured coverage for each province (the rightmost column shows the average), and Figure 3.3.3 shows the ratio of the actual amount of insurance payouts to the amount of insurance premiums collected for each province (the rightmost column shows the average). These data are averages for the period 2015-2022, and data for the Maluku-Papua province are omitted due to some missing data.

Looking at Figure 3.3.2, we can see that Kalimantan Timur Province has an extremely large claimed area of 30.4%, but the other provinces generally have an area of less than 10%, and the national average is equivalent to 2% of the area that joined the AUP. In these percentage areas, more than 75% of the rice crop area was damaged by, e.g., flooding and pests, and as a result, claims were made. Figure 3.3.3 shows the ratio of insurance claims to the insurance premiums, and while the ratio in Kalimantan Timur is as high as 1013%, in other areas it is between a few percent and a maximum of less than 300%, and the national average is 67%.

The above 67% payout rate is considered to be within the appropriate range for non-life insurance. Looking at each island, the payout rate in the Sumatra area is clearly high. This suggests the introduction of a higher insurance premium rate in the Sumatra island area, etc.

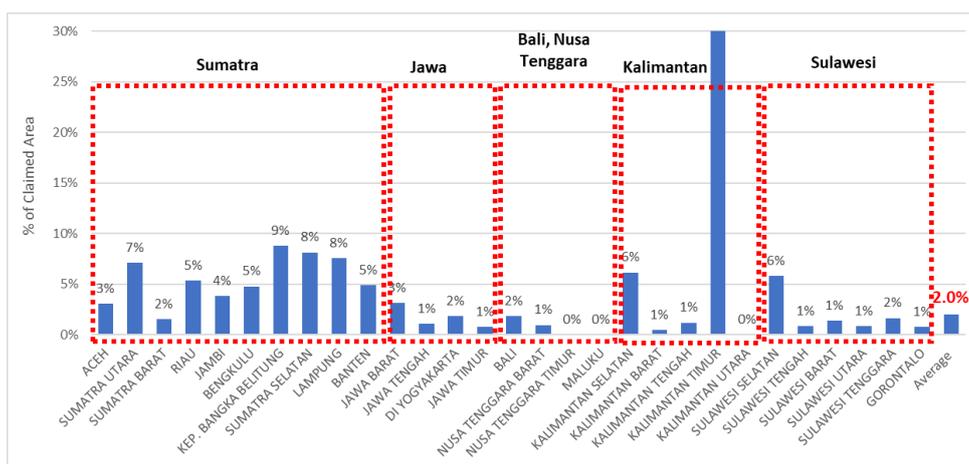


Figure 3.3.2 Percentage of Area damaged (85% or more) by Province

Source: Ministry of Agriculture, JASINDO

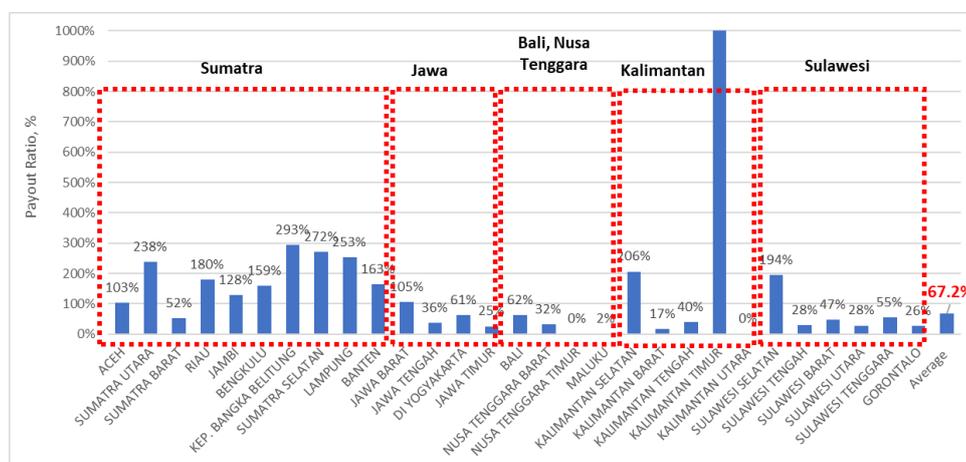


Figure 3.3.3 AUP Payouts as a percentage of Insurance Premium by Province

Source: Ministry of Agriculture, JASINDO

According to production data from the National Statistics Agency (BPS), flooding poses the greatest threat to rice production in Indonesia, accounting for approximately 55% of rice production losses between 2003 and 2017. However, data from AUTP insurance claims (2015–2018) shows a different trend: 54% of claims were due to pests and diseases, while drought accounted for 13% and flooding for 33%¹⁸.

This discrepancy may be due to the nature of flood and drought risks. While floods occur periodically, droughts are large-scale, abnormal natural disasters. As a result, flood risks may have been underestimated in the short period between 2015 and 2018. Additionally, damage from pests and diseases tends to be localized at the field level rather than widespread across entire regions, making their impact less evident in broader agricultural production statistics. This likely contributed to a gap between statistically measured agricultural production risks and the actual factors driving insurance claims.

3.3.2 Related Organizations and Implementation Arrangement for AUTP

1) Related Organizations for Agricultural Insurance

In promoting agricultural insurance, a wide range of stakeholders are involved, from the Ministry of Finance, which is responsible for allocating insurance premium subsidies, to insurance companies, which develop insurance products and underwrite risks, to an organization that approves insurance products, and agricultural extension workers, who are responsible for promoting insurance products. For example, the Financial Services Authority (OJK) is responsible for the actual approval of insurance products, and at the central level, the main players are the National Planning and Development Agency (BAPPENAS), the Ministry of Agriculture including training centers, and JASINDO.

In rural areas, the main role is played by the agricultural offices at the provincial and district (Kabupaten) levels. The district agricultural offices are staffed by pest and disease inspectors¹⁹ who also act as damage assessors as required by the AUTP. The agricultural extension officers who introduce insurance products to farmers and support them in the process of joining insurance schemes are also affiliated with the district agricultural offices (their place of work is usually an extension office established at the Kecamatan level).

In addition to the above, the BPS (Central Bureau of Statistics) is also involved as a supporting organization in the implementation of AYII. In AYII, it is necessary to conduct a CCE (Crop Cutting Experiment) to confirm the field yield per unit area. The BPS conducts CCEs on a nationwide basis and has established standard methods. In other words, when the Ministry of Agriculture implements AYII, it is necessary for agricultural extension officers to carry out CCE, but in this case, the support of BPS officials is required (BPS regional offices are established at the provincial level).

The following is an overview of these organizations and their roles in promoting agricultural insurance:

1.1) Ministry of National Development Planning (BAPPENAS: Badan Perencanaan Pembangunan Nasional)

The Ministry of National Development Planning is responsible for the preparation of long- and medium-term development plans that serve as guidelines for the implementation of development throughout Indonesia, and cross-sectoral coordination is also an important responsibility. In the agricultural sector,

¹⁸ Survey on Sustainable Agricultural Insurance Scheme in Indonesia, Final Report October 2019, AGROINSURANCE

¹⁹ Pest and disease inspectors are called Petugas Pengendali Organisme Tumbuhan (POPT), and are usually affiliated with the Plant Protection Division or the Plant Health Division within the Dinas Pertanian (Agricultural Office in Kabupaten/District). These divisions are responsible for managing and supervising activities related to pest and disease control. In addition, Food Crops and Horticulture Protection Officers (PHP: Petugas Perlindungan Tanaman Pangan dan Hortikultura) are attached to the Food Crops and Horticulture Division or the Plant Protection Division. This division is responsible for overseeing the protection and management of food crops and horticultural plants, and protecting them from pests and diseases.

the Ministry is responsible for policy development on agricultural insurance, which supports food security and provides protection against risks facing farmers. It also plays a coordinating role among various ministries and related agencies in the implementation of agricultural insurance.

The Ministry has nine directorates, but the directorate in charge of agricultural insurance is the Directorate General of Food and Agriculture, which reports to the Deputy Director General for Maritime Affairs and Natural Resources. This Directorate is in charge of developing policies and programs to support the agricultural sector, and it is also involved in the development and implementation of agricultural insurance to protect farmers from the risks of their agricultural activities. According to interviews, as of October 2023, approximately six staff members are directly involved in the agricultural insurance program.

1.2) Ministry of Agriculture (MOA)

The Ministry of Agriculture is responsible for the administration of the agricultural sector, including planning and implementation of agricultural programs, coordination and cooperation with other relevant agencies, and monitoring and supervision. With regard to agricultural insurance, the Ministry formulates policies to protect farmers from losses due to crop failure and natural disasters, and serves as a facilitator in the implementation of agricultural insurance programs. The Ministry of Agriculture is also responsible for subsidizing agricultural insurance premiums and making them affordable for farmers.

The Ministry of Agriculture has six General Directorates, under which there are a total of 30 directorates. Agricultural insurance is handled by the Agricultural Finance Department under the Directorate General of Agricultural Infrastructure and Facilities. This department is responsible for developing and managing agricultural insurance programs in cooperation with insurance companies, providing necessary information to farmers, and raising farmers' awareness. Under this department, there is a dedicated agricultural insurance implementation team/unit that manages the agricultural insurance program, and according to interviews, as of February 2025, there are about 12 staff members engaged.

1.3) Agricultural Extension and Human Resources Development Agency (BPPSDMP²⁰) and the Agricultural Training Center (PUSLATAN²¹)

Both the BPPSDMP and PUSLATAN are affiliated with the Directorate General of Human Resources Development and Training within the Ministry of Agriculture. The main aim of both organizations is to improve the skills and knowledge of agricultural staff and farmers through various training programs. Specifically, the BPPSDMP is responsible for developing and implementing training programs aimed at improving the skills of agricultural experts, including extension officers and farmers, while PUSLATAN provides training programs as the Agricultural Professional Certification Institution under BPPSDMP.

Both the BPPSDMP and PUSLATAN have established number of training centers throughout Indonesia, and are conducting trainings nationwide. In promoting agricultural insurance, it is desirable that these organizations, BPPSDMP and PUSLATAN, provide training for agricultural extension officers and farmer representatives. In the previously implemented JICA assisted project to improve Indonesia's agricultural insurance implementation capacity, training on AOTP was provided at the regional office²² of BBPP Ketindan (East Java) and BBPP Batangkaluku (South Sulawesi), then AYII training in BBPP Lembang (West Java).

1.4) Department of Agriculture at Province, District (Kabupaten) and Sub-district (Kecamatan)

Under decentralization in Indonesia, provincial and district (Kabupaten) agricultural bureaus have been

²⁰ Badan Penyuluhan Pertanian dan Pengembangan Sumber Daya Manusia (Center for Agricultural Human Resource Development Training)

²¹ Pusat Pelatihan Pertanian (PUSLATAN: Agricultural Training Center)

²² Agricultural Training Center (Balai Besar Pelatihan Pertanian: BBPP)

established. At the sub-district (Kecamatan) level, extension offices are located as sub-offices of the district agricultural offices. Their main responsibilities and activities are the same as those of the Ministry of Agriculture (MOA) at the national level within their respective administrative jurisdictions. Practically, they are under the Ministry line, but the budget for their activities is allocated separately to the regional governments.

With regard to agricultural insurance, the Agricultural Extension Department under the District Agricultural Bureau is mainly responsible for promoting agricultural insurance and assisting farmers in purchasing insurance. Also, field loss assessment required under AUTP is conducted by this Kabupaten office. Further, in addition to raising farmers' awareness of the agricultural insurance system, it functions as a liaison between farmers, insurance companies, and the central government. The Department of Food Crops and Horticulture also maintains a variety of data on insurable crops, which is very important in developing more appropriate insurance products.

1.5) JASINDO (PT Asuransi Jasa Indonesia, state owned insurance company)

JASINDO is an insurance company owned²³ by the Indonesian government. As an insurance service provider, it offers a variety of insurance products to individuals and corporate customers, primarily government agencies. Insurance products offered are to protect property, vehicle, fire, travel, and farmers with agricultural insurance. All products are intended to protect clients against financial losses due to unforeseen events, and the agricultural insurance covered by this Survey is provided by JASINDO²⁴.

There are eight main divisions that manage different aspects of insurance operations and services. With respect to agricultural insurance, there is an Agricultural Insurance Department, which is responsible for the development, marketing, and administration of insurance products specifically for the agricultural sector. According to the information provided in the interviews, as of October 2024, only seven employees are assigned to the division: three in charge of marketing, two in charge of underwriting, and two in charge of claims handling. JASINDO has an office in the province, and the provincial office serves as a link between farmers and headquarters for procedures such as enrollment and claims application.

According to the Ministerial Decree on Agricultural Insurance (No. 40 of 2015 and No. 30 of 2023), only insurance companies owned by the national or local government are permitted to underwrite the government's agricultural insurance program. As a result, private insurance companies cannot participate in AUTP, making JASINDO the sole underwriter in practice.

1.6) Ministry of Finance (MOF)

The Ministry of Finance plays an important role in managing the country's finances and assets. The general responsibilities and roles of the MOF are the management of state finances, budgeting, monitoring and evaluation, formulation of taxation policies, management of government debt, provision of subsidies, and financial supervision of relevant agencies. The MOF has 11 general directorates, but no specific department or division has been established for agricultural insurance. Yet, coordination with the Ministry of Agriculture and the National Development Planning is usually handled by the Department of Finance and Risk Management under the Directorate General of Finance and Risk Management.

²³ Although JASINDO, a state-run company, may form partnerships and cooperate with private companies in order to strengthen its capital base and operational capabilities, its main source of capital is government funding.

²⁴ AUTP's premium collections per year were 2015= IDR 42 billion, 2016= IDR 89.99 billion, 2017= IDR 179.63 billion, 2018= IDR 145.11 billion, 2019= IDR 174.81 billion, 2020= IDR 180 billion, 2021= IDR 72 billion, and 2022= IDR 63.58 billion (source: JASINDO). Note that JASINDO's total premium collection was IDR 5.61 trillion in 2018 and IDR 5.39 trillion in 2019; the ratio of AUTP's premium collection to total premium collection is 2.6% (2018) and 3.2% (2019), respectively.

With respect to the promotion of agricultural insurance, the Department of Finance is responsible for allocating funds for agricultural insurance premium subsidies. It is also responsible for developing regulations and policies governing the insurance industry. This includes regulating the licensing of insurance companies, supervising the financial status of insurance companies, and establishing business standards for insurance companies to follow. With regard to financial oversight, it is crucial to ensure that insurance companies have sufficient financial capacity to meet claims from farmers.

1.7) Financial Services Authority (OJK: Otoritas Jasa Keuangan)

The Financial Services Authority (OJK) is an independent agency established under Law No. 21 of 2011, which plays an important role in regulating and supervising the financial services sector in Indonesia. The main responsibilities of the OJK include the enforcement of regulation and supervision of all activities in the financial services sector, consumer protection, and ensuring financial system stability. The Financial Services Authority (OJK) has six Chief Executive, Ethics Committee, and Audit Board, and the main task in the field of agricultural insurance lies with the Chief Executive of Insurance Supervision, Pension Funds and Guarantees (PPDP)..

The Financial Services Authority is responsible for regulating and supervising all activities of insurance companies, including those that offer agricultural insurance products. This includes drafting, enforcing, and supervising regulations to ensure that insurance companies operate transparently, fairly, and accountably and meet standards set to protect the interests of consumers. In addition, the Authority provide insurance companies with opinions and recommendations on appropriate premiums and broad risk coverage. In other words, it is the substantive approval authority for insurance products.

1.8) Statistics Indonesia (BPS: Badan Pusat Statistik)

The Statistics Indonesia (BPS) operates under Statistics Law No. 16 of 1997, which establishes the legal framework for statistical administration in Indonesia. Its primary responsibility is to collect, process, and publish accurate and reliable statistical data in Indonesia. This data covers demographic, economic, and agricultural data, as well as social conditions and environmental issues. It is also responsible for conducting, compiling, and publishing census data, including population census and economic census.

The Statistics Indonesia has 11 main divisions, and the Methodology and Statistics Division is usually involved with respect to agricultural insurance. It also collects and presents a variety of agriculture-related statistical data, such as land and farm areas, crop types, production, and weather conditions, to assist insurance companies in the risk analysis they conduct. An area sampling frame (KSA) survey programs administered by the Statistics Indonesia is typically used to conduct CCE (Crop Cutting Experiment). The Agency provides training on CCE implementation to agricultural extension officers assigned to the regional agricultural bureaus to conduct CCE surveys.

2) Implementation Arrangement of AOTP (Asuransi Usaha Tani Padi)

Figure 3.3.4 shows the registration process for joining AOTP, and Figure 3.3.5 shows the structure for claims in the event of damage. The relevant departments are shown in the diagram as rectangles, and the procedures and steps are shown in italics with numbers. As part of the Ministry of Agriculture's line, the Directorate General of Agricultural Equipment and Facilities within the Ministry gives instructions to the agricultural bureaus at the provincial and district levels regarding the implementation of the AOTP for the relevant fiscal year (see numbers 1 to 3).

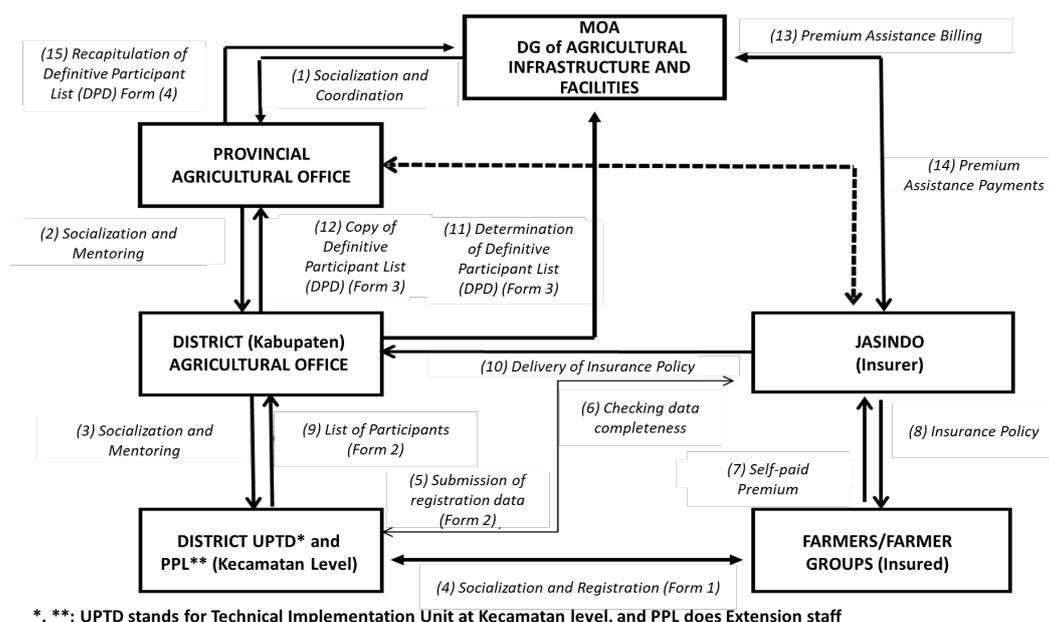


Figure 3.3.4 Implementation System and Procedures for Registration to AUTP
 Source: Premium Assistance Guideline, Rice Farming Insurance, AUTP 2024, MOA

The Agriculture Office of the Kabupaten level (District) establishes a Technical Implementation Unit (UPTD) at the extension center established at the sub-district (Kecamatan) level, and the members of this unit are extension officers (who usually work at the extension center). Agricultural extension officers introduce the AUTP to farmers and provide support for registration when joining (see No. 4).

JASINDO is the insurance underwriter, and therefore the registration data of the farmers who have joined AUTP, which is compiled by the extension officers, is shared with JASINDO (No. 5). Then, after being checked by JASINDO (No. 6), the insurance policy is issued by JASINDO to the farmers or the farmer groups (No. 8) upon confirmation of payment of the farmers' portion (20%) of the insurance premium (No. 7).

At the same time as the above, the list of participants is sent from the Technical Implementation Unit to the Kabupaten office (No. 9), and JASINDO shares a copy of the insurance policy with the Kabupaten office (No. 10). In addition, the Kabupaten office sends the finalized list (Definitive Participant List) to the higher-levels of provincial office and also the Ministry of Agriculture headquarters and (Nos. 11 and 12).

After that, 80% of the insurance premium subsidy is paid to JASINDO by the Ministry of Agriculture (numbers 13 and 14). The remaining 20% of the insurance premium should be borne by the farmers (No. 7), but in many cases the provincial or district office bears the cost instead. In other words, the target area for the implementation of the AUTP is affected by the allocation of the 80% subsidy from the central government and the 20% subsidy from the local government with regard to the insurance premium.

Figure 3.3.5 shows the implementation procedure for AUTP claims and insurance payments in the event of damage. If more than 75% of the fields covered by AUTP are damaged, the farmer notifies the agricultural extension officers who provided support at the time of registration. After that, the relevant agricultural extension officers (PPL), the Disease and Pest Inspector and Food Crop and Horticulture Protection Officer (POPT-PHP) will go to the site and, if they confirm that more than 75% of the crop has been damaged (No. 1), they will issue a damage notification to the insurance company, JASINDO (No. 2).

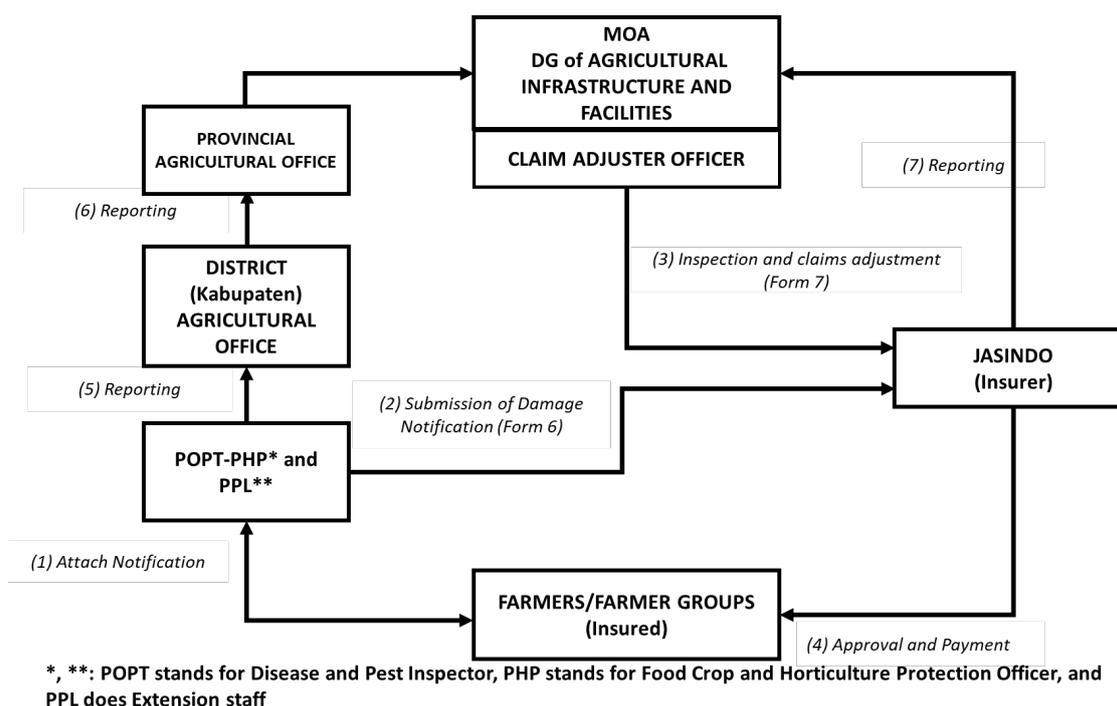


Figure 3.3.5 Implementation System and Procedures for Claim and Payment in AOTP

Source: Premium Assistance Guideline, Rice Farming Insurance, AOTP 2024, MOA

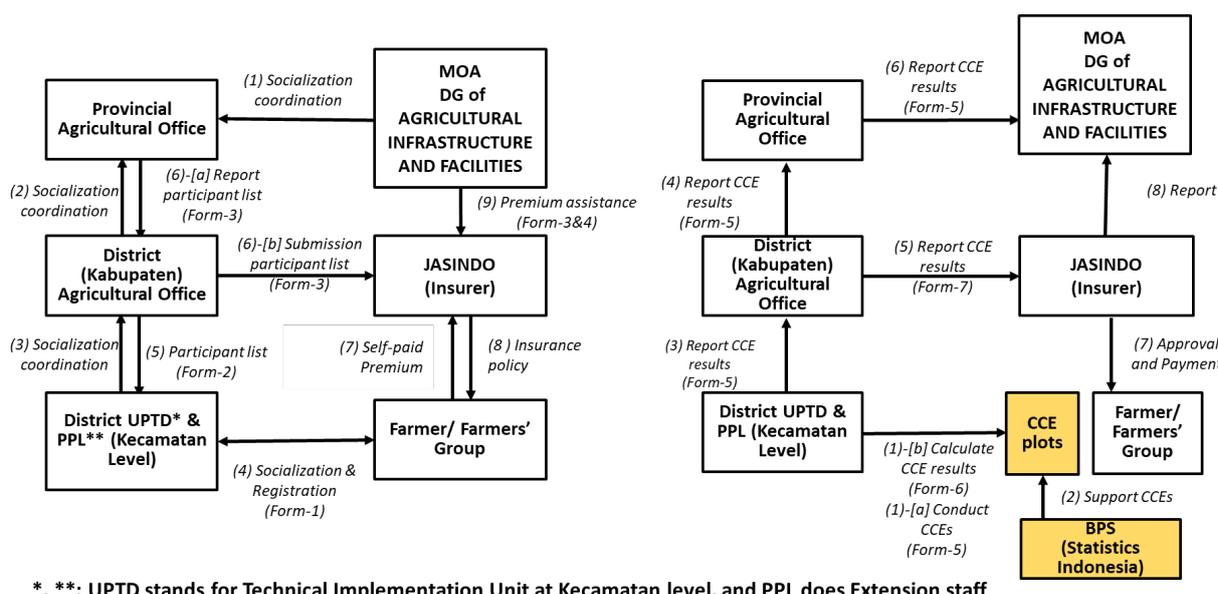
After receiving the damage report, JASINDO will make the insurance payment to the farmer after checking it with the Claim Adjuster Officer at the Ministry of Agriculture (No. 4). In addition, the disease and pest inspectors and agricultural extension officers report to the district agricultural office to which they belong (No. 5), and the district agricultural office reports to the provincial office (No. 6), and the provincial agricultural office reports to the headquarters office. Also, JASINDO reports to the headquarters office of the Ministry of Agriculture for the relevant season (No. 7).

3) Implementation Arrangement of AYII (Area Yield Index Insurance)

From 2020 to the first quarter of 2023, an Area Yield Index Insurance (AYII) was piloted as an example of index-based insurance with support from JICA. The implementation structure at the time of registration is shown on the left of Figure 3.3.6, while the structure for claims and insurance payments is shown on the right. The structure at the time of registration is basically based on the structure at the time of AOTP registration, but some simplifications had been made regarding data sharing and reporting.

Unlike AOTP, AYII does not require damage assessments to be carried out for each damaged field, but agricultural extension officers are required to carry out CCEs (crop cutting experiments) at predetermined locations and quantities in order to check average yields at the village (Desa) level (No. 1). The BPS (Statistics Indonesia) provides supports for the implementation of these CCEs (No. 2).

The results of the CCE are sent from the agricultural extension officers to the district agricultural office, to which they belongs (No. 3), and these results are then sent to the higher-level provincial office (No. 4) and the headquarters office (No. 6), as well as are shared with JASINDO, the insurance underwriter (No. 5). JASINDO makes insurance payments to the farmers based on these results (No. 7), and reports the results to the headquarters office of the Ministry of Agriculture (No. 8).



*, **: UPTD stands for Technical Implementation Unit at Kecamatan level, and PPL does Extension staff

Figure 3.3.6 Implementation Structure and Procedures for Registration (left) and Claim and Payment Procedure (right) under AYII Pilot Implementation

Source: Ministry of Agriculture, JICA Survey Team

3.3.3 Insurance Product Overview

(1) AUTP Product Overview

The following is a summary of the insurance product outline for AUTP, a type of agricultural insurance that covers the losses incurred by rice farmers due to flooding, drought, pests, etc.

Table 3.3.3 AUTP Product Overview

| | |
|---|---|
| Eligibility Requirements and Farmland Requirements | <ul style="list-style-type: none"> Farmers who belong to some farmer group and have a resident registration number are eligible and are required to own or cultivate a maximum of 2 hectares of paddy rice per cropping season per registration to the AUTP. Insured farmland must have an available water source, such as groundwater, or be irrigated. |
| Coverage | <p>Coverage is paid when rice planted for up to 30 days (HST) is 75% or more damaged on insured farmland due to any of the following events.</p> <ul style="list-style-type: none"> Flood or inundation: inundation of agricultural land at a certain depth and duration during the vegetative period, causing crop damage and reducing production levels. Includes flooding due to heavy rainfall and the effects of storm surges. Drought: a period during a plant's growing season when the plant's water needs are not met, resulting in reduced growth rates, damaging the plant, and reducing production levels. Pests: refers to organisms that damage or kill plant life, specifically crop pest stem insects (brown leafhoppers, weevils, rats, armyworms, golden snails), plant diseases (rice blast, brown spot, tungro, stem rot, hollow dwarf, grass dwarf/yellow dwarf, crackle disease) include. |
| Compensation Amount | <ul style="list-style-type: none"> Maximum payment (coverage) based on estimated production cost per hectare is IDR 6 million / hectare / season |
| Insurance Period | <ul style="list-style-type: none"> The insurance period is from the scheduled planting date of rice as stated in the insurance policy to the scheduled harvest date. |
| Insurance Premium | <ul style="list-style-type: none"> Premiums are 180,000 IDR/hectare/season |

| | |
|--------------------------|---|
| | <ul style="list-style-type: none"> Premium subsidy from the government is 80% or 144,000 IDR/hectare/season; insured farmers pay 20% or 36,000 IDR/hectare/season. |
| Damage Assessment | <ul style="list-style-type: none"> Compensation Calculation: Compensation will be determined by multiplying the area of the damaged plot by the insurance value per hectare (6,000,000 IDR). Damage Reporting for Insured Farmers: If 75% or more of the fields covered by AOTP are damaged, insured farmers should apply to the agricultural extension officer. The agricultural extension officer, along with the plant protection officer (POPT-PHP), will issue a damage report to JASINDO if they confirm that more than 75% of the farmer's registered land has been damaged. Insurance Payment: Upon receiving the damage report, JASINDO will process the insurance payment to the farmer after verifying the report with the Claim Adjuster Officer at the Ministry of Agriculture. |

Source: JICA Survey Team based on PREMIUM ASSISTANCE GUIDELINE RICE FARMING INSURANCE (AOTP) 2024.

(2) Potential Improvements for the AOTP Product

80% of the AOTP insurance premiums are subsidized by the government, and in many cases, the remaining 20% is subsidized by local governments. However, it might be challenging for some farmers, especially small-scale farmers, to bear the burden of the remaining premiums themselves. While subsidies from the government and local governments are necessary, there is a risk that they may increase the financial burden on the government and encourage farmers to become less responsible for protecting their own crops.

To address this, it is essential to move away from an insurance model that relies heavily on government and local government subsidies. Instead, farmers should be encouraged to take personal responsibility for purchasing crop yield compensation. The following outlines potential approaches for reducing the AOTP insurance premiums and assesses the feasibility of such measures.

Table 3.3.4 Approaches for Reducing AOTP Premiums

| | |
|--|---|
| Change in premium rates under the same conditions | <ul style="list-style-type: none"> Change in premium rates: As the loss ratio for AOTP is around 67%, which is reasonable for the design of insurance premiums, it can be said that changing the premium rates is not desirable. |
| Reduction of maximum insurance payout amount | <ul style="list-style-type: none"> Reducing the amount of insurance: Depending on how the maximum payout limit is set, it is possible to expect effective premium reductions. On the other hand, in the survey conducted in the previous JICA project, there were many comments that the maximum compensation amount of 6 million IDR/ha currently set was lower than the cost of producing rice. Therefore, if there are cases where actual losses cannot be covered by this operation, it is possible that this will lead to dissatisfaction with AOTP on the part of farmers. |
| Shortened insurance period | <ul style="list-style-type: none"> Reducing the insurance period will directly affect the insurance premium. However, during the reduced period, the farmer will be uninsured, so it may be necessary to consider other compensation arrangements. |
| Setting Disclaimers | <ul style="list-style-type: none"> Regarding the method of setting the deductible, there are two possible approaches: requiring the farmer to pay a portion of the deductible amount as a self-pay contribution to the compensation for damages, or setting a deductible clause as a payment requirement. On the other hand, it is necessary to gain a sufficient understanding of the cases where the farmer is required to pay a portion of the damages as a self-pay contribution or where no payment is made, for farmers who find it difficult to join the insurance program without insurance premium subsidies. |

Sources: JICA Survey Team

(3) AYII Product Overview

In considering research and policy proposals to improve the AOTP, the need for agricultural insurance to complement the AOTP has become evident. Yield Index Insurance (Area-Yield Index Insurance: AYII) has emerged as a candidate for this purpose. AYII is an insurance policy based on actual yields at the village level (Desa), which eliminates the need for damage assessment surveys for each individual farm. Instead, a Crop Cutting Survey (CCE) is conducted to estimate the actual yield at the village level. This approach helps keep insurance premiums lower. The following provides an overview of AYII:

Table 3.3.5 AYII Product Overview

| | |
|---|--|
| Eligibility Requirements and Farmland Requirements | <ul style="list-style-type: none"> Limited to rice farmers with less than 2 hectares in 15 villages (Desa) covered by the AYII pilot project. |
| Coverage | <ul style="list-style-type: none"> Flood, drought, plant pests (OPT) |
| Compensation Amount | <ul style="list-style-type: none"> Maximum payment (coverage) based on estimated production cost per hectare is IDR 6 million |
| Insurance Period | <ul style="list-style-type: none"> The insurance period is from the scheduled planting date of rice as stated in the insurance policy to the scheduled harvest date. |
| Insurance Premium | <ul style="list-style-type: none"> Premiums are 159,000 IDR / hectare / season (farmers pay 20% or 31,800 IDR / hectare / season) |
| Damage Assessment | <ul style="list-style-type: none"> Compensation Calculation: The amount of compensation is determined by dividing the difference between the actual yield and the benchmark yield (the threshold value set for the insured village) by the benchmark yield. This value is then multiplied by the maximum payout amount per hectare and the area of farmland. Benchmark Yield: The standard yield is set at 85% of the average yield over the past 7 years. Yield Estimation: To determine the assumed average yield to be used as the actual yield value, a crop cutting survey (CCE) is conducted. The method for conducting this survey follows the guidelines set by the BPS (Statistics Bureau). Agricultural extension workers perform the survey at predetermined locations to confirm the average yield at the village (Desa) level. The survey results are then reported from the agricultural extension workers to the district agricultural office, the provincial office, and the Ministry of Agriculture. The district agricultural office shares the results with JASINDO, the insurance underwriter, who then makes insurance payments to farmers based on these results. |

Sources: JICA Survey Team

(4) Potential Improvements for the AYII Product

In the AYII pilot project conducted from 2021 to 2022, it was found that the insurance claims paid significantly exceeded the insurance premiums collected. From an income and expenditure perspective, this indicates that the insurance design used in the pilot project needs to be reviewed to ensure the practical viability of the AYII moving forward.

From the plot survey conducted during the pilot project, it was confirmed that in the case of Karawang in 2021, there was a wide distribution of yields, ranging from very low to very high, which differed significantly from the yield trends of previous years (Figure 3.3.7). As a result, the volatility of the benchmark yield was much higher than expected, which is thought to be the reason why the insurance payments were higher than planned. To reduce this volatility, the following two measures can be considered:

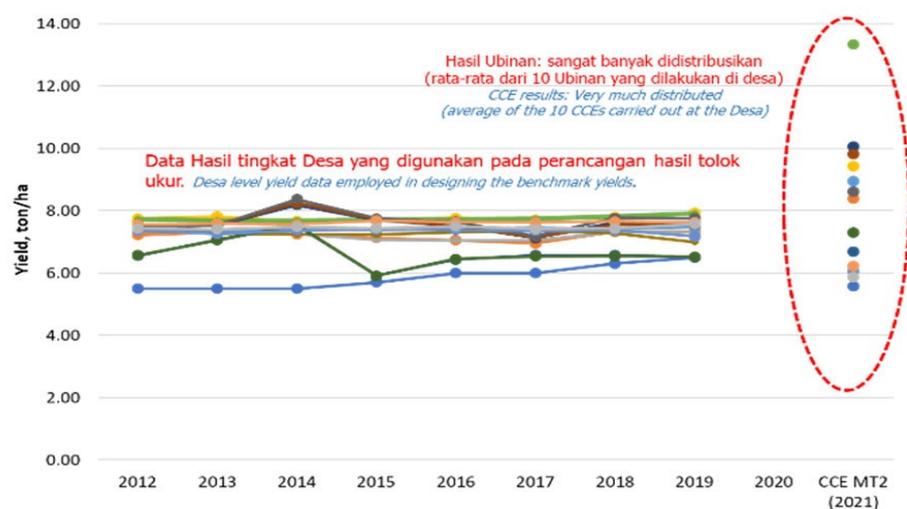


Figure 3.3.7 CCE Results in the 2021 MT1 Season (circled on the right)

Source: JICA Survey Team based on Jasindo and MOA's Information

- Updating the Benchmark Yield Using Recent CCE Results: In the AYII product design, yield data at the village (Desa) level, collected by the district agricultural office, were used. These data were primarily gathered by agricultural extension workers. However, in some target areas, the methods and data accuracy may be unclear. Updating the benchmark yield with the most recent CCE results could help reduce volatility.
- Lowering the Benchmark Yield: Currently, the benchmark yield is set at 85% of the average yield over the past seven years. If this were reduced to 40% to 50%, it would help reduce volatility in the benchmark yield and prevent excessive upward fluctuations in insurance payments. Additionally, lowering the benchmark yield would reduce insurance premiums, easing the financial burden on farmers. However, lowering the benchmark yield too much may result in fewer payments to farmers. To address this concern, AYII could be redefined as a product that complements AOTP coverage during major disasters.

3.3.4 Recommendations by the Previous JICA Project and Their Follow-up

JICA implemented the technical cooperation project "The Project of Capacity Development for the Implementation of Agricultural Insurance (AOTP Promotion and Feasibility Study on AYII)" from July 2020 to April 2023²⁵. Under this project, a pilot project was implemented to strengthen the existing AOTP and a new type of agricultural insurance, Yield Indexed Insurance (AYII).

Through the strengthening of the current AOTP and the piloting of a new agricultural insurance product, the Area Yield Index Insurance (AYII), several recommendations were made for further promotion/extension of agricultural insurance in Indonesia in the future. This sub-chapter will follow up the efforts of the government to implement these recommendations after the completion of the above technical cooperation project.

(1) Outline of the Previous JICA Technical Cooperation Project

The design of the preceding JICA technical cooperation project is summarized below. The project purpose was to "strengthen the capacity of the key ministries/institutions, the concerned local

²⁵ The contract between JICA and Sanyu Consultants, Inc. for the implementation of the project ran from July 14, 2020 to April 28, 2023.

governments, and other relevant organizations to enhance the implementation of agricultural insurance", and two major outcomes were sought to achieve this purpose. One is to strengthen the implementation capacity of the on-going indemnity type insurance (AOTP), which has been implemented since 2015²⁶, and the other one is to strengthen the capacity of the government officials through a pilot of the Area-Yield Index insurance (AYII).

| | | | |
|---------------------|---|---|--|
| Overall Goal | To improve the management of agricultural insurance in Indonesia | | |
| Purpose | Capacity of the key ministries/institutions, the concerned local governments, and other relevant organizations to enhance the implementation of agricultural insurance is strengthened. | | |
| Outputs | 1) Capacity to implement the current scheme of agricultural insurance for paddy (AOTP) strengthened, 2) Capacity to analyze, develop and improve agricultural insurance scheme strengthened. | | |
| Activities | Output 0 | Output 1: AOTP | Output 2: AYI |
| [0-1] | Conduct the baseline survey. | [1-1] Carry out surveys and monitoring to improve AOTP. | [2-1] Conduct trainings on meteorological and climate data analysis suitable for the development of the agricultural insurance. |
| [0-2] | Facilitate the consensus building among the implementing Agencies on agricultural insurance policies and operations. | [1-2] Carry out TOT for extension workers/pests control specialists, DINAS officers, Jasindo staff and other relevant stakeholders in the pilot sites to promote AOTP. | [2-2] Conduct a feasibility study on AYI insurance at the pilot sites (in West Java). |
| [0-3] | Conduct the end-line survey | [1-3] Support dissemination of agricultural insurance operation system (i.e. SIAP). | [2-3] Produce policy recommendations on the index-based agricultural insurances, to supplement AOTP. |

Table 3.3.8 Design of Prior JICA Technical Cooperation Projects

Major activities included conducting baseline and endline surveys to measure the achievement of the two outcomes, as well as providing support for consensus building among the organizations concerned (set as Outcome 0). In parallel, to achieve Outcome 1, the JICA team conducted surveys and monitoring of AOTP implemented by the counterpart organization, and conducted activities related to capacity building through trainings and improvement and dissemination of an application SIAP.

The FS for the introduction of Area Yield Index Insurance was conducted based on the yield data of the previous years in addition to climatic and meteorological data, since this was the first time for Indonesia to implement such index type insurance. The insurance product was disseminated in two regions, and a pilot trial of the area yield index insurance was conducted. The pilot sites were Karawang District in West Java Province and Kendal District in Central Java Province.

(2) Recommendations from Previous JICA Technical Cooperation Projects

The final results and recommendations of the preceding JICA technical cooperation project were shared to the stakeholders at the final WS held on March 6, 2023 with 55 participants. The recommendations consisted of three categories: 1) recommendations for improving the AYII design, 2) recommendations for improving the AOTP design, and 3) recommendations for the AYII and AOTP implementation process. For background on these recommendations, please refer to the Completion Report of the previous project (April 2023), Part IV: Policy Recommendations.

Table 3.3.6 shows the design recommendations for AYII and Table 3.3.7 does the design recommendations on the AOTP. In addition, Figure 3.3.9 shows the timing of implementation of each

²⁶ The AOTP was piloted from 2012-2014, but this period is not included. Through the results and lessons learned from this pilot, a full-scale AOTP implementation began in 2015.

recommendation. As can be seen from the tables, there are eight recommendations in the AYII, the last two of which are intended to be considered and implemented in the future (e.g., after three years). Note that only one recommendation pertains to the design aspects of the AUTP.

Table 3.3.6 Summary of Recommendations to AYII (Design Aspects)

| Stage | Recommendations | Contents |
|-------|--|--|
| 1 | Strengthening of CCEs | 1) Involve BPS in the areas of; i) random selection of CCE points based on Area Sampling Method (3 stages of random selection), and ii) training of PPLs for the CCE methods, 2) Recruitment of CCE implementors, e.g. from local people, 3) Exploration of utilizing remote sensing technology, including SIScrop (2.0) |
| 2 | Setting of premium ratio by Kecamatan | As cultivation condition differs from area to area, the premium ratio should be set by Kecamatan (the current arrangement is all same within Kabupaten). Note that benchmark yields are set by Desa. |
| 3 | Increase of risks covered | In addition to the risks covered currently, others such as Strong wind (typhoon/ cyclone) should preferably be covered as AYII is a kind of multi peril crop insurance by nature. |
| 4 | Increase of the max. payout, and the premium | Increase the max. payout from the current 6 million Rp to 8-10 million Rp, and accordingly, same increment ratios should be applied to the premium. |
| 5 | Update of benchmark yields | Every year, benchmark yields should be updated based on the CCE results, and the latest 5 years average yield should be taken as the base of the benchmark yield, or latest 7 years yields excluding the highest and lowest yields be employed to decide the benchmark yield. |
| 6 | Setting up of a Task Force Team | To follow up and data storing for CCE results, whereby update of benchmark yield, there should be a Task Force Team, composed of Directorate of Agricultural Finance and JASINDO. |
| 7 | Introduction of an Exit for the max. payout (future) | Introduce an exit level for the maximum payout instead of the current full proportional payout, e.g., at the level of 30% of the benchmark yield, full payout be done (currently, full payment is made at the zero production). |
| 8 | Introduction of a hybrid type AYII (future) | In addition to the yield reduction by which the insurance is triggered, early stage damages which need re-plantation should be considered, so-called 'failed planting'. This insurance trigger is very similar to the current situation of AUTP indemnity insurance, and be applied by plot not by area basis. |

Source: JICA study team (Prior Technical Cooperation Project, April 2023)

Table 3.3.7 Summary of Recommendations to the AUTP (Design Aspects)

| Stage | Recommendations | Contents |
|-------|---|---|
| 1 | Introduction of different levels of premium, preferably, by Kabupaten, or by Province, or otherwise by island | Based on the last 6 years (2015-2020) experiences of AUTP, the average payout ratio by province shows an obvious trend, i.e., higher payout ratios show up in the provinces of Sumatra and Kalimantan islands while lower payout ratios in Jawa, Bali, Nusa Tenggara, and Sulawesi (except Sulawesi Selatan). Therefore, different levels of premium should be introduced taking into account the different actual payout ratios. |

Source: JICA study team (Prior Technical Cooperation Project, April 2023)

Suggested timeline for AYII Recommendations

| No | Issues | 1 st Yr (2023) | 2 nd Yr (2024) | 3 rd Yr (2025) | 4 th Yr (2026) | 5 th Yr (2027) | |
|---|---|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|--|
| 1 | Strengthening of CCEs, with BPS | | | | | | |
| 2 | Setting of premium ratio by Kecamatan | | | | | | |
| 3 | Increase of risks covered | | | | | | |
| 4 | Increase of the max. payout & premium | | | | | | |
| 5 | Update of benchmark yields | | | | | | |
| 6 | Setting up of Task Force Team | | | | | | |
| The following 2 issues are to be examined, and may be tried after 3 years trial | | | | | | | |
| 7 | Introduction of an Exit for the max. payout | | | | | | |
| 8 * | Introduction of a hybrid type AYII | | | | | | |

Possibility of merging the 2 insurances??

Suggested timeline for AOTP Recommendations

| | | | | | | |
|---|---|--|--|--|--|--|
| 1 | Setting of Different Premium Ratio by, e.g., Province | | | | | |
|---|---|--|--|--|--|--|

Note: */ If No.8, hybrid type AYII, is introduced, AOTP-indemnity is merged in, so no more AOTP-indemnity is implemented.

Figure 3.3.9 Proposed Timeline to Implement the Recommendations

Source: JICA Consultant Team

Table 3.3.8 summarizes recommendations for the implementation of the AYII and AOTP with respect to; 1) socialization and 2) suggested improvements in the insurance registration, claims and payment process. The socialization recommendations are threefold, including, e.g., 1) bundling with subsidized fertilizer distribution program, 2) linking with existing agricultural programs, and 3) promoting the involvement of rural leaders, distribution of reference materials, and use of SNS.

For both AOTP and AYII, many challenges were found in the claim and payment process. In fact, many farmers commented that the claim and payment procedures were very cumbersome, as they had to go through several rounds of correspondence once they filed a claim, and the final payment was not commensurate with the amount of hard work they had put in. The second recommendation, shown in the table below, compares the current claim and payment procedure with the recommended one. The current procedure has a total of seven steps, whereas the recommended procedure by the JICA team reduces it to two steps.

Table 3.3.8 Summary of Recommendations to AOTP/AYII (Implementation Aspects)

| Stage | Recommendations | Contents |
|--|--|--|
| Dissemination of insurance to farmers and registration | <ol style="list-style-type: none"> 1) Bundling with existing programs, e.g., subsidized fertilizer distribution programs, for AOTP/AYII implementation 2) Linkage with existing agricultural programs for AOTP/AYII dissemination, promotion of involvement of rural leaders, as well as distribution of reference materials and use of SNS, etc. 3) Development of applications for AYII | <ol style="list-style-type: none"> 1) With regard to AOTP/AYII, consideration should be given to bundling them with the subsidized fertilizer distribution program for the following reasons: 1) almost all small farmers now use subsidized fertilizer; 2) farmers usually use subsidized fertilizer through farmer groups (Poktan), which are the bases for registration for insurance program and for filing claims and receiving insurance payments. This group serves as a base for registering and for filing claims and receiving insurance payouts. |

| Stage | Recommendations | Contents |
|--------------------|---|--|
| | promotion (use and improvement of SIAP and other applications used in AOTP) | <p>2) The promotion of AOTP/AYII and increasing farmer participation should be done in parallel with agriculture-related programs such as the existing "Maximum Regular Program" implemented by PUSLATAN²⁷ and BPPSDM²⁸ and other local government programs. In addition, key opinion leaders such as village leaders, farmer leaders and village heads should be involved in promoting AOTP/AYII. In addition, public outreach through social media and radio should be considered, including the distribution of brochures, banners, and other reference materials.</p> <p>3) For the registration of farmers to the AYII, an online-based registration system should be developed, similar to the SIAP applied in the AOTP. In fact, the use of SIAP for registration in the AOTP did not cause any major problems, but the registration of AYII in the pilot project was done manually, which was time consuming and resulted in input errors. As for SIAP, improvements should include at least 1) a notification function and 2) a proxy operation function.</p> |
| Claims and Payment | Current Procedures | Recommendations (shortened process) |
| | 1) Dinas confirms if there is a claim or not by comparing the Desa-yield with the benchmark yield, and if triggered, sends the claim documents, including ID photos, to JASINDO branch office by post/hand. | 1) Dinas confirms if there is a claim or not by comparing the Desa-yield with the benchmark yield, and if triggered, sends the claim documents (without ID photos) to JASINDO HQs office and CC to the JASINDO branch office as well as to the farmer group by online. |
| | 2) JASINDO branch office checks the claim document, then if completed, will send to JASINDO HQ, but if not completed, will send back to Dinas by post/hand. | 2) JASINDO HQs office, upon approval by the OIC, transfers the payout to the bank account of the farmer group. *OIC: Officer in charge |
| | 3) JASINDO HQs will make the approval on the claims upon the checking and scrutinization (it takes time). | |
| | 4) After the approve by JASINDO HQ, JASINDO HQs will issue the bill to the JASINDO branch office, then Dinas office, then to the farmer group by post/hand. Note that this bill needs to be signed by all the farmer group members who made the claim (it takes long time). | |
| | 5) The farmer group leader has to collect all the claim-made members to obtain their signatures one by one (it takes time). | |
| | 6) The farmer group leader will send the signed bill to the Dinas, then to the JASINDO branch office, and then to the JASINDO HQs by post/hand. | |
| | 7) JASINDO HQ now transfers the payout to the bank account of the farmer group. | |

Source: JICA study team (report on completion of prior technical cooperation projects, April 2023)

(3) Follow-up Results on the Recommendations

Follow-up on the above recommendations was conducted through a series of stakeholder interviews and meetings, as well as through the WSs. Table 3.3.9 summarizes those results. Table 3.3.10-12 also provides details identified through interviews, meetings, and WSs. The follow-up study found that, with the exception of a few, most of the recommendations have not yet been concretely implemented with

²⁷ Pusat Pelatihan Pertanian (PUSLATAN: Agricultural Training Center)

²⁸ Balai Besar Pelatihan Sumber Daya Manusia Pertanian (Center for Agricultural Human Resource Development Training)

respect to the implementation of agricultural insurance in FY2023 and FY2024, although they have been discussed and reviewed internally and among the stakeholders.

This is because, although the recommendations were made in March 2023, the fiscal year 2023²⁹ had already started, making it difficult to take new actions in the middle of the same fiscal year; AYII was not implemented in 2024 due to lack of consensus-building on the CCE implementation structure, but only AUTP was implemented; and budget cuts related to premium subsidies resulted in a reduced target of only 300,000 ha (in 2023) or 250,000 ha (in 2024), compared to the previous target of 1 million ha. In 2023 and 2024.

Specific action is being taken in the "Expediting Insurance on the Claims and Payout" as indicated in the bottom of the table below. The previous technical cooperation project recommended a two-step shortcut instead of the then-practiced seven-step process, and JASINDO proposed an improvement by engaging PT Pos Indonesia (Indonesia Post) for the distribution of insurance policies at the time of registration and claims and payout. Previously, this was done through the Agriculture Office at the Kabupaten level, but this step can be eliminated, thus speeding up the process.

Table 3.3.9 Results of Follow-up on Recommendations to AYII and AUTP

| Stage | Summary of Recommendations | Follow-up Results |
|--|---|---|
| Recommendations for AYII design aspects | | |
| 1 | Enhanced Crop Cutting and Surveying (CCE) | CCE is required in AYII, but no concrete progress has been made since AYII itself has not been implemented. In addition, BPS understands the implementation of CCE training for extension workers. |
| 2 | Setting premium rates at the Kecamatan level | Since the AYII itself has not been implemented, no concrete progress has been made. |
| 3 | Additional risk events covered by insurance | same as above |
| 4 | Increase in maximum claim payments and premiums | same as above |
| 5 | Regular updating of benchmark (reference) unit yield | same as above |
| 6 | Establishment of Task Force Teams | Consultations/meetings among the parties involved have been held as needed, but have not been formally established as a task force/team. |
| 7 | Introduction of Exit for maximum payment (in the future) | Since AYII itself has not been implemented, no concrete progress has been made. Note that this recommendation is for the future. |
| 8 | Introduction of hybrid type "AYII" (in the future) | same as above |
| Recommendations for AUTP design aspects | | |
| 1 | Introduction of different premium rates by Kabupaten, by state, by island, etc. | No concrete progress has been made. While acknowledging the logic of setting different insurance premium rates, some officers of JASINDO and MOA believe that a uniform rate is acceptable for the sake of equality and simplicity, since 80% of insurance premiums are subsidized by the central government, and the 20% that should be paid by farmers are also often subsidized by the local government. |
| Recommendations on AYII/AUTP Implementation Aspects | | |
| 1 | Improved insurance penetration and registration for farmers 1) Bundling with existing programs, e.g., subsidized fertilizer distribution programs, for AUTP/AYII implementation 2) Linkage with existing agricultural programs for AUTP/AYII dissemination, promotion of involvement of rural leaders, as well as distribution of reference | No concrete progress has been made. The previous target was 1 million hectares, but since the premium subsidy has been reduced and the AUTP target has been reduced to 300,000 hectares (in 2023) or about 250,000 hectares (in 2024), the above response has been undertaken. |

²⁹ The AYII target for 2023 was at first 1,300 ha, and reduced to 680 ha for the two districts combined, and the actual results were 596.5 ha for Karawang and 165 ha for Kendal, for a total of 761.5 ha.

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| | | |
|---|---|--|
| | materials and use of SNS, etc. 3) Development and application of applications for AYII promotion (use and improvement of SIAP and other applications used in AUTP) | |
| 2 | Expediting on the insurance claims and payouts | Previously, the process was based on seven steps, but it has been expedited through the use of PT Pos Indonesia (Indonesia Post) to distribute policy to the participating farmers and to make prompt payment for the insurance claims in the event. |

Source: JICA Survey Team

Table 3.3.10 Summary of Recommendations for Design of AYII

| Step | Recommendations | Contents | Current Situation as of Dec. 2024 |
|------|-----------------------|--|---|
| 1 | Strengthening of CCEs | 1) Involve BPS in the areas of; i) random selection of CCE points based on Area Sampling Method (3 stages of random selection), and ii) training of PPLs for the CCE methods, 2) Recruitment of CCE implementors, e.g. from local people, 3) Exploration of utilizing remote sensing technology, including SIScrop (2.0) | <p>1. Involvement of BPS <u>Kickoff Meeting (September 18, 2024)</u></p> <ul style="list-style-type: none"> ➤ It was recommended that the BPS collaborate with the Ministry of Agriculture (MOA) to ensure accurate data collection, given Indonesia's diverse agriculture. ➤ In addition, the role of the BPS in determining benchmark yield through detailed yield data was discussed to strengthen insurance schemes such as AYII. <p><u>Online meeting with BPS (October 18, 2024)</u></p> <ul style="list-style-type: none"> ➤ Regarding the possibility of cooperation with the BPS, the BPS has actually conducted trainings on CCE, such as the one held in Lembang in 2023. The training showed the participants how to conduct appropriate CCEs. ➤ As long as an agreement for cooperation can be obtained from the regional (province) BPS, it is possible to provide assistance regarding CCE under the direction of the central BPS. <p><u>Offline meeting with JASINDO (October 21, 2024)</u></p> <ul style="list-style-type: none"> ➤ Improved village (Desa)-level data collection capacity and cooperation with agricultural extension workers (PPLs) were sought to ensure the reliability of the data used to determine premiums and benchmark yields. <p><u>First Workshop (October 28, 2024)</u></p> <ul style="list-style-type: none"> ➤ The importance of the accuracy of the data under the jurisdiction of the BPS and its active role in data collection and yield verification were reiterated. In other words, the involvement of the BPS in ensuring that yields are correctly measured in different regions will provide reliable data on the implementation of agricultural insurance. ➤ In remote areas where access to data is difficult, the importance of BPS involvement in improving the process of CCE implementation was emphasized. ➤ Training and follow-up for agricultural extension workers (PPLs) will be needed to ensure better implementation of CCE, and the need to strengthen coordination with local government agencies was noted in this regard. <p>2. Recruitment from local human resources of CCE implementers <u>Kickoff Meeting (September 18, 2024)</u></p> <ul style="list-style-type: none"> ➤ It was noted that having a local CCE implementer is essential for the successful rollout of the agricultural insurance program. Having local people conduct the surveys will help the team ensure a more consistent and appropriate data collection approach. In addition, local implementers can improve communication and build trust with farmers. <p><u>Offline meeting with JASINDO (October 21, 2024)</u></p> <ul style="list-style-type: none"> ➤ JASINDO noted that there is a lack of trained personnel to implement CCEs and stressed the importance of hiring local personnel who are familiar with local agricultural practices. It was suggested that local personnel would be more effective than outside implementers because they would have a deeper insight into local conditions. |

| Step | Recommendations | Contents | Current Situation as of Dec. 2024 |
|------|---------------------------------------|--|--|
| | | | <p><u>Meeting with BPPSDMP (Agricultural Human Resource Development and Training Center) (October 23, 2024)</u></p> <ul style="list-style-type: none"> ➤ The BPPSDMP provides technical training for agricultural extension workers (PPLs), but further suggested that recruiting local personnel in CCE implementation would enhance the effectiveness of the CCE process. In preparation for the role of local implementers in data collection, the BPPSDMP noted the need to develop a systematic human resource recruitment and training plan to ensure high quality and reliable data. <p><u>First Workshop (October 28, 2024)</u></p> <ul style="list-style-type: none"> ➤ Local hiring of CCE implementers was discussed as an important factor in expanding CCE implementation. It was suggested that local recruitment would provide rural employment opportunities and help improve local support for agricultural insurance schemes. <p><u>3. Consideration of remote sensing technology utilization</u></p> <p><u>Offline meeting with BBSIP SDLP³⁰ (October 23, 2024)</u></p> <ul style="list-style-type: none"> ➤ The use of remote sensing technology, including the use of SAR data, is essential for rice yield estimation and agricultural insurance risk assessment. ➤ In order to expand agricultural insurance in the future, the use of higher resolution satellite data and improved productivity indicators are needed. ➤ Cooperation with JICA, MOA, and other stakeholders is essential to improve data accuracy and expand monitoring. <p><u>First Workshop (October 28, 2024)</u></p> <ul style="list-style-type: none"> ➤ Pilot projects in regions such as West Java and Central Java focused on the use of satellite data. This technology has the potential to improve the accuracy of yield estimation and replace or augment CCE data collection currently made through manual operations. |
| 2 | Setting of premium ratio by Kecamatan | As cultivation condition differs from area to area, the premium ratio should be set by Kecamatan (the current arrangement is all same within Kabupaten). Note that benchmark yields are set by Desa. | <p><u>Pre-Kickoff Meeting (September 13, 2024)</u></p> <ul style="list-style-type: none"> ➤ The JICA team proposed to maintain the benchmark yield at the village (Desa) level, but set the premium rate at the Kecamatan (sub-district) level (in the pilot project, the premium rate was set at the Kabupaten (district) level). <p><u>Online meeting with BPS (October 18, 2024)</u></p> <ul style="list-style-type: none"> ➤ The BPS highlighted the technical challenges in establishing benchmark yield at the village level, which requires a sufficient sample size. ➤ While the CCE needs to be implemented for the collection of data for premium adjustment, the BPS confirmed its readiness to cooperate for the purpose of improving the CCE. <p><u>Offline meeting with BPS (October 24, 2024)</u></p> <ul style="list-style-type: none"> ➤ It was suggested that the benchmark yields remain at the village (Desa) level for greater accuracy. ➤ In setting premium rates, it was pointed out that the challenges of going from the Kabupaten level to the |

³⁰ Balai Besar Pengujian Standar Instrumen Sumberdaya Lahan Pertanian (Center for Agricultural Instrument Standardization for Agricultural Land Resources)

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| Step | Recommendations | Contents | Current Situation as of Dec. 2024 |
|------|---------------------------|---|---|
| | | | <p>Kecamatan level include the limitations of data collection and suitable ensuring of fairness among regions.</p> <p><u>First Workshop (October 28, 2024)</u></p> <ul style="list-style-type: none"> ➤ In order to better reflect regional risks, it was recommended to move to a model that allows for the setting of premiums and claims by region, including setting premium rates at the Kecamatan level. However, it was coordinated that the implementation of such a model would require improved data infrastructure and cooperation among the MOA, BPS, and regional agricultural offices. ➤ The AYII pilot project could also collect data and assess the feasibility of setting premiums at the Kecamatan level. |
| 3 | Increase of risks covered | In addition to the risks covered currently, others such as Strong wind (typhoon/ cyclone) should preferably be covered as AYII is a kind of multi-peril crop insurance by nature. | <p><u>Pre-Kickoff Meeting (September 13, 2024)</u></p> <ul style="list-style-type: none"> ➤ Discussions were held on expanding the scope of the AYII to include new risks, particularly in areas susceptible to typhoons and high winds. ➤ Combined with effective extension education and outreach, the JICA team noted that farmers' participation in agricultural insurance could be increased. <p><u>Meeting notes with JASINDO (Oct. 21, 2024):</u></p> <ul style="list-style-type: none"> ➤ JASINDO is focusing on parametric insurance models for regions with frequent catastrophes and is considering options to include additional risks such as weather extremes. ➤ The importance of improving data infrastructure to address these growing risks was emphasized. ➤ Collaboration with agencies working with geospatial information is needed to introduce technology to monitor and manage new types of risks. <p><u>Offline meeting with BBSIP SDLP (October 23, 2024)</u></p> <ul style="list-style-type: none"> ➤ The use of parametric models that include risks such as cyclones was discussed. ➤ One possible approach to monitoring such risks in real time would be the use of satellite data, which could improve the efficiency and accuracy of insurance claims payments. <p><u>Meeting with MOA Insurance Team (October 25, 2024)</u></p> <ul style="list-style-type: none"> ➤ The proposed expansion of the AYII pilot should add risks such as extreme weather and pest outbreaks to create a more resilient insurance model for farmers. ➤ Through the training program, farmers will be able to gain a better understanding of the benefits of expanded risk coverage. <p><u>First Workshop (October 28, 2024):</u></p> <ul style="list-style-type: none"> ➤ For risks currently covered, the AOTP covers crop losses due to drought, floods, and pests. The main challenge, however, is to ensure effective risk management and comprehensive coverage in high-risk areas. ➤ AYII pilot was designed to provide broader risk coverage, such as climate change and other yield reductions, but in reality, same risks to the AOTP were adopted. ➤ For the proposal, digital and remote sensing technologies should be introduced to improve risk assessment, as well as policies to cover risks such as climate change impacts and new crop diseases. |

| Step | Recommendations | Contents | Current Situation as of Dec. 2024 |
|------|--|---|---|
| 4 | Increase of the max. payout, and the premium | Increase the max. payout from the current 6 million Rp to 8-10 million Rp, and accordingly, same increment ratios should be applied to the premium. | <p><u>Pre-Kickoff Meeting (September 13, 2024)</u></p> <ul style="list-style-type: none"> ➤ The original government proposal was to gradually increase the maximum payment to Rs. 10 million in tandem with increased premium contributions by farmers and government subsidies. <p><u>Meeting with JASINDO (October 21, 2024)</u></p> <ul style="list-style-type: none"> ➤ JASINDO reported high loss ratios for AYII, which were attributed to inadequate premium rates in high-risk areas. ➤ To ensure sustainability, the JICA team proposed differentiating premiums by region, but JASINDO expressed concern about equality among regions. ➤ AYII maximum payments should better reflect losses, especially in areas where crop failures occur frequently. ➤ Efforts are underway to use remote sensing technology to refine risk assessments so that premiums and claims can be more appropriately set. <p><u>Offline meeting with BPS (October 24, 2024)</u></p> <ul style="list-style-type: none"> ➤ The need for more accurate CCE data to validate premium setting was emphasized. <p><u>Meeting with MOA Insurance Team (October 25, 2024)</u></p> <ul style="list-style-type: none"> ➤ AYII pilot project for FY2024 was planned for 1,000 ha in East Jawa (Bojonegoro and Lamongan districts) to revise the amounts of claims and premiums based on historical yield data. ➤ However, MOA and JASINDO faced difficulties in determining insurance amounts and premiums by region due to difficulties in obtaining historical yield data for setting benchmark yield. <p><u>First Workshop (October 28, 2024)</u></p> <ul style="list-style-type: none"> ➤ Current premium rates and maximum claim payouts likely do not adequately reflect the risks observed in high-risk areas. ➤ Operational costs associated with the implementation of CCEs and other programs complicate the establishment of appropriate premium rates and claim payment limits. ➤ The premium structure should be updated to take into account historical risk data. ➤ Insurance max. payout should be adjusted to match the risks observed in the pilot implementation areas. |
| 5 | Update of benchmark yields | Every year, benchmark yields should be updated based on the CCE results, and the latest 5 years average yield should be taken as the base of the benchmark yield, or latest 7 years yields excluding the highest and lowest yields be employed to decide the benchmark yield. | <p><u>Pre-Kickoff Meeting (September 13, 2024)</u></p> <ul style="list-style-type: none"> ➤ The importance of increasing data reliability and updating benchmark yields with the latest 5-year or 7-year average was confirmed. ➤ The approach of excluding extreme values (highest and lowest) within a seven-year period was emphasized in order to keep stability in the benchmark. <p><u>Meeting with JASINDO (October 21, 2024)</u></p> <ul style="list-style-type: none"> ➤ JICA proposed to revise the AYII design annually based on the analysis of historical data. ➤ JASINDO mentioned challenges, including high operational costs for data collection and lack of resources to validate benchmark and field yields. <p><u>Offline meeting with BPS (October 24, 2024)</u></p> |

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| Step | Recommendations | Contents | Current Situation as of Dec. 2024 |
|------|---------------------------------|---|---|
| | | | <ul style="list-style-type: none"> ➤ Yield estimates are based on a combination of historical data and the results of CCEs to be conducted each season. ➤ The BPS conducts approximately 60,000 CCEs per year in five major crops, including rice, with sample sizes adjusted according to regional characteristics. ➤ The use of BPS data to update benchmark yields is limited by the incompleteness of data at the regional (Kecamatan) level. ➤ Most crop estimates are only available at the district (Kabupaten) level, which affects the accuracy of claims payments. <p><u>First Workshop (October 28, 2024)</u></p> <ul style="list-style-type: none"> ➤ Regular updating of the benchmark yield is considered essential to align the agricultural insurance program with current agricultural practices and market conditions. ➤ These updates will enhance the effectiveness and credibility of agricultural insurance programs like AYII and AUDP. ➤ Delays in CCE implementation and lack of coordination of harvest schedules were cited as the main challenges by the extension officers. ➤ To address these challenges, it is necessary to update benchmark yields and improve human resource capacity based on CCE results. <p><u>Meeting with Chubu Jawa DINAS (November 7, 2024)</u></p> <ul style="list-style-type: none"> ➤ The Central Jawa DINAS pointed out the need for more accurate and real-time data collection to improve these benchmarks, as claim payments in AYII depend on setting the benchmark yield. |
| 6 | Setting up of a Task Force Team | To follow up and data storing for CCE results, whereby update of benchmark yield, there should be a Task Force Team, composed of Directorate of Agricultural Finance and JASINDO. | <p><u>Online meeting with BAPPENAS (October 10, 2024)</u></p> <ul style="list-style-type: none"> ➤ BAPPENAS proposed the creation of a coordinating body (task force team) at the central level under their supervision. ➤ Tasks could include 1) uniform data collection (yield data, CCE results, etc.), 2) timely payment of subsidies and claims, and 3) engagement with stakeholders, both public and private. <p><u>BBSIP SDLP Visit (October 23, 2024)</u></p> <ul style="list-style-type: none"> ➤ Discussing the use of SISCrop technology for data standardization, the following perspectives on the need for a task force were expressed: <ol style="list-style-type: none"> 1) Monitor technical aspects when implementing agricultural insurance, 2) Oversee training of local staff on new tools, etc, 3) Ensure that the data collected through SISCrop is consistent with the benchmarks for insurance payments and insurance triggering. <p><u>Offline meeting with MOA insurance team (October 25, 2024)</u></p> <ul style="list-style-type: none"> ➤ Based on the results of the CCE, a proposal for a task force team to manage the data for the benchmark yield update was discussed. As a result, JASINDO and the Directorate General of Agricultural Finance were identified as key stakeholders to ensure accurate data handling and updating. ➤ The Task Force Team needs to coordinate with state-level BPS offices on the implementation of the CCE. |

| Step | Recommendations | Contents | Current Situation as of Dec. 2024 |
|------|--|--|---|
| | | | <p>First Workshop (October 28, 2024)</p> <ul style="list-style-type: none"> ➤ The JICA team stressed the importance of establishing a task force team, which would be a dedicated team to manage agricultural insurance. ➤ The team composition and tasks are to include: 1) representatives from MOA, BPS, BAPPENAS, and JASINDO; 2) technical experts from international partners (e.g., JICA); 3) the team would focus on resolving bottlenecks; and 4) claims handling. The team should also undertake: 5) integration of agricultural insurance with other agriculture-related subsidy programs; and 6) outreach to farmers and education on agricultural insurance. <p>First Workshop (October 28, 2024)</p> <ul style="list-style-type: none"> ➤ As part of a broader effort to improve AYII's operating framework, the participants recommended a task force team. ➤ The need for a clear division of roles and responsibilities between the DG Agro-Finance and JASINDO should be coordinated in the management and updating of benchmark yields based on CCE results. |
| 7 | Introduction of an Exit for the max. payout (future) | Introduce an exit level for the maximum payout instead of the current full proportional payout, e.g., at the level of 30% of the benchmark yield, full payout be done (currently, full payment is made at the zero production). | <p>No direct reference for the Exit Max payout</p> <p>Key related points include:</p> <p>On the parametric Models:</p> <ul style="list-style-type: none"> ➤ There was discussion on parametric insurance as a potential model, which could involve predefined payout thresholds but doesn't directly connect to setting an exit level like the proposed 30% benchmark (All Meeting). <p>On the challenges with Current Insurance Models:</p> <ul style="list-style-type: none"> ➤ Issues with consistent data accuracy and Crop Cutting Experiments (CCE). ➤ Government subsidies making changes to farmer contributions challenging. ➤ Limited data availability at Desa levels. <p>On the proposals for Improvement:</p> <ul style="list-style-type: none"> ➤ Using digital and remote sensing technologies to validate yields and streamline processes. ➤ Introducing hybrid insurance models combining indemnity and parametric approaches |
| 8 | Introduction of a hybrid type AYII (future) | In addition to the yield reduction by which the insurance is triggered, early-stage damages which need re-plantation should be considered, so-called 'failed planting'. This insurance trigger is very similar to the current situation of AOTP indemnity insurance, and be applied by plot not by area basis. | <p>Pre-Kickoff Meeting (September 13, 2024)</p> <ul style="list-style-type: none"> ➤ The concept of damages in the initial stage, called "planting failure," should be considered as a necessary trigger for triggering insurance. ➤ This mechanism is similar to the AOTP loss compensation. Assistance should be provided for crop losses in the early planting period so that farmers can replant and recover quickly. ➤ It was suggested that failed plantings be assessed on a parcel-by-parcel basis rather than some area-based approach applied in AYII. ➤ Addressing early-stage losses that require replanting allows for targeted compensation tailored to specific farmers' needs and region-specific risks. ➤ BAPPENAS stressed the need to incorporate compensation for planting failures into the national agricultural insurance framework. ➤ It is important that any approach to addressing early-stage damage requiring replanting be developed in |

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| Step | Recommendations | Contents | Current Situation as of Dec. 2024 |
|------|-----------------|----------|---|
| | | | <p>alignment with Indonesia's broader agricultural improvement strategy.</p> <p>Kickoff Meeting (September 18, 2024)</p> <ul style="list-style-type: none"> ➤ It could be considered as an important insurance mechanism to address losses in the early stages. ➤ Participants discussed improving the trigger to adapt it to parcel-by-parcel damage assessment, while ensuring consistency with existing schemes such as the AOTP. ➤ Discussion focused on applying the planting failure trigger on a plot-by-plot basis to increase fairness and accuracy. ➤ The approach to address losses in the initial phase, as opposed to the areal yield approach of AYII, may be better suited for implementation in pilot areas such as Karawang and Kendal. ➤ Current data collection methods such as Crop Cutting Experiments (CCE) are inadequate in making assessments for plot-level damage. ➤ Conducting damage assessments on a parcel-by-parcel basis to address losses in the early stages requires more resources than area-based schemes. ➤ Adaptation of existing policies and stakeholder coordination are needed to evaluate parcel-based triggers. ➤ A lack of understanding among farmers regarding insurance coverage and other procedures has been noted, and education and outreach to farmers regarding agricultural insurance need to be improved. ➤ Cooperation among stakeholders like MOA, BAPPENAS, and JASINDO is essential to incorporate coverage for planting failures into existing national insurance policies. ➤ The need to review the funding mechanism and the possibility of involving private insurance companies for broader participation were discussed. |

Source: Compiled based on various meetings, workshops, and interviews (JICA survey team)

Table 3.3.11 Summary of Recommendations for Design of AOTP

| Step | Recommendations | Contents | Current Situation as of Dec. 2024 |
|------|---|---|---|
| 1 | Introduction of different levels of premium, preferably, by Kabupaten, or by Province, or otherwise by island | Based on the last 6 years (2015-2020) experiences of AOTP, the average payout ratio by province shows an obvious trend, i.e., higher payout ratios show up in the provinces of Sumatra and Kalimantan islands while lower payout ratios in Jawa, Bali, Nusa Tenggara, and Sulawesi (except Sulawesi Selatan). Therefore, different levels of premium should be introduced taking into account the different actual payout ratios. | <p>Kickoff Meeting (September 18, 2024)</p> <ul style="list-style-type: none"> ➤ Participants discussed the feasibility of setting premium rates tailored to local risk levels, with a focus on maintaining equity and increasing participation in the AOTP. ➤ As an example, Karawang and Kendal have been found to have contrasting risk profiles (the two states are pilot districts for AYII). Therefore, the possibility of piloting the introduction of different premium rates in these two states was mentioned as a possibility. ➤ Accurate regional data on agricultural risk and historical yield history will be essential to establishing differentiated premiums. ➤ Challenges in implementation include the need for reliable data collection through improved CCR (Crop Cutting Experiment) and the use of advanced remote sensing technology. ➤ Cooperation between JASINDO, BAPPENAS, and MOA was highlighted. ➤ With regard to outreach to farmers, it was recommended that an educational campaign be conducted to help farmers understand the benefits of paying different premiums and the rationale for higher premiums in high-risk areas. |

| Step | Recommendations | Contents | Current Situation as of Dec. 2024 |
|------|-----------------|----------|---|
| | | | <p>Offline meeting with JASINDO (October 21, 2024)</p> <ul style="list-style-type: none"> ➤ The proposal suggests varying AOTP premium levels based on geographic units such as Kabupaten, Province, or Island to reflect local risk levels and conditions. ➤ The introduction of these different premium levels is intended to balance the equity of the system and to encourage the participation of farmers from both high- and low-risk areas. ➤ JASINDO executives expressed concern about potential conflicts between regions if the current uniform premium rates were in place. For example, farmers in lower-risk areas might feel penalized for paying the same premiums as farmers in higher-risk areas. ➤ JASINDO executives said that the willingness of farmers in high-risk areas to pay higher premiums still seems to be a challenge, especially given the financial constraints of farmers. ➤ Currently, the AOTP applies a uniform premium subsidy rate regardless of regional risk. ➤ The only difference in premium levels is in the commercial insurance products offered by JASINDO. There are no subsidies, but as a result, there is resistance to enrollment due to the amount customers can afford to pay. ➤ To test feasibility and farmer acceptability, a pilot implementation of differentiated premiums (premiums) in some areas could be considered. ➤ In government-supported programs such as AOTP, we will emphasize the need for regulatory changes to allow for premium differentiation. |

Source: Compiled based on various meetings, workshops, and interviews (JICA survey team)

Table 3.3.12 Summary of Recommendations for Implementation of both AOTP and AYII

| Step | Recommendations | Contents | Current Situation as of Dec. 2024 |
|------|---|---|---|
| 1 | Socialization and Registration of the Farmers | <p>1) It should be considered that the AOTP/AYII be bundled with subsidized fertilizer program as; 1) nowadays, almost all the small scale farmers access the subsidized fertilizers, and 2) farmers usually access the subsidized fertilizers through their farmer group (Poktan), which is also the Registration/ Claim/ Payout base of the insurances.</p> <p>2) Socialization for and invitation to the AOTP/AYII should be done alongside with other agricultural programmes such as 'Maximum Regular Program' of Puslatan/ BPPSDM, or any other local government programs. Further, key opinion leaders, such as village leaders, farmer leaders, Bupati (mayor), etc. should be involved in promoting AOTP/AYII. In addition, social media should be utilized including the distribution of such soft data materials as brochure, banner, etc. and also radio broadcast be considered.</p> <p>3) For the AYII Registration, a web-based registration</p> | <p>Meeting with JASINDO (October 21, 2024)</p> <ul style="list-style-type: none"> ➤ Farmers rely heavily on the extension officers of the District Agricultural Office (Kabupaten DINAS) for insurance registration. ➤ Efforts are underway to make the process of enrolling and registering for insurance simpler and to make the farmers less dependent on the extension officers. ➤ To reduce administrative bottlenecks/cost, direct registration of farmers under the supervision of Dinas is being considered. ➤ A streamlined process is needed to ensure timely registration and avoid procedural delays. <p>First Workshop (October 28, 2024)</p> <ul style="list-style-type: none"> ➤ Farmers' limited participation in agricultural insurance is due in part to inadequate awareness campaigns. ➤ Since registration is time-consuming and inefficient, farmers face difficulties in accessing agricultural insurance. ➤ There is a need to improve farmers' literacy on agricultural insurance through workshops and training sessions. ➤ There is a need to strengthen the digital system of land and farmer registration to |

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|------|---|--|--|
| | | <p>system should be developed, like SIAP applied under AOTP. In fact, by using SIAP for the AOTP registration, not much problem takes place, while AYII registration is currently made by manual, so that it takes time and also causes human errors.</p> <p>4) Note that SIAP should have at least the following improvements: 1) notification function, and 2) proxy operation function.</p> | <p>simplify the process and reduce input errors.</p> <ul style="list-style-type: none"> ➤ There is a need to promote collaboration between government agencies and the private sector, and to increase efficiency while expanding the scope of such collaboration. <p><u>Meeting with Central Jawa DINAS (Central Jawa MOA) on November 7, 2024</u></p> <ul style="list-style-type: none"> ➤ Although extension officers are responsible for educating farmers, it remains difficult to explain the benefits of insurance to farmers and raise awareness. ➤ Farmers have limited knowledge of registration procedures. ➤ Digital solutions such as the SIAP system are being used to record premium subsidies and farmers' contributions, but accessibility is still low. ➤ Subsidy programs provide free or reduced premiums payable by farmers and encourage them to purchase insurance, but it requires significant financial support. <p><u>Interview with Karawang DINAS (Kabupaten MOA) managers (November 13, 2024)</u></p> <ul style="list-style-type: none"> ➤ Insurance dissemination was conducted at the Kecamatan (sub-district) level, but before moving to the field, the Kabupaten office provided an overview of the activities to the extension officers assigned to the Kecamatan office. ➤ As an annual program, the Karawang DINAS brought together managers such as POPT³¹ (pest and disease inspectors) assigned to the UPTD³² (Technical Implementation Unit) established in Kecamatan office, so that they and their colleagues can effectively disseminate information. ➤ In conducting extension to farmers, it remains a major challenge because it is difficult to gain farmers' understanding when explanations are unclear. ➤ In order to increase the effectiveness of dissemination for the insurance products, it is necessary to practice and thus concentrate on the field. |
| 2 | Claim and Payout for both AOTP and AYII | Claim and payout procedure has a lot of challenges as of now for both insurances of AOTP and AYII. Following table compares the current procedure of claim and payout and a procedure recommended by the JICA consultant team; total 7 steps for the current one vs. only 2 steps for the recommended one respectively: | <p><u>Meeting with JASINDO (October 21, 2024)</u></p> <ul style="list-style-type: none"> ➤ Insurance claims require manual processes such as on-site damage assessment and signatures by farmer groups/ farmers. This has made the process time-consuming. ➤ JASINDO has plans to use remote sensing to streamline the damage assessment. ➤ JASINDO have just started working with PT Pos Indonesia (Indonesia Post) for safe and timely claim payment*. ➤ SIAP is still in the pilot phase and has operational challenges, such as not being able to access data at the Kecamatan level. ➤ Expanding the AYII will require cooperation with the BPS to improve process and increase the accuracy of data on the crop yields. |

³¹ Petugas Pengendali Organisme Pengganggu Tumbuhan - Petugas Perlindungan Tanaman Pangan dan Hortikultura (Pest and diseases officer)

³² Unit Pelaksana Teknis Daerah (Sub-district/Kecamatan Technical Implementation Unit)

| | | <p style="text-align: center;"><u>Comparison of Current Claim/Payout Procedure and Improvement</u></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 50%; text-align: center;">Current Procedure: long procedure</th> <th style="width: 50%; text-align: center;">Recommended: Short-cut:</th> </tr> </thead> <tbody> <tr> <td style="vertical-align: top;">1) Dinas confirms if there is a claim or not by comparing the Desa-yield with the benchmark yield, and if triggered, sends the claim documents, including ID photos, to JASINDO branch office by post/hand.</td> <td style="vertical-align: top;">1) Dinas confirms if there is a claim or not by comparing the Desa-yield with the benchmark yield, and if triggered, sends the claim documents (without ID photos) to JASINDO HQs office and CC to the JASINDO branch office as well as to the farmer group by online.</td> </tr> <tr> <td style="vertical-align: top;">2) JASINDO branch office checks the claim document, then if completed, will send to JASINDO HQ, but if not completed, will send back to Dinas by post/hand.</td> <td style="vertical-align: top;">2) JASINDO HQs office, upon approval by the OIC, transfers the payout to the bank account of the farmer group. *OIC: Officer in charge</td> </tr> <tr> <td style="vertical-align: top;">3) JASINDO HQs will make the approval on the claims upon the checking and scrutinization (it takes time).</td> <td></td> </tr> <tr> <td style="vertical-align: top;">4) After the approve by JASINDO HQ, JASINDO HQs will issue the bill to the JASINDO branch office, then Dinas office, then to the farmer group by post/hand. Note that this bill needs to be signed by all the farmer</td> <td></td> </tr> </tbody> </table> | Current Procedure: long procedure | Recommended: Short-cut: | 1) Dinas confirms if there is a claim or not by comparing the Desa-yield with the benchmark yield, and if triggered, sends the claim documents, including ID photos, to JASINDO branch office by post/hand. | 1) Dinas confirms if there is a claim or not by comparing the Desa-yield with the benchmark yield, and if triggered, sends the claim documents (without ID photos) to JASINDO HQs office and CC to the JASINDO branch office as well as to the farmer group by online. | 2) JASINDO branch office checks the claim document, then if completed, will send to JASINDO HQ, but if not completed, will send back to Dinas by post/hand. | 2) JASINDO HQs office, upon approval by the OIC, transfers the payout to the bank account of the farmer group. *OIC: Officer in charge | 3) JASINDO HQs will make the approval on the claims upon the checking and scrutinization (it takes time). | | 4) After the approve by JASINDO HQ, JASINDO HQs will issue the bill to the JASINDO branch office, then Dinas office, then to the farmer group by post/hand. Note that this bill needs to be signed by all the farmer | | <p>*: Regarding the delivery of the policy, it will be sent to the farmers' addresses indicated on the farmer's ID registration through PT Post Indonesia's delivery service. Also, for payment in case of confirmed claims, the post office staff will contact the farmers based on the list prepared by JASINDO and hand over the compensation.</p> <p><u>Meeting with MOA Insurance Team (October 25, 2024)</u></p> <ul style="list-style-type: none"> ➤ For insurance payments, the partnership with PT Post Indonesia, which enables direct payments to farmers, is a good example. ➤ Bundling agricultural insurance with agricultural credit programs is being considered, among other things, to move forward. ➤ More accurate data is needed to establish benchmarks. ➤ Variations in the development of data-handling infrastructure in different regions have hindered the broader adoption of agricultural insurance. ➤ Geospatial data and remote sensing techniques should be used to improve the accuracy of data validation in relation to claims. ➤ It is necessary to reduce the number of steps in the claims process through the integration of already developed tools and also through direct linkage between JASINDO headquarters and farmers. ➤ To improve the accuracy of CCEs, training on digital tools should be provided to agricultural extension officers assigned to the Kecamatan office and cooperation with the BPS should be strengthened. <p><u>First Workshop (October 28, 2024)</u></p> <ul style="list-style-type: none"> ➤ The insurance claim process requires multiple manual steps and requires the cooperation of JASINDO, extension officers, and local farmers. ➤ Claims process and payout are often delayed due to incomplete land data and heavy reliance on manual documentation. ➤ JASINDO uses a SIAP application to track the process but faces challenges such as turnover and increased workload for government employees who provide input. ➤ AYII needs to confirm yields on the field, and this is made only by Crop Cutting Experiments (CCE). Implementation of CCEs often makes the process of claim and payout delayed due to misalignment of when to conduct CCEs, and high operational costs limiting efficiency. ➤ For AYII, since there is currently no app like SIAP, the proposal on the left includes simplifying the CCE with digital tools and clarifying the timeline. |
|--|--|---|-----------------------------------|-------------------------|---|--|---|---|---|--|--|--|---|
| Current Procedure: long procedure | Recommended: Short-cut: | | | | | | | | | | | | |
| 1) Dinas confirms if there is a claim or not by comparing the Desa-yield with the benchmark yield, and if triggered, sends the claim documents, including ID photos, to JASINDO branch office by post/hand. | 1) Dinas confirms if there is a claim or not by comparing the Desa-yield with the benchmark yield, and if triggered, sends the claim documents (without ID photos) to JASINDO HQs office and CC to the JASINDO branch office as well as to the farmer group by online. | | | | | | | | | | | | |
| 2) JASINDO branch office checks the claim document, then if completed, will send to JASINDO HQ, but if not completed, will send back to Dinas by post/hand. | 2) JASINDO HQs office, upon approval by the OIC, transfers the payout to the bank account of the farmer group. *OIC: Officer in charge | | | | | | | | | | | | |
| 3) JASINDO HQs will make the approval on the claims upon the checking and scrutinization (it takes time). | | | | | | | | | | | | | |
| 4) After the approve by JASINDO HQ, JASINDO HQs will issue the bill to the JASINDO branch office, then Dinas office, then to the farmer group by post/hand. Note that this bill needs to be signed by all the farmer | | | | | | | | | | | | | |

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| | | group members who made the claim (it takes long time). | | |
| | | 5) The farmer group leader has to collect all the claim-made members to obtain their signatures one by one (it takes time). | | |
| | | 6) The farmer group leader will send the signed bill to the Dinas, then to the JASINDO branch office, and then to the JASINDO HQs by post/hand. | | |
| | | 7) JASINDO HQ now transfers the payout to the bank account of the farmer group. | | |

Source: Compiled based on various meetings, workshops, and interviews (JICA survey team)

3.4 Field Survey on Understanding of Agricultural Insurance

In order to capture the current level of understanding and challenges of the agricultural insurance the AOTP and AYII, a field survey was conducted to interview farmers, provincial officers and agricultural extension workers.

3.4.1 Outline of Field Survey

Table 3.4.1 summarizes the outline of the survey. The target provinces for the study were Karawang district in West Java province and Kendal district in Central Java, where AYII was piloted in the previous JICA project.

For the farmer survey, three villages in each district were randomly selected from those that had implemented AYII in the previous project and three from those that had not, and about 10 representative farmers from each village were identified and surveyed about their understanding and insurance product preferences using a questionnaire. To supplement the survey of farmers, interview with provincial and district agricultural office and agricultural extension workers were conducted to capture their understanding of agricultural insurance, challenges, and efforts to the socialization.



Figure 3.4.1 Target Provinces

Source: JICA Survey Team with Open Street Map and OCHA Humanitarian Data Exchange

Table 3.4.1 Outline of the Field Survey

| | |
|-----------------------------|---|
| Objectives | To understand the level of understanding and penetration of agricultural insurance |
| Methodology | Interview survey with survey questionnaire |
| Period of survey | November 2024 |
| Target respondents | Farmers, extension officers and agricultural insurance officials |
| Target district (Kabupaten) | Kendal District in Central Java Province; Karawang District in West Java Province |
| Target village (Desa) | 3 villages selected from each prefecture that have implemented the AYII pilot project and 3 villages selected from each prefecture that have not. 12 villages in total in the 2 prefectures |
| Target sample size | 10 from each village, 120 farmers in total |
| Sampling | Key informants were selected in convenience sampling |

Source: JICA Survey Team

3.4.2 Result

The results of the survey are as follows. For simplicity of notation, villages where the AYII pilot project was implemented will henceforth be referred to as "AYII villages" and villages where the AYII pilot project was not implemented will be referred to as "AOTP villages".

(1) Attributes of the Respondents

The total number of respondents from each village was 114. The average age of the respondent farm household heads was 49.6 years in Kendal and 50.1 years in Karawang, with no significant difference between AYII and AOTP villages.

Kendal is dominated by mountainous and sloping areas, while Karawang situates in a low-land, major rice producing area. Therefore, the average cultivated area of paddy per respondent farmer was 0.66 ha in Kendal, while the average was 1.47 ha in Karawang. The average productivity and farm income of rice farmers in Karawang were higher than those in Kendal, with an average of IDR 78.4 million in Karawang compared to IDR 16.3 million in Kendal, indicating a large difference.

Table 3.4.2 Attributes of Survey Respondents

| Items | AYII Pilot Desa | | Non-AYII Pilot Desa (AOTP) | | Total | |
|---|-----------------|----------|----------------------------|----------|--------|----------|
| | Kendal | Karawang | Kendal | Karawang | Kendal | Karawang |
| Number of respondents | 37 | 36 | 20 | 21 | 57 | 57 |
| Average age of household head | 48.6 | 47.5 | 51.4 | 54.6 | 49.6 | 50.1 |
| Total land area (ha) | 0.63 | 1.55 | 0.72 | 1.85 | 0.66 | 1.66 |
| Total paddy area (ha) | 0.53 | 1.50 | 0.41 | 1.43 | 0.49 | 1.47 |
| Average annual paddy production (ton/year) | 5.81 | 12.61 | 6.46 | 14.96 | 6.04 | 13.48 |
| For how many times of cropping? | 2.08 | 2.00 | 2.20 | 1.90 | 2.12 | 1.96 |
| Average annual farming income (Million Rp.) | 17.88 | 71.19 | 13.41 | 90.72 | 16.31 | 78.39 |

Source: JICA Survey Team

In terms of the educational level of the respondents' heads of households, a larger percentage of respondents in both provinces had a high school diploma. The percentage of respondents with higher education was slightly higher in Kendal than in Karawang. In particular, in AYII village in Kendal, 12% of the respondents had a university degree and 54% had a high school degree.

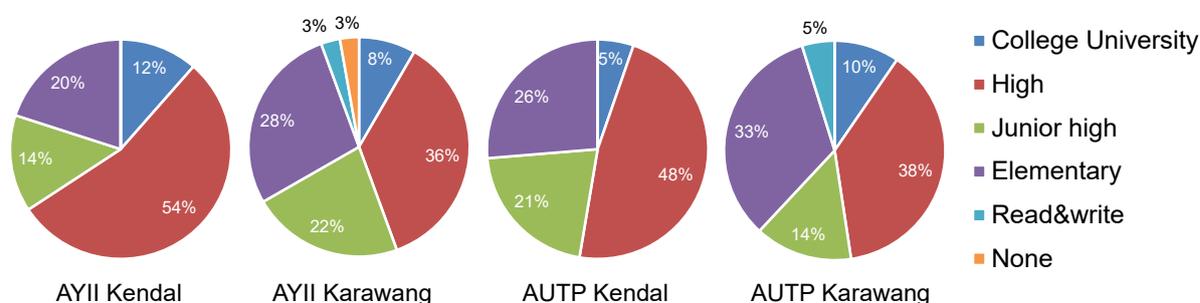


Figure 3.4.2 Education Level of Household Heads

Source: JICA Survey Team

(2) Experience

(2.1) Experience of AOTP and AYII

The following figure shows the experience of the respondents in purchasing AOTP/AYII. 16 farmers in Kendal had joined AOTP only once, while the majority of farmers in Karawang had participated 3 - 5 times (15 respondents). As for AYII, since it was a pilot project implemented from 2021 to 2023, the majority of farmers joined it once or twice.

The reasons why respondents joined AOTP/AYII are shown in Figures 3.4.5 and 3.4.6, respectively. In Kendal, the most common reason for both AOTP and AYII was the availability of government subsidies for premiums, while only two farmers answered that they joined AOTP as a risk management tool. Also in Karawang, the majority of respondents for AYII, cited government subsidies for premiums as the

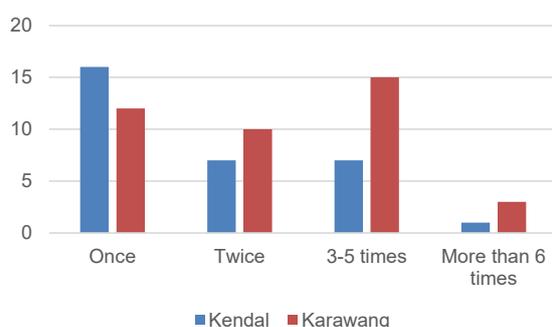


Figure 3.4.3 Number of Times Joined AOTP

Source: JICA Survey Team

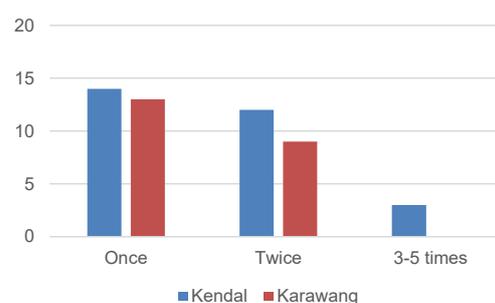


Figure 3.4.4 Number of Times Joined AYII

Source: JICA Survey Team

most common reason, while for AUTP, the most common reason was that they were recommended by an agricultural extension officer or their colleague farmers. According to the agricultural officers in each province, the source of information on farming and agricultural insurance for the majority of farmers was agricultural extension workers, and other media were rarely used as a source of information for their farming.

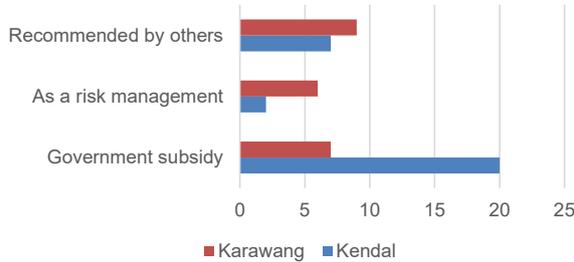


Figure 3.4.5 Reason for Joining AUTP
Source: JICA Survey Team

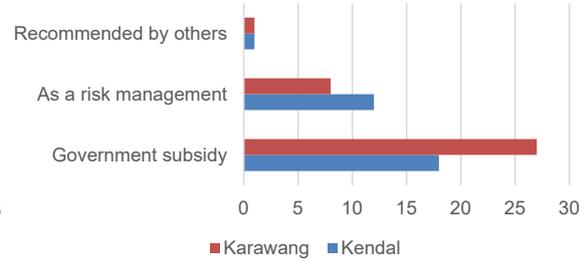


Figure 3.4.6 Reason for Joining AYII
Source: JICA Survey Team

(2.2) Attendance of Socialization

The number of times respondents participated in socialization activities is shown in Figure 3.4.7 for AUTP and Figure 3.4.8 for AYII, respectively. For AUTP, the majority of respondents had participated once in both Kendal and Karawang. While a certain number of farmers had participated five times, there were also some who had never participated. For AYII, most of the respondents had participated in socialization activities, since the insurance enrollment and socialization were linked as a pilot project.

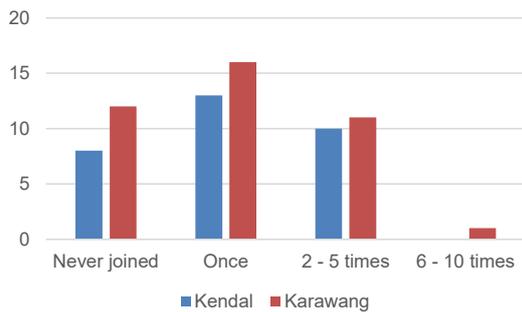


Figure 3.4.7 Number of AUTP Socializations Attended
Source: JICA Survey Team

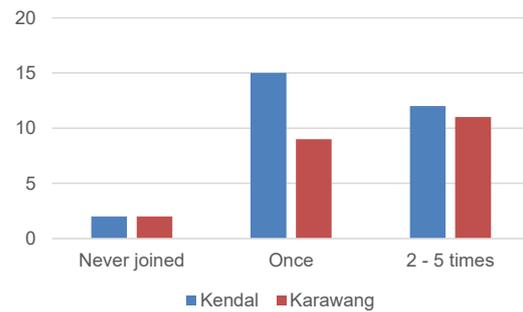


Figure 3.4.8 Number of AYII Socializations Attended
Source: JICA Survey Team

(2.3) Level of Understanding

To determine farmers' understanding of AUTP and AYII, Figures 3.4.9 and Figure 3.4.10 show the share of the Likert scale regarding their subjective understanding of specific aspects, such as risk coverage, claim procedures, and payment calculation.

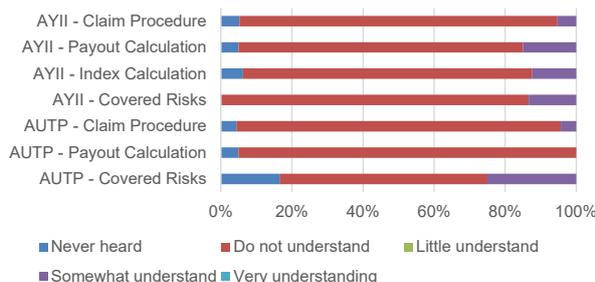


Figure 3.4.9 Level of Understanding in AUTP/AYII (Kendal)
Source: JICA Survey Team

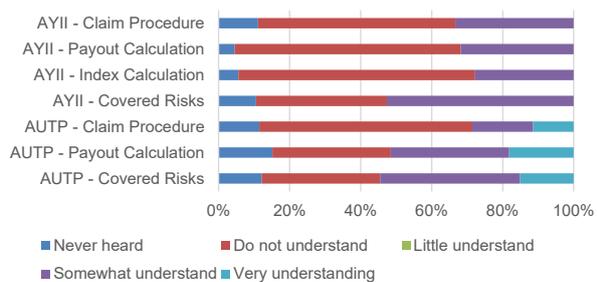


Figure 3.4.10 Respondents' Level of Understanding in AUTP/AYII (Karawang)
Source: JICA Survey Team

In Kendal, the majority of respondents indicated that they "do not understand" any of the items, regardless of whether they joined AUTP or AYII. More than 20% of the respondents answered "Somewhat understand" for the AUTP covered risks, but none of the respondents answered "Very understanding" for any of the items.

In Karawang, more respondents answered that they "Somehow understand" or "Very understanding" compared to respondents in Kendal. In particular, around 10% of the respondents answered that they "Very understanding" for each item of the AUTP. In contrast, more than 20% of the AYII respondents answered that they "Somewhat understand" but did not answer with "Very understanding". Compared to the AUTP, there is room for improvement in the level of understanding for the AYII.

Figure 3.4.11 shows the share of the respondents who joined both and understand the difference between AUTP and AYII. As can be inferred from the above-mentioned understanding by item, more respondents in Karawang understood the difference between the two than in Kendal. In Kendal, less than half of the respondents (41%) understood the difference.

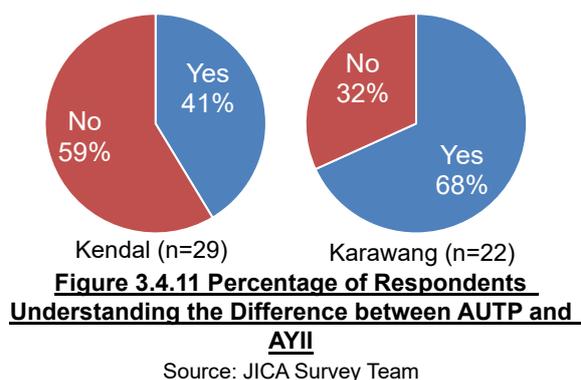


Figure 3.4.11 Percentage of Respondents Understanding the Difference between AUTP and AYII
Source: JICA Survey Team

(3) Satisfaction and requests for current insurance

(3.1) Satisfaction with AUTP and AYII

Figure 3.4.12 shows the level of satisfaction with each of the AUTP and AYII, using a five point Likert scale.

11% percent of the respondents showed "very satisfied" and 70% were "somewhat satisfied" with the AUTP. The main reasons they expressed were that that holding the insurance made them feel more secure in their farming and that they had experienced receiving payouts when they faced loss by an actual disaster.

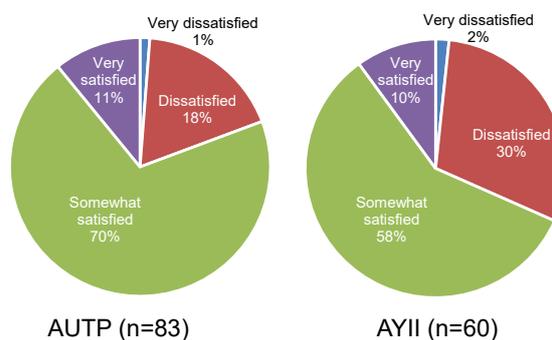


Figure 3.4.12 Farmers' Satisfaction on Agricultural Insurance
Source: JICA Survey Team

On the other hand, a small number of respondents were found to be "dissatisfied" or "very dissatisfied" with the AUTP. Their reasons given for this included the complexity of the claims process, lack of their experience in receiving payouts, and the inability to apply for claims with a loss ratio of less than 75% as stated in the terms of AUTP.

Regarding the satisfaction with the AYII, although the percentage of favorable responses to the AYII was lower than to the AUTP, 10% of respondents were "very satisfied" and 58% were "somewhat satisfied" with the AYII. Their reasons for the favorable responses included the fact that, as with AUTP, the insurance made farmers feel more secure in their farming operations, and that, compared to AUTP, the experience of receiving payouts in the event of a loss was smoother. In contrast, farmers who answered "dissatisfied" or "very dissatisfied" with AYII cited difficulties in understanding the index and the experience of not receiving payouts even when losses occurred due to low standard yields as reasons for their dissatisfaction.

(3.2) Satisfaction with Socialization Activities

Figure 3.4.13 shows the level of satisfaction with AOTP/AYII socialization activities. Respondents who had participated in any socialization activities expressed favorable satisfaction with 15% being "very satisfied" and 68% being "somewhat satisfied." Respondents appreciated extension officers' explanations which helped them better understand the insurance and their friendly attitude in providing explanations. 17% of the respondents were "dissatisfied" with the socialization activities, and the reasons for this were that they felt the frequency of the socialization activities was insufficient and that they were not able to understand the contents of the AOTP and the AYII.

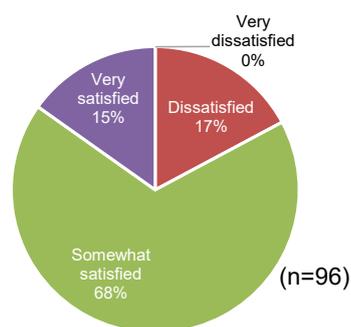


Figure 3.4.13 Farmers' Satisfaction on Socialization for Agricultural Insurance
Source: JICA Survey Team

(3.3) Risk Perception

Figure 3.4.14 summarizes the level of change of risk perception on their farming with holding agricultural insurance, using a four-point Likert scale.

Less than half of the farmers (27%) responded that having agricultural insurance had "significantly reduced" or "somewhat reduced" their risk perception to their farming. Such farmers attributed this to the fact that they felt more secure in planting their crops because they feel that they would be compensated in the case of calamities.

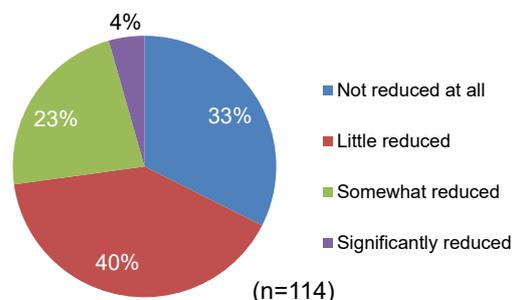


Figure 3.4.14 Risk Perception with Agricultural Insurance
Source: JICA Survey Team

On the other hand, 73% of the farmers answered that their risk perception in farming was "little reduced" or "not reduced at all" by agricultural insurance. The reasons for this were that they had no experience of receiving payouts and did not feel that it reduced risk. Besides, the current sum insured was insufficient to cover their production costs which are under inflation.

(3.4) Reason for Thinking of Discontinuing of AOTP/AYII

In relation to the level of satisfaction, Figure 3.4.15 summarizes the reasons for thinking to stop joining the insurance if the respondents had ever thought of discontinuing agricultural insurance.

In both Kendal and Karawang, the primary reason mentioned was the complicated and time-consuming insurance claims process. Followingly, other reasons were that the insurance was difficult for them to understand, that they felt their risk was not that high considering the premium amount, and that the sum insured was insufficient.

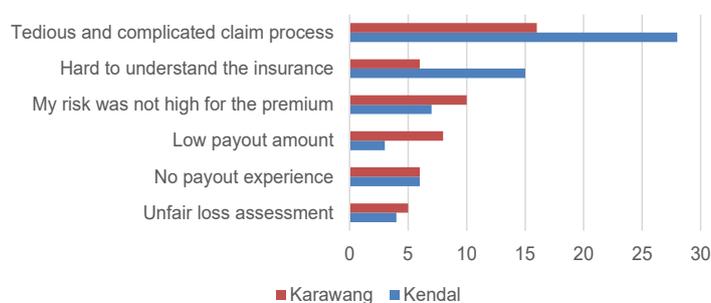


Figure 3.4.15 Reason for Thinking to Stop Joining AOTP/AYII
Source: JICA Survey Team

(3.5) Status of Colleague Farmers Who Are Aware of Agricultural Insurance

In addition to Figure 3.4.15, the respondents were asked about the status of their colleague farmers who were aware of the AUTP and AYII programs but unwilling to join them. Figure 3.4.16 summarizes that 64% of the respondents indicated that such farmers exist around them. Figure 3.4.17 shows the opinions of such farmers, as tabulated through the respondents.

The most common reason assumed was that they did not understand the benefits of the AUTP or AYII. Secondly, they perceived the insurance process to be complicated, were skeptical about the insurance, and were unable to participate because they did not belong to a farmer group which supports their member farmers to enroll as a group.³³

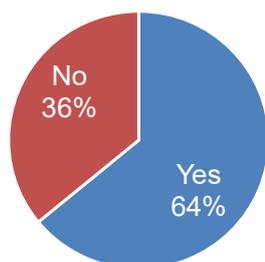


Figure 3.4.16 Percentage of Respondents who knows others who are not willing to join despite awareness of AUTP/AYII

Source: JICA Survey Team

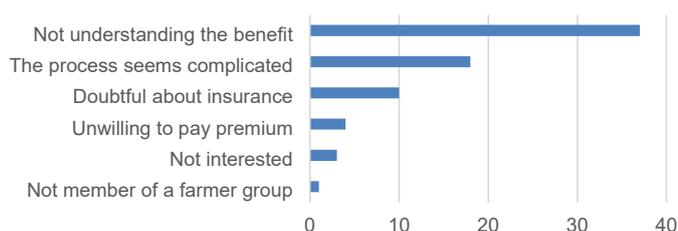


Figure 3.4.17 Reasons for Unwillingness to Join AUTP/AYII

Source: JICA Survey Team

(4) Preference for Insurance

(4.1) Preference for Insurance Design

Preferences for agricultural insurance products were as follows. Between higher premium with higher sum insured and lower premium with low sum insured, the responses were unbiased and bifurcated, with no differences in preference as shown in Figure 3.4.18.

In terms of the product type, whether indemnity type or index based type, more respondents (56%) preferred indexed policies, which is the latter, while there were still certain percentage of respondents (44%) preferred the conventional indemnity type, as shown in Figure 3.4.19,



Figure 3.4.18 Preference on Agricultural Insurance (1/2)

Source: JICA Survey Team

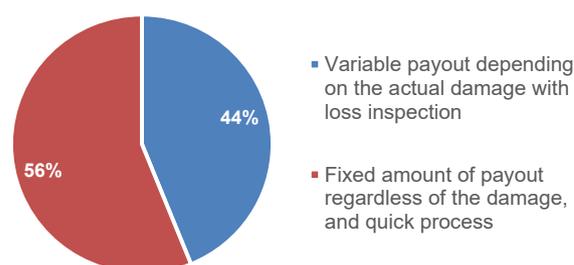


Figure 3.4.19 Preference on Agricultural Insurance (2/2)

Source: JICA Survey Team

(4.2) Willingness to Pay

The sum insured of the current AUTP is IDR 6 million per hectare. In reference to this, the respondents willingness to pay for the premium of sum insured at IDR 6 million, is shown in Figure 3.4.20. The most common willingness to pay in both district was IDR 3.6 thousand, which is same as the current premium rate, which is 6 % of the sum insured. Few respondents were willing to pay more than IDR 3.6 thousand.

³³ According to Kendal officers, many farmers join AUTP via their farmer group.

In Central Java and West Java, the provincial government normally provides a subsidy of 20% of the premium to encourage farmers to join the AOTP and meet the quota of the insured area allocated by the central government. With the regular premium subsidy (80%) from the central government and additional subsidy (20%) from the local government, farmers in these provinces normally join insurance for free. Given this background, many respondents were willing to pay less than IDR 3.6 thousand.

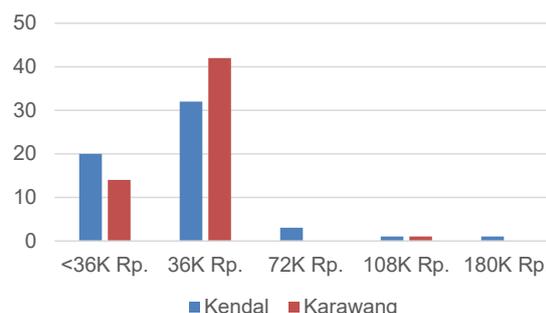


Figure 3.4.20 Willingness to Pay for Agricultural Insurance of IDR 6 million/ha
Source: JICA Survey Team

(4.3) Collaboration with Other Programs

Among the respondents, participation in other public services such as seed distribution and small loan programs is summarized in Figure 3.4.21. In both districts, the majority of respondents participated in the seed distribution program and the fertilizer subsidy program. About 30% of respondents in each district were also identified as participating in People’s Business Credit (KUR³⁴), which provide small loans to MSMEs without collateral .

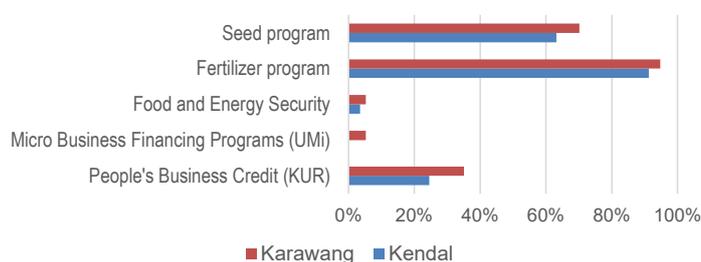


Figure 3.4.21 Percentage of Respondents Who Join Other Support Programs
Source: JICA Survey Team

Related to this, their willingness to combine agricultural insurance with other support services such as the fertilizer subsidy program and the microcredit program is shown in Figure 3.4.22. In both districts, more than half of the respondents were for combining agricultural insurance with other public services .

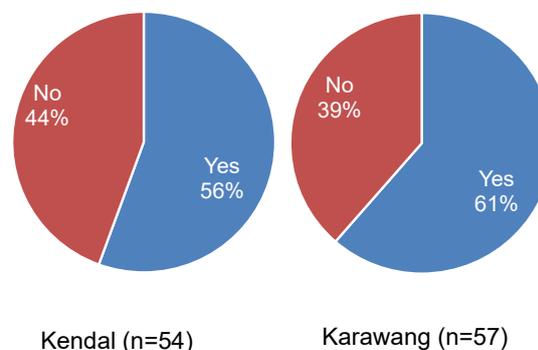


Figure 3.4.22 Percentage of Farmers Who Agree to Bundling of Agricultural Insurance with other Programs
Source: JICA Survey Team

Many of the respondents who agreed with the combination expressed hope for simplification of enrollment procedures and payments, as well as for more comprehensive benefits by both finance and insurance. In contrast, respondents who did not agree with the idea were concerned about the increased cost and the loss of transparency in the combination of multiple services.

(5) Interview with Local Governments

(5.1) Challenges on Agricultural insurance dissemination challenges and local government initiatives

Regarding the challenges in promoting agricultural insurance and their own efforts. Provincial governments of Central Java and West Java, as well as the agricultural extension officers of Kendal and

³⁴ Kredit Usaha Rakyat (KUR) is providing collateral-free loans to MSMEs and business groups to support working capital and investment.

Karawang districts, their comments are as follows.

i. Farmers' understanding of insurance is still insufficient

Farmers' understanding of agricultural insurance remains insufficient, and some farmers have negative impressions of insurance. To improve farmers' understanding, the extension workers are trying hard to encourage farmers to join, but the budget for extension activities is limited.

ii. Quota and premium subsidy by the local government

Each year, the central government allocates a target area of AOTP coverage to each province as a quota, with budget for the premium subsidies. Achieving this target area is a high priority for the provincial governments. Given that farmers' understanding of agricultural insurance is low, the local government's own budget provides an additional 20% subsidy for premiums, allowing farmers to join the AOTP for free, to achieve the target insured area.

iii. Disagreement with Jasindo.

In some AYII villages, insurance claims were not approved due to deficiencies in the implementation of the CCE. These cases have reinforced farmers' negative impressions of agricultural insurance.

(5.2) Agricultural Extension Workers' Understanding and Needs

Figure 3.4.23 shows the level of understanding of AOTP/AYII among agricultural extension workers. Due in part to the contribution of TOT activities in the previous JICA project and further, no respondents answered that they did not understand any of the items of AOTP or AYII at all, and about 80% of them indicated "somehow understand" or "very understanding".

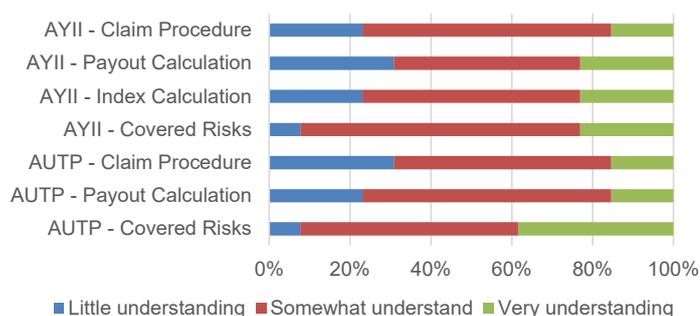


Figure 3.4.23 PPL's Level of Understanding on Agricultural Insurance

Source: JICA Survey Team

Figure 3.4.24 shows the challenges in implementing agricultural insurance socialization activities. The most frequently cited challenge was "difficulty in teaching farmers about agricultural insurance." Even though most of them answered that they understood the details of agricultural insurance, it is difficult to teach it to farmers.



Figure 3.4.24 Challenges on Socializing Agricultural Insurance

Source: JICA Survey Team

Other issues cited were "Insufficient budget for socialization activities" and "Lack of interest in insurance among farmers."

In terms of the effective means of socialization to farmers, traditional face-to-face instruction was still considered the most effective, as shown in Table 3.4.3. There is still little practice among farmers using media such as digital tools and social networking for their farming.

Table 3.4.3 Extension Officers' Ranking on Effective Means of Socialization to Enhance Farmers' Awareness on Agricultural Insurance

| Mean of Socialization | 1st | 2 nd | 3rd |
|----------------------------------|-----|-----------------|-----|
| Increase face-to-face trainings | 12 | 1 | 0 |
| Availing video/digital materials | 1 | 11 | 1 |
| Utilize SNS | 0 | 1 | 12 |

3.4.3 Summary

The challenges to the dissemination of agricultural insurance identified via the field survey results and the measures taken to address them are described below.

(1) Lack of understanding by farmers and the role of extension officers

As mentioned many times, farmers' understanding of insurance still has room for improvement. Extension workers are the primary source of information and the only point of contact for farmers in general when purchasing agricultural insurance. Farmers' satisfaction with socialization by extension workers was generally high, but it still has room to enhance farmers' understanding of the specifics of agricultural insurance. Although extension workers showed a high level of understanding of the details of agricultural insurance, it is still difficult for them to teach insurance to farmers.

Therefore, extension activities should be effectively implemented by updating the educational materials used by extension workers and making them easier for farmers to understand. In particular, more friendly guidance for loss assessment mechanisms and insurance claim procedures is important. In addition, alternative enrollment channels other than extension workers should be explored to broaden the opportunity for farmers.

There are several factors causing the lingering low awareness of the farmers: 1) farmers can join insurance for free through the subsidies from the central and the local government, and 2) the practice in which farmers can join AOTP/AYII as a group rather than individually. These systems can make it easier to achieve the quota by the central government, whereas they may reduce incentives of individual farmers to learn AOTP/AYII.

(2) Issues in claim procedure

The complicated and time-consuming procedures of AOTP from loss assessment to the payout have been one of the factors discouraging farmers to join AOTP. Some farmers who had experienced AYII showed their preference on AYII to AOTP because of its simpler payment process.

To solve this issue, MOA has started a trial to streamlining the insurance claims process in collaboration with the postal system. Such system that simplifies and streamlines insurance claim procedures will be easy for farmers to use and yet can be operated efficiently by insurance companies.

(3) Issues in the design of current insurance products

There were many complaints about inadequate insured amount and the limited risk coverage. While the cost of production continues to inflate year after year, the sum insured of AOTP has not changed since 2015. Therefore, there is a need to adjust the sum insured in accordance with the current price. More risk coverage can be considered with different insured amount and premium rate.

(4) Government subsidy and its limitation

AOTP is usually fully subsidized by the central and local governments. This causes financial burden for the government. On the contrary, subsidized farmers are likely to take free insurance for granted. As noted above, this causes insufficient awareness and understanding of the farmers.

More than 65% of respondents indicated a willingness to accept 80% subsidized premium, which with

their 20 % contribution. If the government wishes to expand the insured area all over the nation with financial sustainability, it would be effective to review the sources of premium subsidies and the surplus can be allocated to the budget for socialization activities, more quota or redesign of insurance.

(5) Potentiality for synergy with other support programs

Farmers generally participate in multiple support programs (e.g., micro credit, fertilizer subsidy programs), and more than 50% of respondents supported bundling agricultural insurance with other services for efficiency reasons. There is a good potential for the policy makers to restructure the insurance and budget. For example, when bundling micro credit with agricultural insurance, the parameters such as premium rate, subsidy rate can be calibrated inside the bundle. Although careful consideration is needed regarding the scope of eligibility and coverage, bundling will provide an opportunity not only to benefit farmers but also to the government financially.

3.5 Initiatives for Agricultural Insurance by the Private Sector

The following is a summary of the results of the review of the information disclosed by each company and interviews with the General Insurance Association in Indonesia (AAUI) and each company regarding the business activities of private-sector agricultural insurance.

1) PT Asuransi Central Asia

- ✓ The company was established in 1956, and in the field of microinsurance, it began selling medical insurance in 2009, when dengue fever was prevalent, and began selling yield index insurance in 2015 and weather index insurance in 2017³⁵.
- ✓ Rather than selling insurance on its own, the company is building an ecosystem that provides low-income farmers with comprehensive access to financial services and agricultural technology, and it began operating as a business in 2021.
- ✓ Specifically, the insurance is sold to business companies that produce rice and to Food Station, a government-affiliated company that secures and distributes rice stocks.
- ✓ Food Station needs to secure at least three months' worth of rice, but individual farmers are easily affected by harvest conditions, so a more robust source of supply is needed.
- ✓ It is also essential for the business company to create an environment in which farmers can reliably harvest their crops. To this end, the business company also provides loans. To ensure the reliable collection of loans, agricultural insurance is provided via the business company.
- ✓ This ecosystem also includes agricultural scientists who support agricultural technology, the company Syngenta, which provides agricultural chemicals, and Scala Agri Scala, which provides an agricultural monitoring system that utilizes remote sensing technology. It also promotes the use of biofertilizers and has a partnership with Tokyo Aid in Japan.
- ✓ From the perspective of insurance, they have expanded their coverage to include not only rice, but also corn, potatoes, chili peppers, shellfish, etc., and in the two years from 2021, they have covered more than 10,000 farmers. The loss ratio is below 75%.

2) PT Mandiri AXA General Insurance

- ✓ Indonesian subsidiary of a French insurance and finance group. In 2019, it launched a project to provide loans and insurance (weather index insurance) to smallholder farmers. However, due to the

³⁵ ACA, https://a2ii.org/sites/default/files/2021-02/11cf_session_2_jakub_nugraha_highlight_of_agriculture_insurance_in_indonesia.pdf

low rate of farmer participation and the COVID-19 pandemic, the initiative was discontinued.

- ✓ After that, in 2022, with funding from the German Insuresilience Solutions Fund (ISF), they began providing index insurance for rice and corn, using rainfall indices as indicators. The target areas are Gowa, Jeneponto, Bantaeng, Bone, Takalar, Karawang, and Indramayu.
- ✓ PT Mandiri AXA General Insurance is the main body of the project, and it is being implemented while utilizing the knowledge of other AXA Group companies, with PT Jiva Agriculture (Jiva), a group company of the global food industry company Olam, and the NPO Yayasan Agri Sustineri Indonesia (YASI) as distribution partners.
- ✓ The insurance premium is between 50,000 and 100,000 IDR, and the project provides a 60% subsidy. However, the need for insurance among farmers has not been widely accepted, and although a campaign was conducted targeting over 1 million people, only 600 households joined.
- ✓ The insurance payout is designed to be paid within 10 days.
- ✓ This project was planned to start in 2019, and at first it was planned to partner with a local bank that provides loans to farmers, but in the end, participation in this project was not pursued due to the fact that agricultural loans are considered to be very risky for financial institutions, and there was no capital or interest from financial institutions.

3) PT Asuransi Bintang Tbk.

- ✓ Developed a soil moisture index insurance based on a soil moisture evaluation model, and has been providing it to cocoa farmers in South Sulawesi since 2022 as part of the “Promoting Cocoa Agriculture and Forestry for Income, Value, and Environmental Sustainability (ACTIVE)”³⁶ partnership project between the US Agency for International Development (USAID) and Mars, the chocolate manufacturer.
- ✓ ACTIVE aims to contribute to climate change mitigation and adaptation, as well as increasing cocoa yields. Over the four-year project period, it aims to reduce carbon dioxide emissions by approximately 650,000 tons, train 9,000 small-scale farmers, increase cocoa yields by 15%, and increase farmers' incomes by 15%.
- ✓ USAID is providing subsidies for insurance to 1,066 cacao farmers in South Sulawesi, and it is hoped that the need for insurance will become more widely known and that farmers will be able to join the scheme without subsidies in the future.
- ✓ In addition to USAID and Mars, this program is also working in partnership with the Indonesian General Insurance Association (AAUI), for example by sharing information on activities.
- ✓ The basic insurance amount and premium rate are predetermined, and the conditions for insurance payments are set for the rainy and dry seasons respectively.
- ✓ When a loss occurs, an index-based system that uses satellite data is used to automatically process everything from the determination of whether or not to pay out to the payment procedure.

4) PT Zurich General Takaful Indonesia

- ✓ Since 2022, the company has been offering a “Sharia Weather Index Insurance” product as a pilot project.
- ✓ This insurance product was launched in collaboration with coffee maker Nespresso and the

³⁶ USIAD, INDO-PACIFIC STRATEGY (IPS) NATURAL RESOURCES SAFEGUARDS AND SECURITY (NRSS) FY 2022 Annual Report

Fairtrade Network Asia & Pacific Producers (Fairtrade NAPP) and is targeted at more than 1,500 coffee farmers in Aceh, Indonesia's largest coffee-producing region³⁷.

- ✓ Insurance is paid out in the event of damage caused by climate factors, and coffee farmers are vulnerable to damage caused by drought and excessive rainfall.
- ✓ Initially, the insurance amount was calculated to be 9,000,000 IDR per hectare based on production costs, and the insurance premium was set at 900,000 IDR. However, it was found that the insurance premium that farmers wanted was considerably lower, so the premium was adjusted to 300,000 rupiah and the insurance amount was reduced to 3 million rupiah. This amount does not completely cover production costs, but it is almost the same as the amount that farmers can realistically pay, so it is easy for farmers to use and accept.
- ✓ However, support for funding and other matters is provided by Nespresso, and the insurance premiums are also covered by Nestlé, so there is no burden on the farmers.
- ✓ Insurance payments are made by Blue Marble, an insurtech company established in 2017 and well versed in the design of weather index insurance, which monitors publicly available satellite-based rainfall estimation datasets, etc.
- ✓ Insurance payments were made to over 200 farmers following heavy rainfall in October-December 2022.
- ✓ The impetus for this product came from Nespresso and Blue Marble's work in Colombia (covering 39,000 hectares and providing insurance to around 12,000 farmers), which led to the introduction of the product in Indonesia. In Aceh Province, only insurance companies that comply with Sharia law are allowed to operate, so the only company with a license to operate in the area is PT Zurich General Takaful Indonesia.
- ✓ In addition to Aceh, the program is now being expanded to include coffee farmers in Tanggamus, Lampung, and cocoa farmers in Kolaka, Southeast Sulawesi. As of 2023, the program covered 4,655 farmers, and it is expected to cover 7,000 farmers by the end of 2024.

The initiatives described above involve not only private insurance companies, but also agricultural input suppliers, insurtech companies that provide agricultural insurance-related services, and agri-tech companies offering agricultural services. The following is a summary of the initiatives by private companies, excluding insurance companies, and their involvement in the agricultural insurance business.

Table 3.5.1 Other Private Initiatives in Agricultural Insurance in Indonesia

| Entity | Category | Activity in Agricultural Insurance in Indonesia |
|-------------|----------------------------------|---|
| AAUI | Insurance Companies' Association | An association of general insurance companies in Indonesia, comprising 72 insurance companies, including JASINDO, as well as 8 reinsurance companies. In the field of agricultural insurance, member companies aim to support farmers and enhance productivity by building an ecosystem that involves multiple stakeholders, including farmers, input suppliers, and off-takers, with agricultural insurance integrated as one component of this ecosystem. There are plans to introduce AYII (Area Yield Index Insurance) using the Insurance Resilience Fund (ISF) as a financial source. A pilot project targeting 10,000 farmers over two years is scheduled. The association is keen to participate in state-run agricultural insurance programs such as AOTP and is open to a co-insurance framework among member companies. |
| Blue Marble | Insurance company | An insurtech company specializing in insurance design, originally established in 2017 as an innovative unit of Zurich. Primarily focused on weather index-based insurance, the company provides services for |

³⁷ Zurich HP, <https://www.zurich.co.id/en/kegiatan-kami/berita-zurich/2022/pertama-di-indonesia-zurich-syariah-luncurkan-asuransi-perlindungan-cuaca-khusus-untuk-petani-kopi>

Data Collection Survey on Promotion for Introduction of Agricultural Insurance in Indonesia

| Entity | Category | Activity in Agricultural Insurance in Indonesia |
|----------|--------------|--|
| | | designing parametric insurance products, implementing projects, and monitoring their performance. In Indonesia, it is currently implementing a GIZ-supported project in Sulawesi. Additionally, the company is in discussions with JASINDO to develop index-based insurance for cocoa and coffee. Given Indonesia's vast archipelagic geography, index-based insurance using rainfall indicators is considered more cost-effective and practical than traditional indemnity-based models. |
| JIVA | Tech company | JIVA is a tech company under the Singapore-based Olam Group. In Indonesia, it primarily focuses on maize procurement, providing agricultural extension services, and selling farm inputs. In collaboration with AXA, JIVA has introduced a parametric insurance scheme based on rainfall parameters, targeting 300–500 farmers in South Sulawesi. In the future, agricultural insurance could be integrated into JIVA Agro, a retail-focused app for agricultural input sales, allowing farmers to register for coverage through the platform. Currently, this initiative is at the pilot stage, and farmers are not bearing the insurance premium costs. Moving forward, the company aims to assess the extent to which farmers can afford to contribute to the premium. |
| Koltiva | Tech company | Koltiva develops and provides services leveraging advanced communication technology across three key sectors: finance, agriculture, and climate. In the agricultural sector, it offers farm management support services, traceability solutions, and deforestation prevention measures based on geolocation data of farmers and farmland. It focuses on developing and implementing climate-adaptive agricultural solutions, conducting GHG assessments, providing land use mapping, and designing risk alert systems. It integrates digital technology into financial services to enhance accessibility and efficiency. In collaboration with Zurich and financial institutions, the company aims to expand agricultural insurance by utilizing Koltiva's expertise in digital platforms to facilitate premium collection and claim payments. |
| Syngenta | Seed company | Syngenta holds a significant market share in the production of seeds and pesticides. While Syngenta has undertaken various initiatives to support farmers, it has not yet ventured into agricultural insurance. It has only recently begun discussions with ACA Insurance. Syngenta's activities focus on connecting farmers with banks and providing them with agricultural inputs. The company has established seven centers across Indonesia to offer technical support for various crops, including rice, maize, and vegetables. Additionally, Syngenta conducts technical training for farmers, organizes field days, and offers courses on the proper use of pesticides. These efforts involve local agricultural offices and extension workers to ensure broader reach and engagement. |

Source: Interviews with each entities

The initiatives in agricultural insurance by the private sector can be summarized into three main features: (1) initiatives focused on index-based agricultural insurance, (2) initiatives targeting export crops, and (3) the creation of a business environment involving a diverse range of actors.

(1) Initiatives focused on index-based agricultural insurance

Many of the agricultural insurance products being developed by private insurance companies are index-based. This is because, with actual loss compensation-type insurance like AUTP, damage assessments must be conducted on the insured farmer's fields. However, it is difficult for private insurance companies, especially those with limited service development in rural areas, to establish such a business structure. Therefore, initiatives focused on index-based insurance, which does not require on-site damage assessment, are being developed. Notably, there are initiatives such as weather index insurance, which uses satellite rainfall data, and soil moisture index insurance, which utilizes satellite data on soil moisture.

On the other hand, the Indonesian government's agricultural insurance program, AUTP, is indemnity based insurance. Although a pilot project for yield index insurance was conducted with support from JICA, government agencies like JASINDO have limited experience using satellite data for index-based insurance. It is hoped that sharing examples from private companies and exploring potential collaboration will contribute to the development of the agricultural insurance sector.

(2) Initiatives targeting export crops

Many agricultural insurance products in the private sector cover export crops, such as coffee and cocoa. This is partly due to the fact that the government's AOTP provides an 80% subsidy for rice farmers. For rice, an essential crop for food security, insurance is covered by the AOTP program. However, for coffee and cocoa, important strategic export crops, insurance is primarily offered by private companies.

Although most private sector initiatives are still in the pilot stage, it is hoped that the government will become involved in these initiatives to help expand them. This could include risk-sharing through state-owned companies like JASINDO or promoting agricultural insurance through government extension workers to raise awareness among farmers.

(3) Creating a business environment that involves a diverse range of actors

While the AOTP program is promoted solely, many private sector initiatives are promoted through partnerships with various agricultural service providers. This is because agricultural insurance is seen as part of a broader effort to increase farmers' production and income. This approach could serve as a useful reference for the government's agricultural insurance program when developing a variety of agricultural insurance services in the future.

For example, the current AOTP is sold through agricultural extension workers. However, by collaborating with private companies, such as agricultural input dealers and financial service providers, the marketing and sales channels can be expanded. Additionally, partnerships with various actors in the agricultural sector can help shorten the insurance claim process and improve the transparency of damage assessments, issues that are currently challenges for the AOTP. Encouraging exchanges of opinions and the sharing of experiences between private and public sector stakeholders is an initiative that would benefit both sides.

3.6 Case Studies of Agricultural Insurance and Comparison with Indonesia

In Southeast Asian countries, both indemnity-based and index-based agricultural insurance programs have been implemented, primarily targeting rice, as their staple food. Among these, Thailand and the Philippines have a long history of agricultural insurance, with indemnity-based insurance for rice than in Indonesia. This section provides an overview of agricultural insurance programs in Thailand and the Philippines and compares them with Indonesia.

3.6.1 Agricultural Insurance in Thailand

(1) History and Overview of Agricultural Insurance in Thailand

Thailand is one of the world's leading rice exporters. The origins of agricultural insurance in Thailand date back to 1978 when insurance was introduced for cotton to protect against natural disasters such as floods and droughts. Over time, the scope of coverage expanded to include rice, maize, sorghum, soybeans, and other crops. In response to increasing climate-related risks, the Thai National Crop Insurance Scheme (TNCIS) was started in 2011. As of 2024, crop insurance under this program is available for key staple crops, which are rice and maize.

(2) Implementation Framework of Agricultural Insurance

The operational structure of TNCIS is illustrated in Figure 3.6.1. The TNCIS operates under a public-private partnership (PPP) model led by the Ministry of Agriculture and Cooperatives (MOAC), with following stakeholders mainly; 1) Thai General Insurance Association (TGIA), a consortium of private insurance companies which underwrite the policies using a pooled risk-sharing system; 2) Bank for Agriculture and Agricultural Cooperatives (BAAC), a state-owned agricultural bank which facilitates insurance enrollment, collects premiums, and disburses insurance payouts; 3) Department of Agricultural Extension (DOAE) which assists farmers with enrollment and provides support for loss

assessment at the field level. As for reinsurance, TGIA retains 20% of the risk, while the remaining 80% is transferred to external reinsurers.

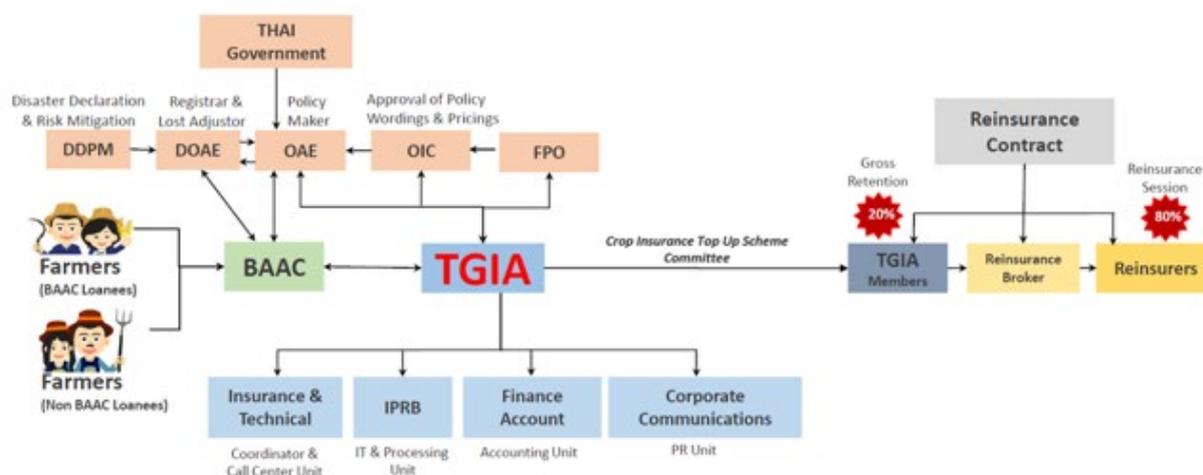


Figure 3.6.1 Implementing Structure of National Crop Insurance Scheme

Source: TGIA

One key feature of Thailand’s national crop insurance program is its alignment with the Disaster Relief Fund (DRF), a government disaster compensation program. When a natural disaster occurs and the government declares an affected area, farmers in those regions receive disaster relief payments through the DRF. Farmers holding crop insurance policy (Tier 1 and Tier 2) can receive top-up payouts on the DRF compensation, based on individual damage assessments conducted by DOAE.

(3) Design of the National Crop Insurance Program in Thailand

TNCIS provides indemnity-based crop insurance for rice and maize with aim to compensate farmers for a portion of their production costs in case of insured events. The program covers seven types of natural disasters (drought, flood/heavy rain, frost, storm/typhoon, fire, hail, and crop damage by wild elephants) as well as pests and diseases.

The compensation structure for rice as of 2024 is summarized in Table 3.6.1. The estimated production cost for rice is THB 3,985 per rai³⁸ (THB 24,906 per hectare). Based on this, the DRF from the government is set at THB 1,340 per rai (THB 8,375 per hectare).

The crop insurance component consists of two tiers, Tier 1 and Tier 2.

- Tier 1: Farmers receiving loans from BAAC (Bank for Agriculture and Agricultural Cooperatives) are automatically enrolled, while other farmers can voluntarily enroll.
- Tier 2: An optional insurance layer introduced in 2019 for farmers who want additional coverage.

For insured natural disasters, the total sum insured (Tier 1 + Tier 2) is THB 1,430 per rai (THB 8,938 per hectare). When combined with DRF, the total compensation reaches THB 2,820 per rai (THB 17,625 per hectare).

Similar to Indonesia, the Thai government subsidizes premiums for Tier 1, covering 60% of the premium for everyone. For farmers who are loanee of BAAC, BAAC provides an additional 40% subsidy, making Tier 1 insurance free for these farmers. Tier 2 is optional and there is no subsidy for the premium.

³⁸ 1 rai is 0.16 hectare.

Table 3.6.1 Structure of the Crop Insurance and Disaster Relief Fund

| Item | Sum insured (THB/rai) | | Remark |
|-----------------------|------------------------|--------------------|---|
| | Natural Disaster Cover | Pest/Disease Cover | |
| Disaster Relief Fund | 1,390 | - | Disaster compensation payments provided to farmers the areas where the government declared disaster. |
| Crop Insurance Tier 1 | 1,190 | 595 | BAAC loanee farmers are compulsory. 60% of the premium is subsidized by the government. BAAC loanee farmers are eligible for additional 40% subsidized from BAAC. |
| Crop Insurance Tier 2 | 240 | 120 | Optional coverage. No subsidy for the premium. |
| Total | 2,820 | 715 | |

Source: Office of Agricultural Economics

The premium rates for Tier 1 and Tier 2 are determined based on three risk levels that account for past disaster history. Additionally, the rates vary depending on whether farmers receive loans from BAAC.

In 2024, a new incentive system was introduced: farmers not receiving BAAC loans in low-risk areas can now join Tier 1 for only THB 5.

(4) Performance of the National Crop Insurance Program

The insurance penetration rate is measured as the ratio of insured area to total cultivated area (see Figure 3.6.3). Before 2015, the penetration rate was below 5%. In 2016, when crop insurance was linked to BAAC’s loan program, the penetration significantly increased, until the penetration rate reached 67% in 2020.

In 2022, insured area declined, mainly due to the removal of a 40% premium subsidy for voluntary participants in low-risk areas. In 2022, Tier 1 insurance payouts were reduced from THB 1,260/rai to THB 1,190/rai. The loss ratio (Figure 3.6.4) was initially very high at the start of the program but has stabilized around 70% in 2022 due to adjustments in premium rates, payouts, and subsidies.

| Tier | Section | Sum Insured (THB/Rai) | Premium (THB/Rai) | Premium Rate | Gross Premium (THB) |
|-------|--|-----------------------|-------------------|--------------|---------------------|
| 1 | BAAC Compulsory | 1,190 | 115 | 9.66% | 1,725,000,000 |
| | Voluntary and Non BAAC Low (incentive) | 1,190 | 70 | 5.88% | 350,000,000 |
| | Voluntary and Non BAAC Medium | 1,190 | 199 | 16.72% | 9,950,000 |
| | Voluntary and Non BAAC High | 1,190 | 218 | 18.32% | 98,100,000 |
| | Voluntary and Non BAAC Subtotal | | | | 458,050,000 |
| 2 | Tier 2 Low | 240 | 27 | 11.25% | 270,000 |
| | Tier 2 Medium | 240 | 60 | 25.00% | 3,000,000 |
| | Tier 2 High | 240 | 110 | 45.83% | 48,400,000 |
| | Tier 2 Subtotal | | | | 51,670,000 |
| Total | | | | | 2,234,720,000 |

Figure 3.6.2 Premium Rates in Thai National Crop Insurance

Source: Aon, Thailand National Crop Insurance Programme UY2024 Information Pack

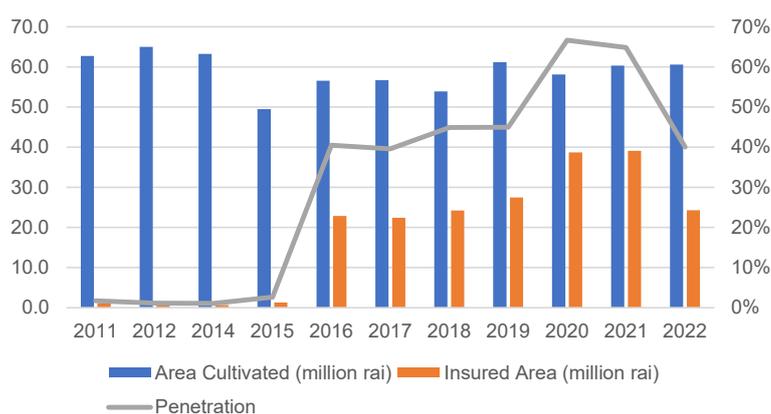


Figure 3.6.3 Result of Thai National Crop Insurance Scheme

Source: JICA Survey Team based on Aon, Securing Rice Insurance for Farmers in Thailand

(5) Challenges of the National Crop Insurance Program

Key strengths are as follows:

- Annual Adjustments: Premium rates, payouts, and subsidies are flexibly adjusted each year,



Figure 3.6.4 Trend of Loss Ratio of Thai National Crop Insurance Scheme

Source: Aon, Securing Rice Insurance for Farmers in Thailand UY2024 Information Pack

contributing to program stability.

- Efficient Claims Process: The program links insurance payouts to government disaster relief, reducing the need for individual damage assessments.

Key challenges are as follows:

- Complex Administration: The program involves multiple organizations, making processes complex and slow. TGIA (Thai General Insurance Association) is working on simplifying the scheme.
- Limited Growth in Voluntary Enrollment: Farmers with BAAC loans are automatically enrolled, ensuring stable participation. However, voluntary participation remains unstable, requiring better farmer awareness of insurance benefits.
- Limited Crop Coverage: Currently, the program only covers rice and maize. There is growing interest in expanding coverage to cassava, sugarcane, potatoes, palm oil, and rubber, which are also key agricultural products in Thailand.

3.6.2 Agricultural Insurance in the Philippines

(1) History and Overview of Agricultural Insurance in the Philippines

The Philippines is one of the most disaster-prone countries in the world. According to the World Risk Index, which quantifies natural disaster risks, the country has ranked first for 16 consecutive years³⁹. Additionally, the Philippines is highly vulnerable to the impacts of climate change, which has already adversely affected the agricultural sector. The share of agriculture in the country's GDP has declined from 25% in 1980 to 9% in 2019. Moreover, the poverty rate among agricultural workers is approximately three times higher than that of urban residents⁴⁰.

The Philippines has a long history of public agricultural insurance. In 1978, Presidential Decree No. 1467 established the Philippine Crop Insurance Corporation (PCIC) as a state-owned corporation, attached to the Department of Agriculture. The PCIC began implementing crop insurance in 1981, initially covering rice. Since then, the PCIC has remained the sole entity responsible for crop insurance implementation in the country. In 1982, insurance coverage was extended to maize, followed by

³⁹ The World Risk Report, <https://weltrisikobericht.de/worldriskreport/>

⁴⁰ MicroInsurance Centre at Milliman, Making Climate Risk Micro insurance work, https://microinsurancecentre.milliman.com/en/insight/-/media/Milliman/PDFs/2021-Articles/12-16-21-CaseStudy_PCIC.ashx

livestock in 1988. By 1991, high-value crops, including vegetables such as avocado and cabbage, fruits such as melon and lemon, as well as nuts and cocoa, were also included. In 2005, PCIC introduced credit and term life insurance for farmers, and in 2011, it expanded its offerings to include fisheries insurance.

(2) Implementation System of the Philippine National Crop Insurance

As mentioned above, the Philippines' national agricultural insurance is implemented by PCIC, which plays comprehensive role in underwriting, policy issuance, and loss assessment, under overseen by the Department of Agriculture. In addition to PCIC branch offices, Land Bank of the Philippines, local government units, and microfinance institutions support PCIC in policy distribution. Notably, no reinsurance arrangements are in place.

(3) Design of the Philippine National Crop Insurance

PCIC provides indemnity-based crop insurance for rice, corn, and high-value crops. For rice and corn, multiple-risk and natural disaster coverage options are available.

The sum insured is determined based on the necessary production inputs specified in the Farm Plan and Budget (FPB) submitted by farmers at the time of application, within the predefined ceiling amount. Additionally, farmers can opt to increase their insured amount by up to 20% of the FPB to cover a portion of expected yield. The ceiling of the sum insured varies depending on several conditions, including whether the farmer has obtained financing from designated financial institutions, whether the crop is an open-pollinated or hybrid variety, and whether the farmer is a general producer or a seed producer. Farmers receiving loans from designated financial institutions are eligible for a higher maximum sum insured compared to those who are not.

Previously, the premium rates varied based on region and risk classification. However, as of 2024, a uniform rate of 10% of the insured amount is applied. For example, for a general production of inbred rice variety, the maximum sum insured for a borrowing farmer is PHP 67,000 (approximately JPY 179,000) per hectare, with a corresponding premium of PHP 6,700 (approximately JPY 17,900).

Regarding the government subsidies for insurance premiums, farmers registered in the Registry System for Basic Sectors in Agriculture (RSBSA) are eligible for full government subsidies. RSBSA is a government database established in 2012 that identifies and registers farmers, fisherfolk, and farm laborers. It serves as the basis for government programs and interventions in the agriculture sector, ensuring that support such as subsidies, insurance, and financial assistance reaches the intended beneficiaries. It contains personal information, agricultural activities, and land ownership details. Initially, 9.67 million individuals were registered, increasing to 10.9 million by 2020. In addition to RSBSA, the government allocates a certain budget for crop insurance subsidies. After distributing subsidies to registered farmers and fishers, the government provides a 55% premium subsidy to non-RSBSA-registered farmers who have obtained financing.

Loss assessments shall be conducted by two PCIC authorized insurance adjusters. However, if manpower is insufficient, assessments may be conducted by a single assessor.

Table 3.6.2 General Information of Rice and Corn Crop Insurance in the Philippines

| Item | Rice Crop Insurance | Corn Crop Insurance |
|---------------------------|--|---|
| Multi-Risk Cover Coverage | <ul style="list-style-type: none"> • Natural disaster (typhoon, flood, drought, earthquake, volcanic eruption, tornado, and hails/hailstorm) • Plant diseases (tungro, rice blast/neck rot, grassy stunt, bacterial leaf blight, and sheath blight) • Major pests (rats, locusts, army worms/cut worms, stem borers, rice bug/rice grain bugs, black bugs and brown plant hoppers/hopper burns) | <ul style="list-style-type: none"> • Natural disaster (typhoon, flood, drought, earthquake, volcanic eruption, tornado, and hails/hailstorm) • Plant diseases (bacterial stalk rot, banded leaf, downy mildew, and sheath blight) • Major pests (rats, locusts, armyworms/cutworms, corn borers, corn earworm, corn plant hopper, and fall armyworm) |

| Item | Rice Crop Insurance | Corn Crop Insurance | | |
|------------------------|--|--|--|--|
| Natural Disaster Cover | Natural disasters | | | |
| Sum Insured (PHP/ha) | Cost of production inputs per Farm Plan and Budget (FPB). The farmer can also choose to have an additional amount of cover of up to 20% of the FPB to cover portion of the value of the expected yield, but this should not exceed the following cover ceilings per hectare | | | |
| | [Self-Financed farmer] Inbred: PHP41,000 Hybrid: PHP50,000 | [Borrowing farmer] Inbred: PHP67,000 Hybrid: PHP78,000 | [Self-Financed farmer] Inbred: PHP34,000 Hybrid: PHP50,000 | [Borrowing farmer] Inbred: PHP57,000 Hybrid: PHP61,000 |
| | Seed production: Inbred is PHP 50,000 and Hybrid is PHP 120,000 | | Seed production: Inbred is PHP 68,000 and Hybrid is PHP 76,000 | |
| Premium Rate | 10 % of sum insured (RSBSA farmers are eligible for 100 % subsidy up to 3 ha) | | | |
| Loss Adjustment | The actual amount of damages will be compensated based on the loss assessment by PCIC authorized insurance adjusters. The following factors are taken into consideration when assessing the amount of damage: The stage of growth of the crop at the time of damage, and Percentage of yield lost (total loss: 90% or more, half loss: 10% to less than 90%, no loss: less than 10%) Claims adjustment and verification shall be conducted by two (2) PCIC authorized insurance adjusters. If there is, however, an insufficient number of adjusters, one insurance adjuster may validly conduct the claims adjustment and verification. | | | |
| Other | No-claim Benefit: The assured is entitled to a no-claim benefit of 10% of his/her aggregated net premiums paid during the immediately preceding three (3) insured crop seasons if he/she has not filed any claim for the said crop seasons. Death Benefit: This is a built-in benefit regardless of the amount of cover. This is equivalent to PhP10,000 per assured farmer who died within the term of coverage, provided, he/she is not more than eighty (80) years old at the inception of the insurance. | | | |

Source: PCIC Rice Crop Insurance General Information (April 2024), Corn Crop Insurance General Information(April 2024)

(4) Recent Performance

Since 2013, when full subsidies for certain farmers were introduced, the number of insured farmers has significantly increased for both rice and corn. In 2023, 1.43 million rice farmers and 500,000 corn farmers were insured. Currently, agriculture accounts for approximately one-third of the total workforce, and one-third of these agricultural workers are enrolled in PCIC’s crop insurance. However, as indicated in Figure 3.6.5, there has been no increase in insurance participation among non-RSBSA-registered farmers.

Loss ratios are shown in Figure 3.6.6. In 2021, the loss ratio reached 79%, and PCIC reported a combined ratio exceeding 100%, resulting in a financial deficit (2023 Annual Report). When examining loss ratios by product, rice insurance (78%) and maize insurance (68%) experienced high losses, whereas livestock insurance (19%), high-value crop insurance (23%), and fisheries insurance (31%) reported significantly lower claims.

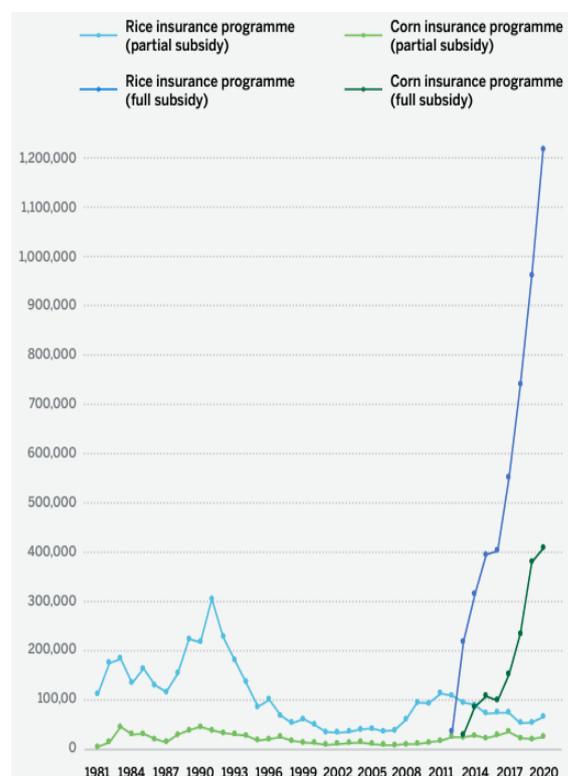


Figure 3.6.5 Trend of Number of Insured Farmers with Rice and Corn Crop Insurance by PCIC

Source: World Bank “Reforming Agricultural Insurance in the Philippines”

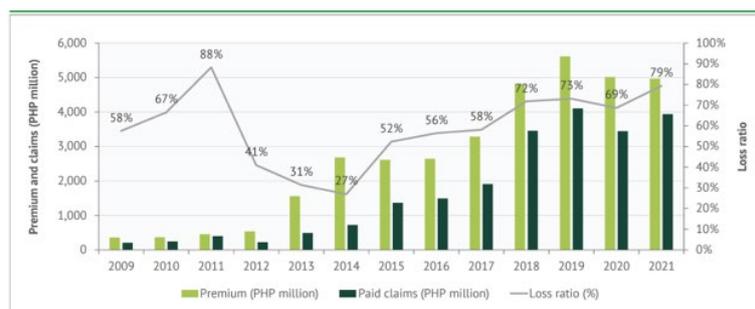


Figure 3.6.6 Trend of Loss Ratio of Rice and Corn Crop Insurance by PCIC

Source: World Bank "Reforming Agricultural Insurance in the Philippines"

(5) Recent Initiatives

PCIC has long provided indemnity-based crop insurance. However, in collaboration with research institutions and donor organizations, PCIC has been piloting new insurance models, such as yield and weather index-based insurance. Currently, PCIC is working with the International Rice Research Institute (IRRI) and the Philippine Rice Research Institute (PhilRice) to pilot an Area-Based Yield Index Insurance (ARBY).

Unlike Indonesia's AYII, ARBY sets a Benchmark Yield based on historical average yields for specific regions, such as villages or municipalities. If the actual average yield in the area falls below the Benchmark Yield, insurance payouts are triggered. According to PCIC officials, a trial implementation of ARBY will begin in selected areas using a group enrollment approach by the end of 2024.

This initiative utilizes remote sensing technologies, including the Philippine Rice Information System (PRISM), developed by the Philippine Department of Agriculture in collaboration with the Consultative Group for International Agricultural Research (CGIAR). The full-scale integration of ARBY into the national crop insurance program is anticipated in the future.

(6) Key Challenges

The PCIC agricultural insurance program is among the most heavily government-subsidized programs globally. Since the introduction of full premium subsidies in 2013, government subsidies have accounted for 95.6% of total premiums in 2021. However, due to budget constraints, PCIC has set coverage limits, resulting in insufficient compensation. For example, payouts for farmers enrolled in the RSBSA rice and maize programs cover only about 30% of the average production cost per hectare for rice and 37% for yellow maize. This may leave farmers without adequate financial support to continue farming or repay loans after disasters.

Additionally, the indemnity-based system incurs high costs and administrative burdens for loss assessments. In 2020, PCIC had only 129 adjusters handling 4,744 claims. Delays in claim payments have also been reported, with cases remaining unpaid for over two years. Automation of procedures and expansion and training of loss adjusters are necessary improvements.

While enrollment has increased due to full subsidies for RSBSA-registered farmers, the coverage rate remains limited, reaching only 29% of the rice cultivation area and 19% of the corn cultivation area. Factors include coverage limits that restrict insured areas and the lack of participation among non-subsidized farmers. Enhancing insurance design and improving insurance literacy are necessary to reduce reliance on subsidies.

PCIC's high loss ratio and financial deficits are major concerns. A revision of actuarial pricing methods is required. Additionally, PCIC aims to foster public-private partnerships, encouraging private sector involvement in the program. However, past trials failed due to low profitability and business

sustainability. Establishing effective public-private collaboration may require legislative amendments and subsidy policy reforms.

3.6.3 Comparison with Indonesia

(1) Legal Framework of Agricultural Insurance

Like Indonesia, Thailand and the Philippines implement agricultural insurance policies as a means to protect farmers from natural disasters and ensure food security. In the Philippines, the government established PCIC in 1978 through a presidential decree, and for nearly half a century, the government has led the agricultural insurance sector.

Table 3.6.3 Legal Framework of Agricultural Insurance

| Country | Policy/Law | Description |
|-------------|---|--|
| Indonesia | Farmer's Protection and Empowerment Act (Act No. 19/2013), under Food Law, 2012 | To adapt the climate change and support the development of agriculture sector, under the principles of food self-reliance and food sovereignty as the applied approach to food security. |
| Thailand | There is no specific legal framework for crop insurance but are following regulations to comply with it: 1. State Fiscal and Financial Disciplines Act, B.E. 2561 (2018) 2. the Bank for Agriculture and Agricultural Cooperatives Act, B.E. 2509 (1966) 3. Ministry of Finance Regulation on Government Reserve Funds for Emergency Disaster Relief B.E. 2562 | To mitigate the impact of natural disasters, improve the agricultural sector, sustain agricultural resources, and help Thai farmers escape the middle-income trap |
| Philippines | Presidential Decree 1467 (June 11, 1978), Republic Act 8175 in 1995 related laws. | To establish PCIC to provide crop insurance to farmers, particularly those engaged in rice and corn production. The decree aimed to mitigate agricultural risks, ensuring financial protection for farmers in case of losses due to natural calamities, pests, and diseases. It outlined the structure, funding, and operations of the PCIC, emphasizing government support for sustainable agricultural productivity. |

Source: JASINDO, PCIC, Office of Agricultural Economics

(2) Implementation Framework of Agricultural Insurance Programs

In the Philippines, similar to Indonesia, the state-owned insurance company (PCIC) is responsible for underwriting, distribution, and damage assessment. In Thailand, a Public-Private Partnership (PPP) model is adopted, where the designing and underwriting of insurance are handled by the TGIA, general insurance companies association, while insurance enrollment and claims processing are managed through the Bank for Agriculture and Agricultural Cooperatives (BAAC), and loss assessments and extension support are overseen by the Ministry of Agriculture and Cooperatives (MOAC). This creates a more complex system compared to the more centralized model in Indonesia and the Philippines.

The establishment of a state owned insurance company, as seen in Indonesia and the Philippines, offers a consistent initiative, particularly effective during the early stages of implementing agricultural insurance. However, the PPP model, as in Thailand, helps mitigate government financial risks while leveraging private sector expertise and capital.

In terms of regulatory bodies, like Indonesia, the Ministry of Finance has historically overseen agricultural insurance in all three countries. However, in recent years, the authority has shifted to the Ministry of Agriculture in both Thailand and the Philippines.

Table 3.6.4 Comparison of Implementation Structure of National Agricultural Insurance Program

| Role | Indonesia | Thailand | Philippines |
|---------------|-------------------------------|--|---------------------------------------|
| Insurer | State-owned Company (JASINDO) | Private insurance companies' association (TGIA) | State-owned Company (PCIC) |
| Distributor | State-owned Company (JASINDO) | State-owned bank (BAAC), Department of Agricultural Extension (DOAE) | State-owned Company (PCIC) Land Bank, |
| Loss Adjuster | State-owned Company (JASINDO) | Department of Agricultural Extension (DOAE) | State-owned Company (PCIC) |
| Supervision | Ministry of Finance | Ministry of Finance/ Ministry of Agriculture and Agricultural Cooperatives | Department of Agriculture |

Source: JASINDO, PCIC, Office of Agricultural Economics

(3) Insurance Product Details

Table 3.6.5 outlines the insurance product details for public agricultural insurance programs targeting rice in each country. All the products adopt an indemnity-based compensation model, designed to cover production costs in the event of damage.

- i. **Covered Risks:** In Indonesia, the coverage includes natural disasters such as floods and droughts, as well as pests and diseases. Thailand and the Philippines also cover natural disasters and pests, though a wider range of disasters and pests are included in their programs compared to Indonesia.
- ii. **Insurance Amounts:** When converting to USD, Indonesia offers a uniform insurance coverage of USD 369 per hectare, whereas Thailand and the Philippines have more varied amounts, with periodic reviews. In Thailand, the coverage for natural disasters is USD 250 per hectare under the Disaster Risk Fund (DRF), and there are two additional tiers: Tier 1 at USD 214/ha and Tier 2 at USD 43/ha, totaling USD 507/ha. For losses caused by pests and diseases, the sum insured of Tier 1 and Tier 2 is 50% of the natural disaster compensation amounts, reflecting the risk-based approach to insurance amounts. In the Philippines, the insurance coverage cap is determined by factors such as whether the farmer has received a loan and whether the crops are inbred or hybrid varieties. For example, in the case of hybrid varieties, with the government loan, the ceiling of the sum insured is USD 1,392 per hectare.
- iii. **Premium Rates:** In Indonesia, a uniform premium rate of 3.1% is applied nationwide, which is lower compared to Thailand and the Philippines, where the premium rates are approximately 10%, with adjustments depending on risk classifications and loan from BAAC in Thailand. These rates are subject to periodic revisions in the two countries.
- iv. **Government Subsidies for Premiums:** Indonesia applies a uniform subsidy rate. In the Philippines, farmers registered in the Registry System for Basic Sector in Agriculture (RSBSA) receive a 100% subsidy. In Thailand, subsidies vary based on whether farmers have loans from BAAC, with no subsidies available for those opting into Tier 2 or not receiving BAAC loans.
- v. **Farmer's Share of Premiums:** Due to Indonesia's lower sum insured and premium rates, AUTP in Indonesia offers relatively low insurance premium compared to those in Thailand and the Philippines. Additionally, the central government subsidies for AUTP reduce the farmer's pay to USD 2.4 per hectare, and there are many local government subsidize the rest 20%, making it free insurance for the farmers. In the Philippines and Thailand, the premium shall be fully subsidized under a certain condition. In the Philippines, farmers registered in the RSBSA can receive the full subsidy, while in Thailand, BAAC loanee farmers pay no premium for Tier 1. Farmers without BAAC loans in low-risk areas will pay a total premium of USD 17 per hectare for Tier 1 and Tier 2 coverage.

Table 3.6.5 Comparison of National Rice Crop Insurances

| Item | Indonesia | Thailand | Philippines |
|--|---|---|---|
| Target of Insurance | Compensation to production cost | Compensation to production cost | Compensation to production cost |
| Coverage | Flood, Drought, Plant Pest Organisms | Natural disasters (Drought, flood or excessive rain, frost, windstorm/ typhoon, fire, hail, wild elephant), and damage by pests and diseases | Natural disasters (typhoons, flood, drought, earthquake, volcanic eruptions), and plant infestations and diseases. |
| Sum Insured (LCU/ha) | IDR 6,000,000 | Disaster Relief Fund (DRF) to compensate all the farmers in the disaster areas upon the government's declaration. Tier 1 and Tier 2 are additional top up compensation to the Disaster Relief Fund (DRF) DRF +Tier1 = THB 16,125/ha DRF +Tier1 +Tier 2 = THB 17,625/ha DRF: THB 1,390/rai (USD 250/ha) Tier 1: THB 1,190/rai (USD 214/ha) Tier 2: THB 240/rai (USD 43/ha) *If the loss is caused by pest /diseases, the sum insured will be 50% in Tier 1 and 2. | Cost of production inputs per Farm Plan and Budget (FPB). The farmer can also choose to have an additional amount of cover of up to 20% of the FPB to cover portion of the value of the expected yield, but this should not exceed the following cover ceilings per hectare: [Self-Financed farmer] Inbred: PHP41,000 Hybrid: PHP50,000 [Borrowing farmer] Inbred: PHP67,000 Hybrid: PHP78,000 |
| in USD/ha (Converted with UN rate of January 2025) | USD 369/ha | DRF +Tier1 = USD 464/ha DRF +Tier1 +Tier 2 = USD 507/ha Tier 1: USD 214/ha Tier 2: USD 43/ha DRF: USD 250/ha | [Self-Financed farmer] Inbred: USD 699/ha Hybrid: USD 852/ha [Borrowing farmer] Inbred: USD 1,142/ha Hybrid: USD 1,329/ha |
| Premium Rate | 3.1% | Tier 1: BAAC loanee farmers: 9.66%. For non-loanee farmers, Depends on the area and risk classification (5.88-18.32%) Tier 2: Depends on the area and risk classification (11.25% - 45.83%) | 10% |
| Government Premium Subsidy | 80% from the central government. Many provinces provide additional 20% with their own budget. | Tier 1: 60% from the central government. BAAC loanee farmers can receive additional 40% from BAAC. Tier 2: No subsidy | For RSBSA registered farmers, 100% subsidized by the government. |
| Subsidized premium (Net Payment by Farmer) | USD 0.0 - 2.4 | Depends on the area and loan condition. Below are example. For BAAC loanee farmer, USD 0/ha for Tier 1. For non-loanee farmer in low risk area, USD 17/ha to have Tier 1 and Tier 2. For loanee farmer in low risk area, USD 5/ha to have Tier 1 and Tier 2. | For RSBSA registered farmers: 0/ha For the borrower farmers, the maximum premium for the ceiling sum insured amount: USD 133/ha |

Source: JASINDO, PCIC, Office of Agricultural Economics

(4) Recent Performance

The progression of crop insurance penetration targeting rice is shown in Figure 3.6.7. Thailand and the Philippines have resulted in significantly higher penetration rates compared to Indonesia. This can be attributed to the combination of disaster compensation programs, financial programs, and government subsidies for premiums.

In the Philippines, the insurance penetration rate has grown steadily, surpassing 30% in 2022, except during the years impacted by the COVID-19 pandemic. In Thailand, insurance penetration reached 57% in 2020 due to the combination of national disaster relief programs and bank loans. However, in 2022, participation decreased as subsidies for rice in low-risk areas (Tier 1) were discontinued, leading to a decline in coverage.

Figure 3.6.8 shows the loss ratio for rice-related agricultural insurance. Indonesia's AOTP program has not experienced a claims ratio exceeding 100% since 2015, while the Philippines and Thailand have experienced total loss (100%) for some times. Notable events contributing to high claims ratios include Typhoon Mangkhut in the Philippines in 2018 and Tropical Storm Podul in Thailand in 2019, where large areas of insured rice fields were impacted.

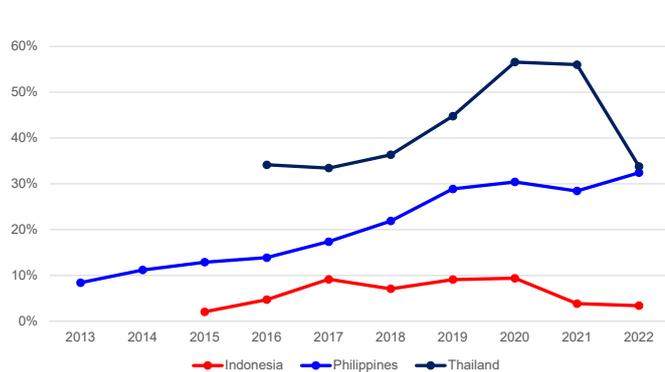


Figure 3.6.7 Trend of Penetration of National Rice Crop Insurance

Source: Jasindo, PCIC, BAAC

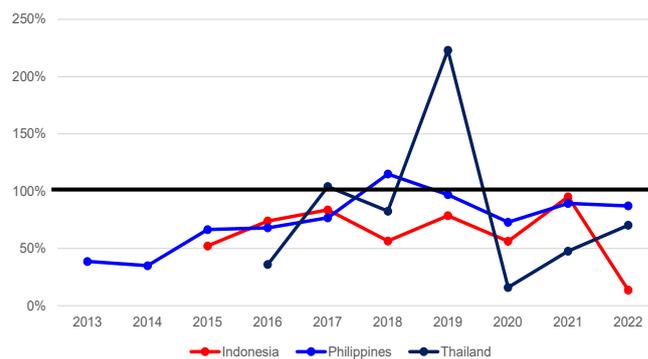


Figure 3.6.8 Trend of Loss Ratio of National Rice Crop Insurance

Source: Jasindo, PCIC, BAAC

3.6.4 Agricultural Insurance in India

(1) History and Overview of Agricultural Insurance in India

From 1979 to 1984, the Pilot Crop Insurance Scheme (PCIS) for farmers growing grains, oilseeds, cotton, and potatoes was introduced in 13 states. In this scheme, insurance was limited to farmers who received agricultural loans, and the decision to purchase insurance was left to the initiative of each individual farmer. In 1985, an index-based insurance scheme called the Comprehensive Crop insurance Scheme (CCIS) was introduced as an extension of the PCIS and continued until 1999. Under this scheme, insurance was mandatory for farmers who receive agricultural loans. The scheme had some major challenges: the amount of insurance was capped at 10,000 rupees, which was not enough to stabilize farmers' operations; the central and state governments subsidized the insurance premium rates, which were kept between 1-2% depending on the type of crop, but the loss ratio (1985-1999) was as high as 575%.

In 1999, the yield-indexed National Agricultural Insurance Scheme (NAIS) was introduced, following the experience of the CCIS. NAIS was also mandatory for farmers who receive loans from financial institutions, while other farmers are required to take out voluntary insurance. The government, through AIC (Agriculture Insurance Company of India), determines the insurance design and standard yields, and measures the actual yields.

The government subsidized 10% of the premium rate for smallholder farmers, and for cereals and some crops, if the loss ratio exceeded 100%, the excess was shared equally between the central and local governments. NAIS set the insurance amount above the loan amount (up to 150%), but the coverage rate was different depending on regions and crops, which was set uniformly for all insured, so the actual loss amount was sometimes not paid. It was also pointed out that crops with less than five years of yield

data were not insured, and that the government took time to measure yields, which delayed the payment of insurance claims.

In 2010, the Modified National Agriculture Insurance Scheme (MNAIS) was implemented as a modified version of NAIS. MNAIS made some improvements compared to NAIS, such as increasing the minimum payout amount, extending coverage from NAIS, which only covered government-measured yields, to include losses caused by disasters during the farming season and post-harvest period, making provisional payments before measuring yields, and redesigning premium rates according to losses. In addition, insurance underwriting was opened not only to AIC but also to private insurance companies. The private insurers are required to transfer 5% of their risks to General Insurance Corporation of India (GIC Re), a state-owned reinsurance company, and the rest is reinsured by the private insurers from the market. With the increase in premium rates, the government subsidies have been increased up to 75% for districts and crops with higher premium rates, and compensation has been provided in case if the national loss ratio exceeds 500%.

Another scheme that addresses the challenges of NAIS is the Weather Based Crop Insurance Scheme (WBCIS), a weather index insurance scheme that was introduced in 2007. The main feature of this scheme is flexible design for targeting cultivation period, crops, and risks to be compensated, depending on the location of weather stations. On the other hand, neither MNAIS nor WBCIS could overcome the shortcomings of lack of transparency, high premium rates, and delays in insurance payments to farmers due to delays in crop harvest measurement.

In 2016, the Modi administration launched an agricultural policy to make agriculture profitable, commercial and sustainable. The Pradhan Mantri Fasal Bima Yojana (=Prime Minister Crop Insurance Scheme = Prime Minister Crop Insurance Program, PMFBY) was introduced under this circumstance. Also in 2016, the WBCIS was revised as the Restructured Weather Based Crop Insurance Scheme (RWBCIS), with premium rates set equal to those of the PMFBY. Currently, the PMFBY and the RWBCIS are the main agricultural schemes in India.

(2) Implementation Framework of PMFBY/RWBCIS

The following diagram shows the implementation framework of PMFBY/RWBCIS. Both schemes became voluntary schemes for farmers in 2020⁴¹.

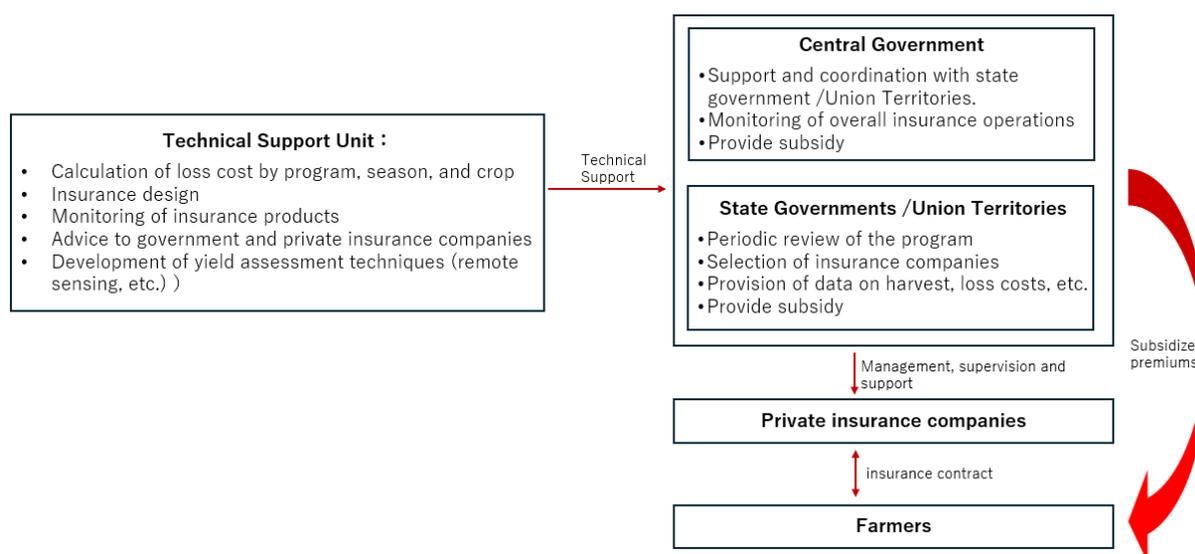


Figure 3.6.9 Implementation Framework of PMFBY/RWBCIS

Source: JICA Survey Team based on the guidelines of PMFBY/RWBCIS

⁴¹ PMFBY Guideline, <https://www.aicofindia.com/pmfbby-list> RWBCI Guideline, <https://www.aicofindia.com/rwbcis-list>

Private insurance companies selected by the state/federal government underwrite the farmers' insurance, while the central and state/federal governments contribute subsidies and formulate and monitor the programs. These government roles are supported by assistance from an organization called the Technical Assistance Unit. The maximum premiums to be paid by farmers were determined in advance in relation to the actual premiums (Actuarial Premium Rate = APR), and the difference between the maximum premiums and the APR is subsidized by the central government and the state/federal government. With the exception of the Northeastern Region, the ratio of central government to state/federal government was 50:50, and only in the Northeastern Region, the ratio was 90:10.

In 2020, the new system started that the central government is capped at 30% of the APR in irrigated areas and 25% in non-irrigated areas, and subsidies in excess of the cap come from the state/federal government. In addition, for insurance companies, if the ratio of premiums to insurance claims exceeds 1:3.5 or the ratio of claims to insurance value exceeds 35%, whichever is higher, the government will protect private insurance companies and the central government:state/federal government ratio will be 50:50 for any excess over losses.

(3) Insurance Product Details

The risks covered by PMFBY and RWBCIS are described as follows. These risks are mandatory risk coverage, while additional risk coverage might be considered by the state/federal government depending on the needs.

Table 3.6.6 Risks Covered by PMFBY/ RWBCIS

| Item | PMFBY | RWBCIS |
|-----------------------------|---|---|
| Basic Disaster | Non-preventable risks such as lightning, storms, cyclones, floods, inundation, landslides, hail, drought, dryness, pest infestation, etc. | Rainfall (insufficient, excessive, unseasonal, prolonged, dry) Temperature (high and low) Relative humidity Wind speed Combination of the above |
| Disasters that can be added | Losses due to lack of rainfall or other adverse seasonal or climatic conditions that prevent sowing, planting, or germination, etc. | Hailstorm, cloud storm, strong wind, etc. |

Source: PMFBY/ RWBCIS Guidelines

PMFBY is a yield-based index insurance that pays claims when actual yields fall below a standard yield, while RWBCIS is a weather-based index insurance that pays claims when actual yields deviate from a defined weather condition (parameter) threshold. Thus, PMFBY is arranged for crops for which adequate yield data are available, mainly food grains, oilseeds, and annual commercial/horticultural crops, while crops for which reliable yield data are difficult to obtain, especially perennial commercial/horticultural crops, are covered under RWBCIS⁴².

Table 3.6.7 Summary of PMFBY/ RWBCIS Schemes

| Item | PMFBY | RWBCIS |
|---------------------|--|-------------------------|
| type | Yield Index Insurance | Weather index insurance |
| Amount of insurance | Loan size or notional average value per hectare multiplied by the area under cultivation of the subject crop *The state/federal government will notify whether the unit price is the size of the loan or the assumed average value. *(Assumed average value is assumed average yield x minimum sales price/shipping price) | |
| Compensation Ratio | From 70, 80, 90% to be notified by the state/federal government. | - |
| insurance | Maximum premium rate paid by farmers | |

⁴² GOVERNMENT OF INDIA, <https://sansad.in/getFile/loksabhaquestions/annex/175/AU2344.pdf?source=pqals>

| Item | PMFBY | RWBCIS |
|--------------------------------|--|---|
| (premium) rate | Kharif grains and oilseeds: 2.0% or real rate, whichever is lower Rabi grains and oilseeds: 1.5% or real rate, whichever is lower First-year commercial/horticultural crops : 5% or the lower of the real rate Perennial commercial/horticultural crops: 5% or real rate, whichever is lower *Actual premium rate refers to the actuarially calculated premium rate (APR). *As per (3), if the actual rate exceeds the maximum farmer-paid rate, it will be subsidized by the central/state/federal government. | |
| Insurance proceeds amount paid | $\frac{\text{Base yield} - \text{accual yield}}{\text{Base yield}} \times \text{Insured amount}$ | Per unit insurance \times Number of units *The per-unit insurance benefit is calculated as follows: actual observed value x predetermined number x predetermined payout amount (up to the insurance amount). |

Source: PMFBY/ RWBCIS Guidelines

In addition, state governments are required to utilize satellite imagery, drones, Unmanned Aerial Vehicles (UAVs), remote sensing, and other technologies in yield estimation, loss assessment, and other related activities. In addition, insurance companies are required to work with state governments to utilize mobile applications such as smartphones in monitoring crop health and reporting data from crop cutting the results of CCE, etc. A collaborative framework has been developing for public and private companies to work together to promote technology in agricultural insurance.

(4) Recent Performance

Figure 3.6.10 shows the number of insured farmers under PMFBY/RWBCIS since 2016. The total PMFBY/RWBCIS premium for 2016-2024 is 229622.49 (Rs. Crore), of which the farmers bear 32270.06 (Rs. Crore), which is about 14% of the total premium⁴³. In addition, the loss ratio for 2016-2024 averaged 71%⁴⁴.

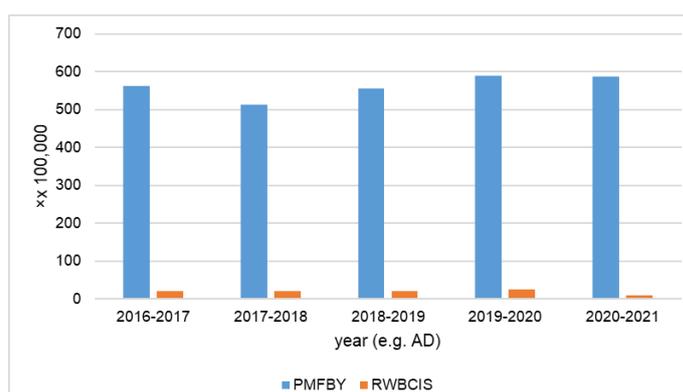


Figure 3.6.10 Number of Insured Farmers under PMFBY/WBCCIS

Source: GOI Statistics

(5) Key Challenges

In India, the agricultural insurance system was revised in 2016, when the Modi administration announced new agricultural policy aiming at making agriculture more profitable, commercial and sustainable. The government addressed key challenges raised in the past agricultural insurance schemes. For example, the loss ratio of the scheme decreased to 71%. On the other hand, the central and local governments are still facing the issue of having to bear a large burden of premium subsidies, as they are required to set a ceiling on the insurance premiums paid by farmers.

For this reason, the central government reduced the subsidy rate to 25% (non-irrigated areas) and 30% (irrigated areas) of the APR from 2020, but as a result, some states have withdrawn from the scheme, and in recent years, the total premiums for PMFBY/RWBCIS have tended to decrease. AIC provides traditional indemnity-based agricultural insurance, and in contrast to PFBY/RWBCIS, the total

⁴³ GOVERNMENT OF INDIA, <https://sansad.in/getFile/loksabhaquestions/annex/175/AU2344.pdf?source=pqals>

⁴⁴ Ministry of Agriculture & Farmers Welfare Department of Agriculture, Agricultural Statistics at a Glance 2023 P185 の総保険料と総支払保険金より計算 <https://desagri.gov.in/document-report-category/agriculture-statistics-at-a-glance/>

premiums have been increasing in recent years. Farmers who have withdrawn from PFMBY/RWBCIS seem to join AIC's agricultural insurance.

Regarding PMFBY/RWBCIS, the main players in the scheme are private insurance companies and the state-owned AIC, and while there is a proliferation of insurance products on offer, it is necessary for public organizations to continue to seek a balance in the appropriate proportion of the burden to be borne by the public sector, while clarifying the policy that farmers should follow.

3.6.5 Agricultural Insurance in Turkey

(1) History and Overview of Agricultural Insurance in India

Agricultural insurance in Turkey dates back to 1957, when agricultural insurance against hail damage was introduced⁴⁵. The penetration of agricultural insurance was limited until the early 2000s. In 2005 the Agricultural Insurance Law was enacted, and efforts to establish an agricultural insurance system through public-private partnerships began. In 2006, the agricultural insurance system called TARSiM was launched to centrally manage agricultural insurance operations. At present, in Turkey, the government and private insurance companies are working together through TARSiM to promote agricultural insurance and manage agricultural risks in the country.

(2) Implementation Framework of TARSiM

TARSiM is the organization that operates the agricultural insurance system in Turkey, and was established in accordance with the Agricultural Insurance Law enacted in 2005. The features of TARSiM are summarized below.

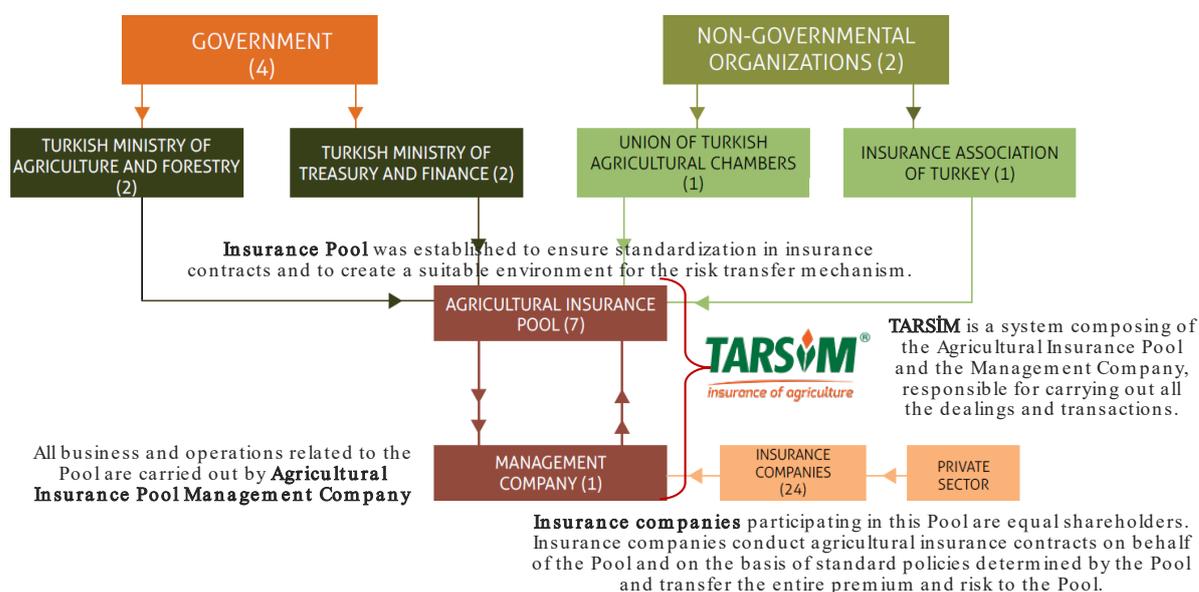


Figure 3.6.11 Implementation Framework of TARSiM

Source: JICA Survey Team based on TARSiM Annual Report

- **Public-private partnership model:** Multiple government organizations, including the Ministry of Finance and the Ministry of Agriculture, and multiple private insurance companies jointly implement operations. The government's role is to provide premium subsidies (50-67% of premiums) and to provide support for the reinsurance arrangement.

⁴⁵ <https://app.mapfre.com/mapfre/docs/html/revistas/trebol/n54/articulo2En.html>

- **Wide range of agricultural insurance products:** The scheme covers a wide range of agricultural risks, and in addition to crop insurance, it also provides livestock insurance, aquaculture insurance, and insurance for beekeeping, etc.
- **Registration and operation process:** Farmers purchase insurance through insurance companies registered by TARSiM. Farmers bear the insurance premiums after the government subsidy is applied. In the event of a loss, a loss assessment is carried out by a loss adjuster from TARSiM, and insurance payments are made promptly.

Figure 3.6.12 shows the implementation structure of TARSiM (the numbers in brackets in the figure indicate the number of representatives). TARSiM is made up of an agricultural insurance pool and a management company. It centrally manages and implements all operations related to agricultural insurance. The agricultural insurance pool provides standardized agricultural insurance contract to the individual insurance companies participating in TARSiM. The individual insurance companies conclude insurance contracts with farmers based on the standardized contract and collect insurance premiums from farmers. The premiums collected from farmers are transferred to the agricultural insurance pool, and the agricultural insurance pool transfers the risk to a reinsurance company. All operations related to the agricultural insurance pool are carried out by the management company.

TARSiM has introduced a mobile application as part of its operational flow. Through the TARSiM mobile application, farmers can access the latest information and statistics, confirm insurance policy contents and certificate numbers, and make inquiries when support is needed. Furthermore, when a loss occurs, it is possible to quickly complete the reporting procedure through the application.



Figure 3.6.12 TARSiM Mobile Application

Source: TARSiM Website

(3) Insurance Product Details

The premium rates for crop insurance under TARSiM are not uniform. These depend on individual conditions such as the type of crop and the area. In terms of coverage, in addition to the standard coverage, farmers can also choose to increase the scope of their risk coverage. The government provides a 50% subsidy for the standard coverage, but for fruit, the government provides a subsidy of around 67%, including additional risk coverage. The following is a summary of the risks covered by TARSiM's for crop insurance, the operational procedure, damage assessment, etc.

Table 3.6.8 Insurance Product Details

| Item | Contents |
|---------------|--|
| Coverage Risk | <p>For all crops, the risks listed below are covered under the hail package insurance.</p> <ul style="list-style-type: none"> • Quantity loss due to hail, storm whirlwind, fire, earthquake, landslide and flood, • Quality loss of fresh fruits/vegetables and cut flowers due to wild animals (wild boar and deer) attack, • Quantity loss of field crops, vegetables, strawberry and saplings due to wild boar attack, • Quantity loss caused by the birds eating the seeds available on the table during the ripening and harvesting period for the Sunflower (For Oil), Sunflower (For Snack) crops and Sunflower (For Certified Seed) crop • Quantity loss caused by the rain risk for the opened bolls during the period from the opening of the bolls on the Cotton and Cotton (For Certified Seed) crop until the harvest • Quantity loss caused by frost risk on fruit saplings and vineyard saplings. <p>Optionally, the risks shown below may also be covered;</p> <ul style="list-style-type: none"> • Quantity loss caused by the risk of frost in fresh fruits, oil rose and artichoke, • Loss of hail net / cover systems and supporting (wired cultivation) systems due to hail, hail weight, storm, whirlwind, fire, earthquake, landslide, flood and vehicle impact, |

| Item | Contents |
|----------------------------|---|
| | <ul style="list-style-type: none"> Quantity loss of cherry and grape during ripening and harvesting periods, quality loss of fig (for fresh use only) during ripening and harvesting periods, quality and quantity loss of fig (for dry) during ripening and harvesting periods due to rainfall, Quantity loss of wheat, barley, oat, rye, triticale and certificated seed of these crops due to hail, storm, whirlwind, fire, earthquake, landslide and flood. Quantity loss of the leaves of the vineyard which is used for pickle, due to hail, storm, whirlwind, fire, earthquake, landslide and flood. Quantity loss caused by the hot weather, which causes the grapefruit, lemon, mandarin, orange to bloom, dry and fall during the fruit set and small fruit periods, and which causes the failure in grain set in the bunches of grapes, cessation of growth, drying and falling in the grain during the blooming and grain setting period, Loss caused by the risk of frost in sugar beet, zucchini (snack), tomato, pepper, eggplant, melon, watermelon and potato, which will cause replanting during the seedling and leafing periods. |
| Premium Rate ⁴⁶ | Average premium rate: 6% Bally: 3.1%, Wheat: 2.8%, Cotton: 2.5%, Maize: 2.0% etc. |
| Registration | It is necessary to register and renew the registration for agricultural land and crops in the system established by the Ministry of Agriculture and Forestry. After that, farmers can apply for insurance through an insurance company or agent participating in TARSIM. For the insurance policy that has been issued, TARSIM will send the policyholder an SMS or email with a policy description, policy information form, and a printed version of the policy, as requested by the policyholder. |
| Payout | 50% of the insurance premium stated on the insurance certificate is subsidized by the government. The insured farmers must pay 15% of the insurance premium in advance, and the remaining insurance premium must be paid within one month of the end of the insurance period. |
| Loss Assessment | The insured farmers must notify the agricultural insurance pool of the claim through the TARSIM mobile application or an agent, etc., within 10 days (within 15 days in the case of damage other than hail damage) of the occurrence of the damage. The damage assessment will be carried out by a loss adjuster appointed by TARSIM. After the damage assessment is completed, TARSIM will pay the final compensation amount to the insured farmers via a bank within 30 days at the latest. Compensation payments will not be made before the harvest date, but in the case of total loss, the payment will be made before the insurance contract expires. |

Source: JICA Survey Team based on TARSIM website

(4) Recent Performance

Figure 3.6.14 shows the trend in the number of farmers taking out agricultural insurance provided by TARSIM from 2014 to 2023. The number of insured farmers in 2014 was around 1 million, and it increased to around 3 million by 2023. It has increased around 3 times in the past 10 years. Although the growth in the number of policyholders between 2022 and 2023 was not particularly large, the average annual growth rate between 2014 and 2023 was approximately 12%, indicating that agricultural insurance has steadily become more widespread. In addition to crop insurance, TARSIM also offers various types of agricultural insurance products, including livestock, poultry, and aquaculture insurance, but approximately 80% of the policyholders in 2023 were enrolled in crop insurance⁴⁷.

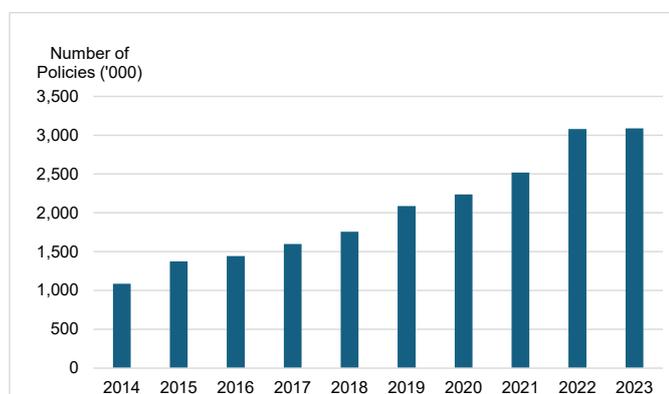


Figure 3.6.13 The Number of Insured Farmers

Source: JICA Survey Team based on TARSIM Annual Reports

⁴⁶ Turkish Experience in Agricultural Insurance (PPP), Necati iCER: https://aso.mk/wp-content/uploads/2019/05/1_Necati-er_TARSIM.pdf

⁴⁷ TARSIM Annual Report 2023: <https://www.tarsim.gov.tr/dergi/faaliyet-raporlari/en-2023>

With the increase in the number of insured farmers, the total premium in 2023 reached approximately 17,000 million Turkish Liras (approximately 70 billion yen). The total premium income in 2023 has increased significantly from approximately 9,000 million Turkish Liras (approximately 36 billion yen) in 2022. The reason for this is that premium has increased, particularly in crop insurance for wheat, barley and other grains, as well as tomato, peaches and oranges. The loss ratio was 78% in 2014, but it has stabilized at around 50% since 2017. The average loss ratio is around 55% over the past 10 years.

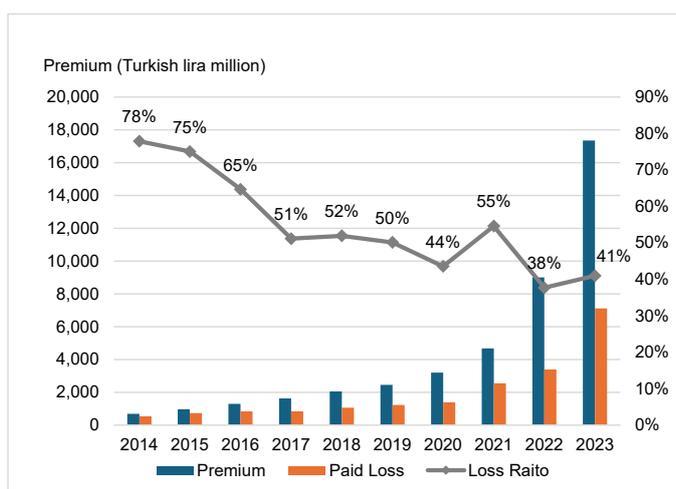


Figure 3.6.14 Loss Ratio of TARSİM

Source: JICA Survey Team based on TARSİM Annual Reports

(5) Key Challenges

In Turkey, the Agricultural Insurance Law was enacted in 2005, and agricultural insurance has been promoted through public-private partnerships. As a result, various agricultural insurance products have been offered in the agricultural sector, and the penetration rate of agricultural insurance in Turkey is estimated over 20%⁴⁸. On the other hand, the rate of agricultural insurance uptake among low-income farmers is limited, and there is a need for agricultural insurance products and initiatives to promote uptake for agricultural insurance for small-scale farmers and low-income farmers.

Furthermore, although the use of mobile applications and other technologies is introduced in the operation of agricultural insurance, the introduction of technologies such as satellite data has not been carried out in the loss assessment, etc., and the use of technology to implement more accurate and efficient damage assessments is an issue. In addition, in order to meet the diverse needs of farmers, the strengthening of technological capabilities related to the development of new insurance products such as yield-based insurance and revenue insurance are necessary in the future.

3.6.6 Case Study of Regional Initiatives: Southeast Asia Disaster Risk Insurance Facility

(1) Overview and Framework of the SEADRIF (Southeast Asia Disaster Risk Insurance Facility)

SEADRIF⁴⁹ is an insurance facility designed to enhance financial resilience against natural disaster risks in the Asian region. It supports various insurance programs and related projects. Currently, the facility’s members include Cambodia, Indonesia, Japan, Lao PDR, Myanmar, the Philippines, Singapore, and Vietnam.

In the financial sector, the term “facility” is typically translated as “credit line,” “credit facility,” or “funding facility.” However, SEADRIF is structured as a trust (the SEADRIF Trust) and operates hierarchically with sub-trusts. Japan has been a key partner in SEADRIF’s development. The Japanese government (Ministry of Finance) signed the memorandum of understanding for its establishment in December 2018, along with Singapore, Indonesia, Cambodia, Myanmar, and Lao PDR. Japan is the largest donor country, and in July 2019, Japan and Singapore became the first contributors to the SEADRIF Trust.

⁴⁸ Turkish Experience in Agricultural Insurance (PPP), Necati iCER: https://aso.mk/wp-content/uploads/2019/05/1_Necati-er_TARSIM.pdf

⁴⁹ SEADRIF HP, <https://seadrif.org/news/lao-pdr-renews-parametric-flood-insurance-from-the-seadrif-insurance-company/>

The World Bank also plays a crucial role, providing support for the capital, establishment, and operation of SEADRIF as the technical partner. One of SEADRIF’s sub-trusts, the SEADRIF Insurance Company, was established to offer disaster risk finance and insurance products. As of 2023, its capital was 13 million USD. SEADRIF Insurance Company focuses on developing and providing flood insurance for low-income countries. Lao PDR signed a three-year contract for 2021-2024, and this year, 2024, marks its first renewal. Myanmar initially joined the insurance program but suspended its participation following the political change in 2021.

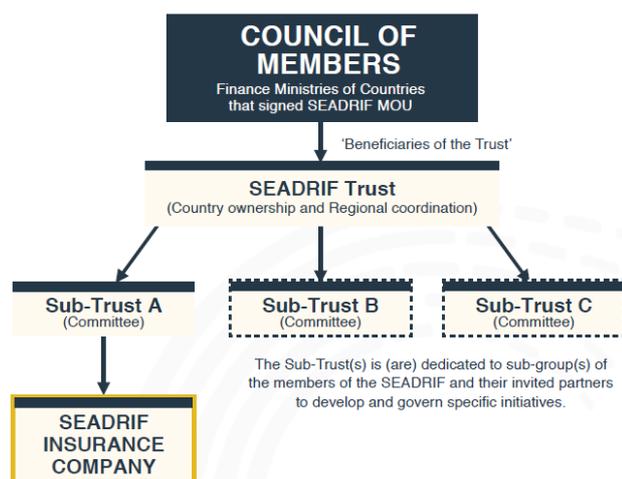


Figure 3.6.15 Implementation Structure of SEADRIF

Source: SEADRIF Annual Report 2023

Additionally, private companies participate as service providers for SEADRIF Insurance Company. “Willis Towers Watson” provides actuarial services and investment management. “JBA Risk Management” sets insurance payment requirements, “Guy Carpenter & Company, LLC” acts as a reinsurance broker, “Gallagher Re” evaluates models, and “PricewaterhouseCoopers, LLP (PwC)” serves as the auditing organization.

(2) Case of Flood Insurance in Lao PDR

The flood insurance in Lao PDR is a hybrid model, with the Lao government contributing to the insurance premium. It is divided into two portions: a parametric portion (Section A) and a finite portion (Section B). In Section A, insurance payments are triggered when the flood level exceeds a predetermined threshold, based on the SEADRIF flood model. The SEADRIF Insurance Company provides reinsurance for amounts exceeding 3 million USD.

In Section B, recovery funds are paid based on damage certificates, with the maximum payout amount set on a yearly basis. In August 2023, following a damage report from Laos, insurance payouts of 150 million USD were made from the finite portion. SEADRIF processed the payment within one business day of receiving the damage report.

(3) Other Activities

Currently, the only insurance provided is flood insurance for low-income countries, with Lao PDR being a member. However, efforts are underway to expand the program. The next initiative selected was financial protection for public assets, with a feasibility study conducted by the World Bank. Participating countries have expressed support for developing and offering this insurance through the creation of a new sub-trust. The SEADRIF Insurance Company is also working on formulating a funding plan for this initiative.

3.7 Utilization and Potential of Remote Sensing Technology in Agricultural Insurance

Remote Sensing (RS) technology, particularly the use of satellite imagery, has the following characteristics: 1) it provides uniform information over a wide area, 2) certain satellites provide over 40 years of data at consistent time intervals, and 3) it allows for the acquisition of information for any spatial division (e.g., Kecamatan level or irrigation districts) without the need for on-site visits. Due to these features, especially when utilizing free satellite data, RS technology is highly suitable for the agricultural insurance sector. Consequently, its utilization is being explored, and many companies and

research institutions are actively adopting RS technology.

One of the challenges in promoting AYII is enhancing the capacity to conduct CCE (improving efficiency and accuracy), which is expected to contribute to this effort with RS technology. Previous JICA technical cooperation projects have also investigated yield prediction methods using RS technologies and conducted trials of yield prediction technology utilizing the Sentinel-1 satellite operated by the European Space Agency (ESA), summarizing the challenges for improving accuracy.

In this context, this study continued to analyze information on the utilization and examination of RS technology, broadly investigating the utilization/consideration status of RS technology in the agricultural sector without limiting the applicable technology (yield prediction technology) or target crops (rice). This section organizes the survey results by the public, academic, and private sectors and summarizes the future potential of RS technology utilization.

3.7.1 Utilization and Consideration Status in Administrative Field

In the administrative sector, BSIP SDLP (Agricultural Land Resources Instrument Standard Testing Center) has developed a crop growth monitoring system (SISCROP 2.0) using satellite imagery, which is now in operation phase. SISCROP 2.0 is a platform that provides distribution information on rice planting areas and their growth status, serving as a government decision-making tool for the supply of fertilizers and seeds and irrigation planning. Currently, monitoring data is available for all paddy fields in Indonesia, except for lowland irrigation areas (the standing crop evaluation model suitable for lowland irrigation areas was in development stage as of October 2024 but is expected to be available in 2025).

Rice growth status is classified into six stages based on the number of days since transplanting, and yield predictions are calculated by multiplying the area of paddy fields in the final stage (mature stage) by the average yield per unit area at the Kabupaten level provided by BPS and the results of independent CCEs. The prediction results are provided down to the Kecamatan level. BSIP SDLP aims to provide monitoring data at the Desa level, but system updates have been hindered by budget constraints.

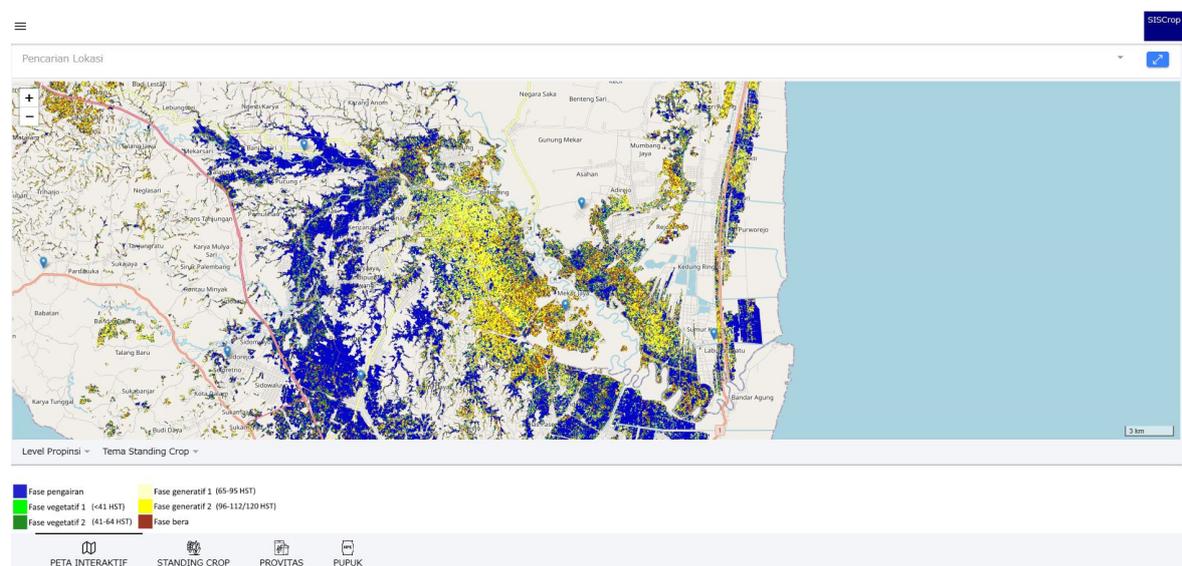


Figure 3.7.1 Rice Growth Distribution Map in SISCROPS2.0 (different colors by growth stages)

Source: <http://scs1.bsip.pertanian.go.id/home>

The input data for this system was based on optical satellite images such as Landsat, Sentinel-2, and MODIS until 2019. However, to ensure a stable supply of monitoring data, the primary input data has been switched to microwave satellite images (SAR images from Sentinel-1) since 2020, which are less affected by clouds. Monitoring results are updated and published every 10 days in Java and Sulawesi, and every 15 days in other regions (with accuracy of over 90% for the detection of standing crop).

From the perspective of agricultural insurance utilization, it is important to note that this technology uses the aforementioned satellite images for land cover segmentation and growth stage evaluation. In other words, the purpose of this system is for policy decision-making, not for evaluating the yield of individual fields, making it difficult to directly use this technology for agricultural insurance. However, since it is effective for grasping the general state of cultivation, it is expected to be utilized as a technology that contributes to reducing moral hazard in insurance.

Apart from the above, no other RS technology in the agricultural sector provided by government-related organizations or in practical stages has been confirmed. However, it has been confirmed that the Indonesian National Research and Innovation Agency (BRIN) and BPS are each developing yield prediction models using satellite images.

BRIN aims to apply yield prediction technology using satellite images and plans to conduct a two-year pilot project with JASINDO at two sites in East Java and West Java starting in 2025. This project will evaluate the accuracy of BRIN's rice growth model and yield, and confirm its applicability to the agricultural insurance sector. Additionally, BPS, in cooperation with the Commonwealth Scientific and Industrial Research Organisation (CSIRO) of Australia, is examining yield prediction technology (using satellite images and machine learning models) for official statistics of commodity crops, including rice, with the expectation of improving the accuracy of agricultural statistics and detailing statistical records in the future.

Table 3.7.1 Summary of Examination Status of RS Technologies by Government Related Institutions

| Institute | Type of Technology | Type of Crops | Applied Condition | Remarks |
|-----------|---|--|---|--|
| BRIN | Yield estimation by several types of satellite images and crop growth model | Rice | Pilot Phase | JASINDO and BRIN are preparing the 2-year pilot project in East Java and West Java Provinces |
| BSIP SDLP | Crop growth monitoring system (SISCROP) by Microwave satellite imageries. | Rice | Operation Phase (accuracy is about 90%) *Paddy in the lowland area is excluded. | Monitoring lowland paddy will be achieved in 2025. |
| BPS | Yield estimation by several types of satellite images and deep learning method. | Rice, corn, beans, cassava, sweet potato | Study Phase | This study is cooperated with CSIRO. The accuracy depends on cloud coverage condition. |

Source: JICA Survey Team

3.7.2 Utilization and Consideration Status in Academic Field

In the academic sector, the Center for Planning and Regional Development (P4W) at IPB University (Bogor Agricultural University) is the most focused on research in this field. IPB has several programs related to satellite utilization (spatial planning program, spatial information program, regional development program, etc.), and in the agricultural sector, RS technology is used for monitoring various crops, with some studies aimed at applying it to insurance systems.

For example, in the joint research with Chiba University under SATREPS, "Development and Social Implementation of Damage Assessment Methods in Agricultural Insurance as Climate Change Adaptation Measures for Food Security (October 2016 to June 2022)," they have been developing and standardizing damage assessment methods using RS technology such as satellite and UAVs images. Specifically, they developed an evaluation system to estimate the extent of damage caused by drought, flood, and pest damage, which are factors leading to poor rice yields, by correlating SAR and UAV monitoring records with various vegetation indices, and standardized procedures for socialization.

However, interviews with IPB, as of the survey period, the current evaluation system heavily relies on ground observation-based reports, with half of the damage reported from RS results differing from actual measurements. It was also confirmed that generalizing the evaluation method would take time. While flood and drought damage can be estimated using climate data such as precipitation, diagnosing pest damage relies on UAV monitoring data, making it difficult to apply this technology widely in the insurance sector. For yield prediction, they use vegetation indices such as NDVI to evaluate vegetation health in five stages, but calibration with ground observation data is essential.

In addition, IPB is working on developing an early warning system for crop damage using RS technology. This research, which started in 2022, aims to estimate crop damage risk from satellite image data without constant monitoring, and they continue to verify the correlation between ground observation records and satellite image data in an experimental field of about 2,000m².

At the Remote Sensing Center (CRS) of Bandung Institute of Technology (ITB), they have established an organization called GISACT (Geospatial Intelligence Solution for Sustainability Action), which develops spatial data and provides government decision-making support tools through the analysis of satellite and UAV images. The target areas include important fields such as food, health, water and sanitation, education related to urban development, energy, and sustainable development fields such as climate, forests, and oceans.

In the agricultural sector, they are working on predicting future land use changes related to urban development, forecasting food supply and demand, creating hazard risk maps, and analyzing the risk of malnutrition at the Kabupaten level in West Java Province, contributing to the optimization and maximization of the effectiveness of related policies. Although they are not conducting research aimed at applying RS technology to the Ministry of Agriculture or agricultural insurance, they are studying rice yield prediction using satellite images. Similar to others, the challenges include the impact of clouds and the lack of CCE data for verification.

Table 3.7.2 Summary of Examination Status of RS Technologies by Academic Institute

| Institute | Type of Technology | Type of Crops | Applied Condition | Remarks |
|----------------|---|-----------------------------|---|---|
| P4W, IPB Univ. | Monitoring rice growth using satellite and UAV images | Rice, Corn, Cassava and etc | Study Phase | Practical stage for rice, but accuracy issues for other crops |
| | Damage assessment for flood and drought using satellite and UAV images | Rice | Study Phase | UAV monitoring is essential for pest and disease damage |
| | Early warning system for flood and drought damage using satellite images | Rice | Study Phase | Particularly difficult to predict pest and disease damage due to complex factors to be considered |
| CRS, ITB | Creation of cropping production models, cropping intensity, and rice suitability mapping (risk diagnosis) maps using satellite images (various vegetation indices) and machine learning | Rice | Research and development from 2017 to 2019, currently used as a government decision making support tool | Not evaluated at the field-level as it is intended for government decision making |
| | Development of yield prediction models using satellite images and machine learning | Rice | Study phase | Lack of ground observation data (CCE) for training data is a challenge |

Source: JICA Survey Team

3.7.3 Utilization and Consideration Status in Private Sector

In the private sector, it has been confirmed that domestic companies such as AXA, Asuransi Bintang, and Blue Marble are already applying or piloting agricultural insurance products utilizing RS technology. These products are designed by customizing weather information (mainly rainfall) and soil moisture data obtained from satellite images for each crop, and all are sold as index insurance (some are pilot projects subsidized). Below are the details and implementation status of the insurance.

AXA has developed index insurance (i.e., insurance against drought and flood damage) using rainfall data (GSMaP is applied as selected RS product). The target crops are rice and corn, and agricultural insurance for rice has been deployed in West Java and East Java Provinces since 2022 through an ISF (InsuResilience Solutions Fund) project. NGOs such as YASI have partnered, and by 2024, insurance has been sold to about 3,800 ha (4,100 small-scale farmers), with ISF covering 60% of the insurance premiums. The project is expected to be completed in 2025, but AXA has stated that it is currently undecided whether to continue this project due to the difficulty of allocating resources for business expansion.

AXA is also conducting a pilot project targeting corn. This project, which started in 2024, is fully funded by EU government grants, covering about 400 small-scale farmers (200 to 300 ha). Similar to the rice project, it is an index insurance based on precipitation data obtained from satellite images, aiming to enhance resilience against extreme weather damage.

Blue Marble is an insurtech company providing insurance solutions in emerging markets. They have developed weather index-based products mainly targeting coffee and cocoa, designed based on CHIRPS precipitation data as satellite products. This index insurance has been implemented since 2021 with funding from Nestlé⁵⁰, aiming to sell to 7,000 farmers by December 2024, targeting coffee farmers in Bener Meriah, Aceh, and Tanggamus, Sumatra, and cocoa farmers in Palu, Central Sulawesi, through Zurich Syariah⁵¹. Yield prediction technology is still under internal consideration.

As mentioned above, most agricultural insurance utilizing RS technology uses precipitation data, but Asuransi Bintang has developed index insurance based on soil moisture distribution obtained from satellite images. The company estimates soil moisture levels by Kabupaten using various types of satellite data such as CHIRPS, Sentinel-1, and Sentinel-2, combined with ground observation records, which is analyzed by machine learning models. They predict the soil moisture distribution of a normal year by learning the soil moisture fluctuation trends over the past 5 years and the information updated every 10 days.

The company's agricultural insurance targets horticultural crops (such as shallots and melons) and perennial crops like cocoa. Based on the above prediction results, trigger soil moisture levels are set (deviation coverage), and insurance premiums and payout amounts are determined. The target areas are cocoa in South Sulawesi and Central Sulawesi, and horticultural crops in East Java. Particularly, the project for horticultural crops is being promoted with the support of Bank Jawa Timur and OJK, and in the future, they are considering selling it as a risk reduction measure when introducing greenhouse cultivation and hydroponic systems.

⁵⁰ 100% funded by Nestlé including premium rate

⁵¹ Blue Marble and Nestlé experienced the similar weather index insurance project in Colombia for coffee farmers (approx. 12,000 farmers with 30,000 ha), and asked cooperation to Zurich to expand this method in Indonesia

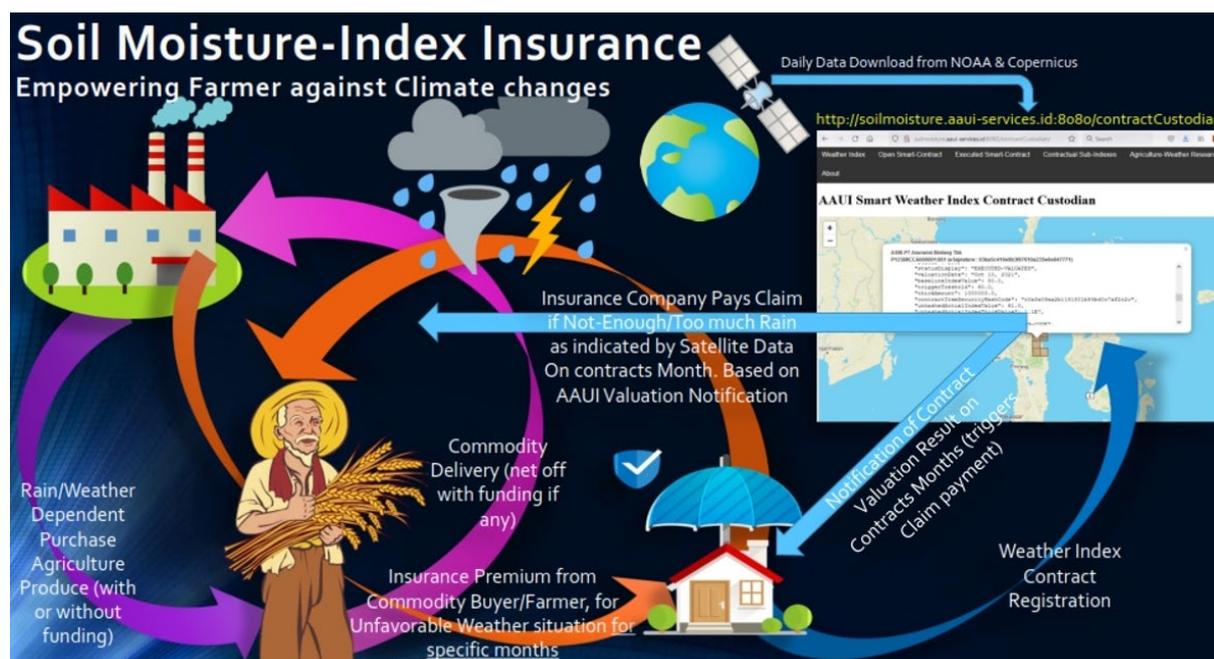


Figure 3.7.2 Schematic flow of the Soil Moisture Index developed by Asuransi Bintang

Source: Asuransi Bintang (2024)

As an example of the utilization of RS technology in agricultural insurance outside Indonesia, the yield prediction technology of WRMS (Weather Risk Management Service) can be cited. The company has developed and socialized agricultural insurance for AYII in India, targeting major crops such as rice, maize, potatoes, and industrial crops like cotton. This insurance is designed to address the challenges of AYII socialization by improving CCE efficiency (reducing its burden by 30% and achieving stable yield predictions independent of surveyors), and the technology is already in practical use for rice in 9 states in India.

The above technology is divided into two phases: the crop identification phase and the yield estimation phase. In the crop identification phase, satellite data from MODIS, Sentinel-1, and Sentinel-2 are obtained, and ground truth data such as crop type and planting start date are collected. 70% of the satellite and ground truth data are used for machine learning, and the remaining 30% are used for model validation. In the yield estimation phase, vegetation indices obtained from Sentinel-2, soil moisture and surface temperature data, weather data such as precipitation, temperature, and solar radiation, and CCE data as ground truth are collected. Similar to the crop identification method, 70% of the CCE data are used for training, and the remaining 30% are used for model validation.

The model's accuracy for crop identification is over 90%, and the yield prediction error is about 12% on average (ranging from 6% to 26%), meeting the CCE error (about 15%) identified in BPS interviews. However, this method requires sufficient optical images to ensure accuracy, and it is premised that the fields are not covered by clouds during the yield estimation phase. The company is considering incorporating microwave (SAR) images, which can obtain data even when covered by clouds, into the model, and it is believed that similar accuracy can be achieved in cloud-prone countries like Indonesia in the near future.

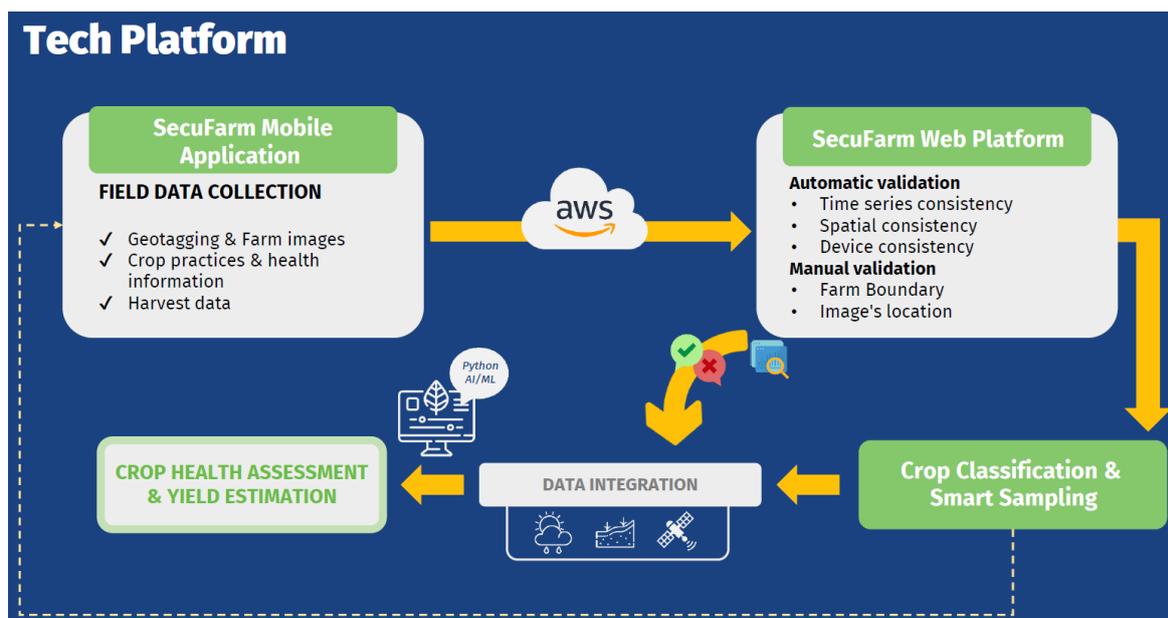


Figure 3.7.3 Schematic Flow of Yield Estimation Process by RS Technology developed by WRMS

Source: WRMS (2024)

Table 3.7.3 Summary of Examination Status of RS Technologies in Private Sector

| Institute | Type of Technology | Type of Crops | Applied Condition | Remarks |
|------------------|--|---|--|--|
| AXA | Estimated rainfall from stellite data (GSMaP) for index insurance | Rice | Implemented within the ISF project since 2022 | 60% of the insurance premium is covered by the ISF project |
| | | Corn | Pilot project in South Sulawesi for one year starting in 2024 | 100% of the insurance premium is covered by the government subsidies |
| Asuransi Bintang | Estimating soil moisture using satellite data and ground observation data through machine learning for index insurance | Horticulture crops (shallot and melon) Cacao | Insurance for horticultural crops are being developed in East Java, and cocoa in South Sulawesi and central Sulawesi | In East Java, it is being socialized with the cooperation of Bank Jawa Timur and OJK |
| Blue Marble | Estimated rainfall amount from satellite data (CHIRPS) for index insurance | Coffee and Cacao | Introduced since 2021, and 7,000 famers are benefitted. | Supported by Nestle, Zurich sells in Aceh, Lampung, and Southeast Sulawesi |
| | Yield estimation model using satellite data | Rice | Study phase | - |
| WRMS | Yield estimation model using satellite and ground observation data | Rice and other crops | Introduced in 9 states in India | Indian company. Also considering yield estimation using SAE images |

Source: JICA Survey Team

3.7.4 Future Potential of Remote Sensing Technology Utilization

The survey confirmed that RS technology is increasingly being utilized in the agricultural insurance sector within Indonesia. Notably, there are many instances where freely available satellites (such as MODIS, Landsat, and the Sentinel series) are incorporated into the design of agricultural insurance products. These technologies are applied not only to major crops like rice and corn but also to perennial

crops such as cocoa and coffee. This trend is largely attributed to the recent advancements in AI (machine learning) models, which have improved the accuracy of satellite image estimates and made the analysis process more efficient in terms of human and time resources.

The technology adopted by private companies in the agricultural insurance sector in Indonesia has been limited to index insurance using weather index data. This is because precipitation data, in particular, is more accurate compared to other data, and the insurance products are easier for farmers to understand. Additionally, being index insurance, the time required from claim to payment is shorter, and the management costs of the insurance are lower.

While the above weather index insurance addresses natural disasters such as floods and droughts exacerbated by climate change, it does not cover pest and animal damage. Therefore, from a food security perspective, actual loss-based insurance like AOTP remains necessary. As seen in the AYII case in India, reducing the number of CCEs by about 30% is considered the practical limit, indicating that actual measurement data remains crucial.

From the above, the utilization of RS technology contributes to the transparency of the agricultural insurance payment process and the reduction of management costs. With future technological advancements and the optimization of AI (machine learning), the accuracy of estimates is expected to improve further, promoting the increased use of RS technology in the agricultural insurance sector. However, for agricultural insurance to be sustainable for providers, it is essential to implement measures to reduce crop production risks (such as installation of agricultural infrastructure and improvement of farming techniques) and to improve the accuracy of CCE as actual measurement data.

CHAPTER 4 RECOMMENDATIONS AND FUTURE DIRECTION

4.1 Workshop Overview and Discussions

To foster a common understanding among stakeholders regarding the future direction of agricultural insurance in Indonesia, three workshops were held under the following policies:

- 1) Setting the Timing and Themes of the Workshops with an Awareness of the Linkage Between the Survey Process and Each Workshop

The workshops were held three times: 1) at the start of the Survey, 2) at the end of the field survey, and 3) at the conclusion of the Survey. The goal was to clarify the policy for initiatives in the field of agricultural insurance through these three workshops.

- 2) Promoting Mutual Dialogue to Encourage Active Participation by Participants

Various stakeholders are engaging in agricultural insurance in Indonesia. Therefore, each workshop included group discussions and interactive sessions to clarify the interests of each stakeholder, foster mutual understanding, and encourage active participation with their ownership.

- 3) Flexible Response to the Needs of Participating Organizations and the Progress of the Survey

The content of each workshop was adjusted flexibly in response to the needs and circumstances of the relevant parties after the Survey began. For instance, the workshops aimed to raise awareness of agricultural insurance among relevant parties through the introduction of case studies related to index-based agricultural insurance and public-private partnership schemes.

These three workshops aimed to clarify the direction of agricultural insurance that can be sustainably implemented in Indonesia and identify action points that will enable each relevant organization to take the initiative in expanding its use. The following is an outline of the three workshops.

Table 4.1.1 Outline of the Workshops

| No. | Timing | Organization | Main Agenda |
|-----|------------------|---|--|
| 1 | 28 October 2024 | BAPPENAS, MOA, JASINDO, BPS, AAUI, and other relevant organizations | <ul style="list-style-type: none"> • Sharing the purpose of this Survey, the workshop schedule and the final output image • Sharing opinions on the positioning of agricultural insurance in the existing food security and agricultural sectors • Sharing understanding of the current situation and awareness of issues (including sharing examples from other countries) |
| 2 | 12 December 2024 | Ditto | <ul style="list-style-type: none"> • Sharing the results of additional information gathering • Sharing the results of the field survey • Discussing solutions to issues, revisions to and updates of past recommendations |
| 3 | 6 February 2025 | Ditto | <ul style="list-style-type: none"> • Sharing the results of the Survey • Future agricultural insurance in Indonesia • Future specific measures and the formulation of action points • Clarification of the responsible organization and division of roles |

Source: JICA Survey Team

4.1.1 The First Workshop

The first workshop was held in Jakarta on October 28, 2024. Participants included representatives from BAPPENAS, MOA, the Statistics Bureau (BPS), JASINDO, the Ministry of Finance, the JICA Indonesia Office, AAUI, and YASI. Additionally, staff from the Karawang Agricultural Office and JICA Headquarters joined the workshop online. In total, 43 participants attended, both in-person and online.

After the opening by BAPPENAS, the first workshop included: 1) an explanation of the Survey outline by the JICA Survey Team, 2) presentations on the current state of agricultural insurance systems from MOA and JASINDO, 3) an introduction to agricultural insurance cases in Thailand and the Philippines

by the JICA Survey Team, and 4) a discussion on the future direction of agricultural insurance. Below is a summary of the key points from the presentations and discussions:

1) Main Content of JASINDO’s Presentation:

- The agricultural insurance program in Indonesia is designed to protect farmers from risks such as drought, flooding, and pest damage. The program covers rice cultivation, cattle, and water buffalo, and is also trialing a yield index insurance (AYII). Notably, the program aims to reduce the financial burden on farmers, with a system where farmers pay part of the insurance premiums, and the government provides subsidies.
- This agricultural insurance scheme in Indonesia protects farmers against floods, droughts, and pests and diseases. Yet, there have been challenges such as the wide dispersion of farmland and limited awareness among farmers.
- The program is backed by legal frameworks, with the government obligated to protect agricultural activities through insurance. Ensuring that farmers receive the necessary support is key to achieving food security and stabilizing the agricultural sector in Indonesia. Nevertheless, there are issues like budget constraints for insurance premium subsidies, low farmer participation rates, and land selection problems. Specifically, the insurance application and claim processes need to be efficient.
- To address these issues, solutions such as using digital technology, simplifying insurance procedures, and expanding pilot programs have been proposed. These include better land management through geographic information systems (GIS) and remote sensing, updating the benchmark yield in AYII, and streamlining compensation procedures. The hope is that these initiatives will reduce the burden on farmers, improve transparency and reliability in agricultural insurance, and ultimately increase the resilience of Indonesian agriculture.

2) Main Content of MOA’s Presentation

- Since 2015, the agricultural insurance program has supported approximately 9 million farmers and insured around 5.8 million hectares of land. Additionally, around 310,000 livestock have been registered since 2016, contributing to the stabilization of income for farmers and livestock owners, as well as strengthening food security in the country. However, there remain several challenges in the operation of agricultural insurance.
- These include low willingness among farmers to pay premiums, inaccurate land data, and complex and lengthy insurance processes. Notably, delays in insurance payments can negatively impact farmers’ ability to secure planting funds on time. There are also issues with the lack of systems and human resources for data entry and assessment.
- To address these challenges, MOA emphasized the need for education and training to increase farmers' understanding of insurance, the improvement of land data accuracy using geospatial data, and the creation of a simpler and more user-friendly insurance system. It is important to boost farmers' understanding of insurance benefits and encourage voluntary participation, while also improving data management and the efficiency of the insurance claims process.

Table 4.1.2 Discussions in the First Workshop

| Category | Speaker | Main Point |
|-----------------------|----------|---|
| Policy/ Regulation | BAPPENAS | <ul style="list-style-type: none"> • BAPPENAS aims to optimize limited resources and must balance fiscal constraints with subsidy levels. Currently, 80% of subsidies are provided, but there is a need to evaluate whether this 80% is the appropriate level for the agricultural insurance system moving forward. • Although laws related to the agricultural insurance are in place, there are still regulatory challenges. Specifically, coordination issues between relevant ministries remain, and a presidential decree concerning |

| Category | Speaker | Main Point |
|----------------------------------|------------------|---|
| | | <p>agricultural insurance is required.</p> <ul style="list-style-type: none"> Educational programs and premium subsidies have been implemented to encourage farmers to view agricultural insurance as a vital investment and to motivate their participation. Currently, the state-owned insurance company JASINDO leads the agricultural insurance initiative. However, in the future, private companies may also become involved, which will likely necessitate legal revisions to expand coverage and balance responsibilities within the sector. |
| Stakeholder Coordination | AAUI | <ul style="list-style-type: none"> To effectively raise awareness of agricultural insurance, it is crucial to involve all relevant stakeholders. For instance, it is vital to engage multiple partners, including small-scale stakeholders at the village and grassroots levels, to promote and sell agricultural insurance products. The Indonesian government aims to foster a sense of ownership among farmers, encourage investment in agricultural insurance programs, and reduce reliance on government funding. To achieve this, it is essential to build partnerships with both domestic and international stakeholders, such as JICA and private companies, and create an ecosystem that supports agricultural development. |
| | BPS | <ul style="list-style-type: none"> To fully involve BPS in the agricultural insurance program, its role must be clearly defined through a formal cooperation agreement. However, the BPS faces resource constraints in terms of both human resources and budget. Since many research activities are part of its existing programs, careful consideration is needed to determine if it has the capacity to fully engage in the agricultural insurance program. When BPS provides data or training support, a memorandum of understanding (MOU) with the relevant organizations is necessary. This is because BPS manages statistical data and must ensure data confidentiality. The MOU will also provide a structured framework for sharing data with external parties. |
| | JICA Survey Team | <ul style="list-style-type: none"> Disagreements often arise between stakeholders in agricultural insurance due to the different roles and responsibilities each stakeholder holds in the agricultural sector. For instance, the implementation of Crop Cutting Experiments (CCE) is vital in yield index insurance, but the structure for carrying out CCE is not always clearly defined. Therefore, when introducing new initiatives, it is important to coordinate various perspectives and address any unresolved issues between organizations. |
| Insurance Operation | AAUI | <ul style="list-style-type: none"> The implementation of AOTP faces issues with the farmer registration process. To improve efficiency, future initiatives could explore integrating insurance registration with the agricultural card system. |
| Technology | MOA | <ul style="list-style-type: none"> The BSIP SDLP of MOA currently operates a satellite-based system called Sis-Crops. This system, updated twice a month with a spatial resolution of 10 square meters and near real-time data, has significant potential for agricultural insurance, particularly in yield and productivity forecasting. However, since its primary purpose is not agricultural insurance, further development is needed for specific applications such as land damage assessment. |
| Insurance Literacy and Awareness | AAUI | <ul style="list-style-type: none"> One of the challenges of AOTP is the low willingness of farmers to pay for insurance. This issue is not only due to reluctance but also because many farmers are small-scale producers with limited financial capacity. According to the Agricultural Census, there are 17.2 million small-scale farmers in Indonesia, and many of them cannot afford agricultural insurance products. |
| | MOA | <ul style="list-style-type: none"> Strengthening cooperation in training activities is crucial, particularly by involving the human resource development team within the MOA. The Ministry is committed to fully supporting the integration of agricultural insurance training into the curriculum for extension officers. |

Source: JICA Survey Team

4.1.2 The Second Workshop

The second workshop was held in Jakarta on December 12, 2024. As with the first workshop, there were a total of 38 participants, including staff from BAPPENAS, MOA, MOF, JASINDO, BPS, the Karawang Agriculture Office, the Kendal Agriculture Office, AAUI, YASI, JICA Indonesia Office, and JICA

Headquarters (online). The second workshop included 1) a sharing of the results of the field survey, 2) a panel discussion with farmers, extension officers and agricultural office staff who are actually involved in the management of the AOTP, and 3) a discussion on future directions.

The panel discussion was held with the aim of sharing the experiences of those involved in the actual operation of agricultural insurance systems. By sharing these experiences, stakeholders were able to gain an understanding of the realities of agricultural insurance operation, and also to discuss future directions that are in line with the actual situation on the ground. The main discussion points from the panel discussion are outlined below.

- 1) Awareness and understanding of insurance
 - Initiatives and challenges to raise awareness of agricultural insurance among farmers
 - What helped farmers to increase their initial understanding and knowledge of agricultural insurance
 - The role of extension officers in communicating the benefits of agricultural insurance to farmers
- 2) Registration, claims procedures, and damage assessment
 - Processes related to the efficiency of the entire insurance business, including insurance registration, claims procedures, damage assessment, and insurance payments
 - Farmers' experiences of the registration process and claims handling, including what has worked well and where there is room for improvement
 - Common problems in the procedural aspects of claims management, as seen by JASINDO branch staff and pest inspectors
- 3) Product design tailored to the needs of farmers
 - Whether the design and terms of the insurance product meet the specific needs of farmers
 - Farmers' view on the coverage, premiums, product terms, etc. of AOTP
 - How product design is determined and how feedback from farmers should be reflected

Table 4.1.3 Discussions in the Second Workshop

| Category | Speaker | Main Point |
|--|--------------------------------|--|
| Awareness and understanding of insurance | Regional Agricultural Officers | <ul style="list-style-type: none"> • It is difficult to simply compare the level of understanding of farmers with AOTP, as the period during which AYII was introduced as a pilot project was limited. • The challenge in promoting agricultural insurance is to change the mindset of farmers. Many farmers associate insurance with disasters, thinking that insurance itself is a bad thing. • When explaining the benefits of agricultural insurance, it was easier to get the farmers to understand if we used examples of general insurance. • It takes time to raise farmers' understanding and awareness of agricultural insurance. Although it is a gradual process, we feel that farmers' motivation to participate in agricultural insurance is increasing. |
| | Farmers | <ul style="list-style-type: none"> • It is efficient to promote agricultural insurance by communicating its benefits to fellow farmers. |
| | AAUI | <ul style="list-style-type: none"> • In order to attract customers to take out insurance, whether it be agricultural insurance or general insurance, it is necessary to provide various incentives to customers. Even with agricultural insurance, it is necessary to prepare incentives that will attract the interest of farmers. • The average age of farmers in Indonesia is high. On the other hand, the younger generation is more likely to be open to the idea of insurance. It may be possible to promote agricultural insurance by targeting this younger generation. • The field survey in East Java showed that women are deeply involved in household financial decisions. The wives of farmers are more risk- |

| Category | Speaker | Main Point |
|---|---------------------------------------|---|
| | | conscious, and it may be possible to promote agricultural insurance by targeting these women. <ul style="list-style-type: none"> In order to take out insurance, it is necessary to continue paying premiums every year. Even if there is short-term interest in insurance, there is a possibility that interest will fade over the course of three or four years. For this reason, it may be difficult to continue selling agricultural insurance on its own. It is thought that it will become more attractive to farmers if it is sold in combination with other agricultural services. |
| Registration, claims procedures, and damage assessment | Regional Agricultural Officers | <ul style="list-style-type: none"> The registration process for AOTP is not complicated, but there are communication problems with JASINDO. |
| | Farmers | <ul style="list-style-type: none"> In the insurance claim process, prompt procedures lead to the farmers' trust. On the other hand, the time it takes to pay insurance claims has led to a decline in farmers' interest in agricultural insurance. |
| | Others | <ul style="list-style-type: none"> The major issue is that the insurance claim process takes too long. This needs to be improved in order to continue participating in the agricultural insurance program. |
| | JASINDO | <ul style="list-style-type: none"> The AYII trial implementation was limited in terms of the area covered, despite the high cost of implementing CCE. When considering AYII implementation in the future, it will be necessary to request some form of cooperation from the BPS. |
| Product design tailored to the needs of farmers | Regional Agricultural Officers | <ul style="list-style-type: none"> It may be necessary to review the benchmark yield for AYII, taking into account the opinions of farmers. |
| | Others | <ul style="list-style-type: none"> Accurate data is necessary for appropriate product design. It is necessary to improve the accuracy of land and yield data by utilizing remote sensing technology. |

Source: JICA Survey Team

Main discussion points regarding future direction

JASINDO:

- Regarding the consortium that includes private companies, there needs to be a system in place where other insurance companies can benefit from collecting insurance premiums, while JASINDO does not bear any responsibility.
- The average loss ratio for AOTP is around 80%. If the high loss ratio continues, it might be difficult to continue operating AOTP from an economic point of view. Thus, there are concerns about whether AOTP can be maintained with the current premium rate (Loss ratio refers to the ratio of insurance payouts to collected insurance premiums. As shown in Figure 3.2.3, the loss ratio for non-life insurance in Indonesia is around 40%).
- In theory, it is possible to set insurance premium rates according to regional risk, but in reality, as they are set by the government program, it is thought to be difficult to change them.

Ministry of Agriculture:

- In order to reduce the financial burden on the central and local governments, various funding sources should be sought in the future. For example, there is potential to increase the area covered by agricultural insurance by cooperating with private companies.
- Regarding premium subsidies, it is possible to consider allocating 80% of government subsidies between the central and local governments. It is necessary to reduce subsidy rate by increasing farmers' willingness to pay for insurance.

BPS:

- In the case of agricultural insurance, the benefits of joining are not easily visible, so it can be said that it is a low priority expenditure item for farmers.
- It is necessary to make agricultural insurance more accessible to farmers by increasing its popularity and simplifying the way it is administered. If the process is easy to understand and farmers can see the benefits of joining, it is thought that the number of farmers participating in the agricultural insurance system will increase.

JICA Survey Team:

- With regard to the setting of insurance premium rates, there is room for improvement in terms of making the agricultural insurance system more sustainable from an insurance company's financial perspective by setting rates in line with regional risks.
- For the loss ratio, opinions differ depending on the target loss ratio for the government program. For example, the loss ratio for Japan's agricultural insurance system is around 80%, which is considered to be appropriate as a government program. If there is concern about a loss ratio of 80%, raising the premium rate should be considered.
- The important thing is to create a mechanism for discussions and decisions on such agricultural insurance systems among the relevant parties. Specifically, BAPPENAS, MOA, and JASINDO could form an agricultural insurance coordination team to discuss specific improvement proposals. Currently, BAPPENAS is preparing a draft presidential decree on agricultural insurance, and the draft decree includes the establishment of such a coordination team at the central level.

4.1.3 The Third Workshop

The third and final workshop was held at BAPPENAS on February 6, 2025. A total of 61 participants attended, including representatives from BAPPENAS, MOA, BPS, OJK, JICA Indonesia Office, JICA HQs, Karawang and Kendal Agricultural Offices, AAUI, YASI, and GIZ.

During the workshop, following the opening remarks by BAPPENAS :

- 1) The JICA Survey Team presented a summary of the survey results.
- 2) BAPPENAS commented on the survey results and presented action points.
- 3) MOA commented on the survey results and presented action points.
- 4) JASINDO commented on the survey results and presented action points.
- 5) The participants made a consensus on the action points for each organization to move forward.

Points raised by BAPPENAS:

- Agricultural insurance has been recognized as a crucial component of national development in the Medium-Term Development Plan (RPJMN). It aligns with the President's vision of strengthening food security. To achieve this priority goal, agricultural insurance plays an essential role in risk management and production stability. Moreover, beyond protecting farmers, agricultural insurance is expected to help control inflation and stabilize the economy.
- To advance agricultural insurance, BAPPENAS proposes establishing a central government-level Agricultural Insurance Task Force¹. This task force will be responsible for overseeing regulations

¹ In this Report. "Agricultural Insurance Task Force", "Agricultural Insurance Coordination Committee", and "Task Force Team" are defined as follows:

Agricultural Task Force: BAPPENAS proposed to establish in response to this Survey. This is also an action point for BAPPENAS. It is expected to discuss the agricultural insurance roadmap and draft presidential decree in this Agricultural Insurance Task Force.

Agricultural Insurance Coordination Committee: This refers to the committee with inter-ministerial coordination functions

and coordinating policies. Given the constraints of the national budget, specific discussions on its implementation will begin in the first quarter of 2025, following consultations with key stakeholders.

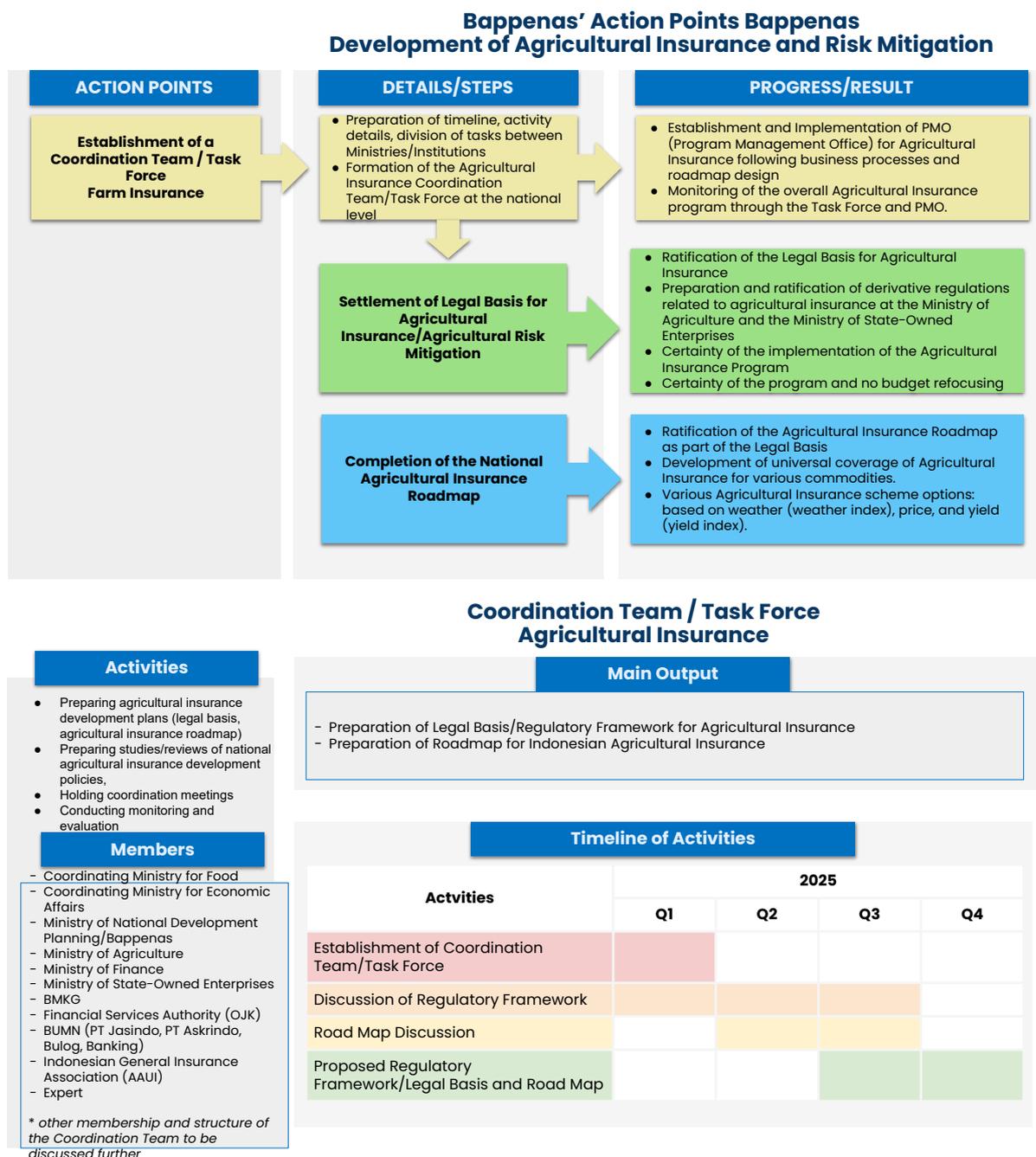


Figure 4.1.1 BAPPENAS's Presentation on Action Points

Source: BAPPENAS

- One of the key outcomes of the task force will be the development of a comprehensive agricultural insurance roadmap and a draft Presidential Decree. The task force is expected to include

that is stated in the draft Presidential Decree on agricultural insurance that BAPPENAS has been preparing. It is not actually established, but it is expected to be included in the draft Presidential Decree in the future with the aim of establishing it in the future.

Task Force Team: A team that was proposed to be established in the preceding JICA project. Its purpose was to discuss the implementation structure of AYII, etc. However, it was not formally established after the preceding JICA project ended. See 3.3.4 for more details.

representatives from MOA, MOF, OJK, state-owned enterprises, and financial institutions. Further discussions will clarify the roles and responsibilities of each member.

- The establishment of the Agricultural Insurance Task Force is a core action point of BAPPENAS. Below is a summary of BAPPENAS’s presentation on the proposed action points.

Points raised by the MOA:

- The MOA recognizes that one of the key challenges is increasing farmers’ awareness and willingness to pay insurance premiums for agricultural insurance. To address this, it emphasizes the importance of continuing Training of Trainers (TOT) and Training of Farmers (TOF) programs.
- The government budget for AUIP is currently under significant strain. Given these financial limitations, the Ministry believes it is necessary to explore alternative funding sources beyond national finances, including external resources from the private sector.
- Developing a comprehensive agricultural insurance roadmap is crucial. A roadmap that accurately reflects the current situation will help secure sustainable budget allocations. The Agricultural Insurance Task Force proposed by BAPPENAS is expected to play a key role in both roadmap development and budget allocation.
- The Ministry of Agriculture’s future initiatives include:
 - 1) Enhancing farmers' understanding of agricultural insurance through TOT and TOF programs.
 - 2) Expanding TOF training and support programs through agricultural extension officers.
 - 3) Implementing pilot projects for new insurance products and schemes.
 - 4) Continuously improving the agricultural insurance system by establishing a monitoring and evaluation framework that incorporates feedback from stakeholders.

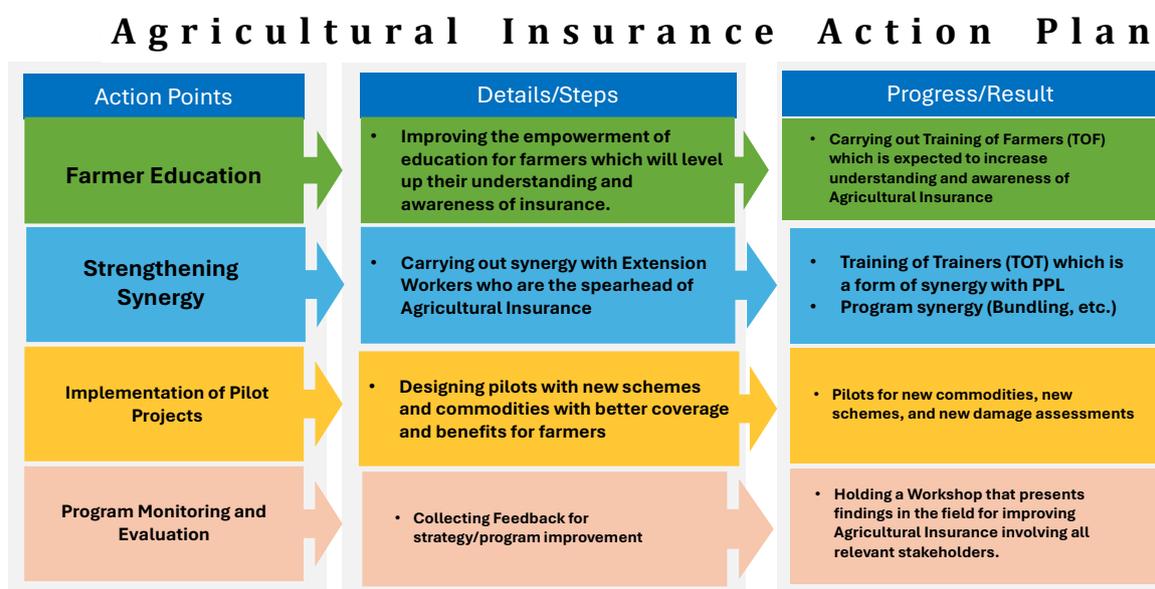


Figure 4.1.2 MOA’s Presentation on Action Points

Source: MOA

Points raised by JASINDO:

- To further expand agricultural insurance, it is essential to establish a system that efficiently manages farmer registration and the insurance claims process. At the same time, reducing operational costs is crucial. This can be achieved by minimizing the need for on-site damage assessment surveys through the adoption of remote sensing technology and other advanced tools.
- Climate change poses a significant risk in the field of agricultural insurance, making it challenging for private insurance companies to maintain long-term involvement. Given this, it is preferable for a state-owned company like JASINDO to continue its operations under the oversight of a government auditing agency to ensure stability and accountability.
- Looking ahead, securing long-term funding for AOTP is vital. This requires presidential decrees related to agricultural insurance, issued through BAPPENAS, to safeguard the program against potential budget cuts and ensure its sustainability.

PROPOSED ACTION POINTS FOR AGRICULTURAL INSURANCE DEVELOPMENT

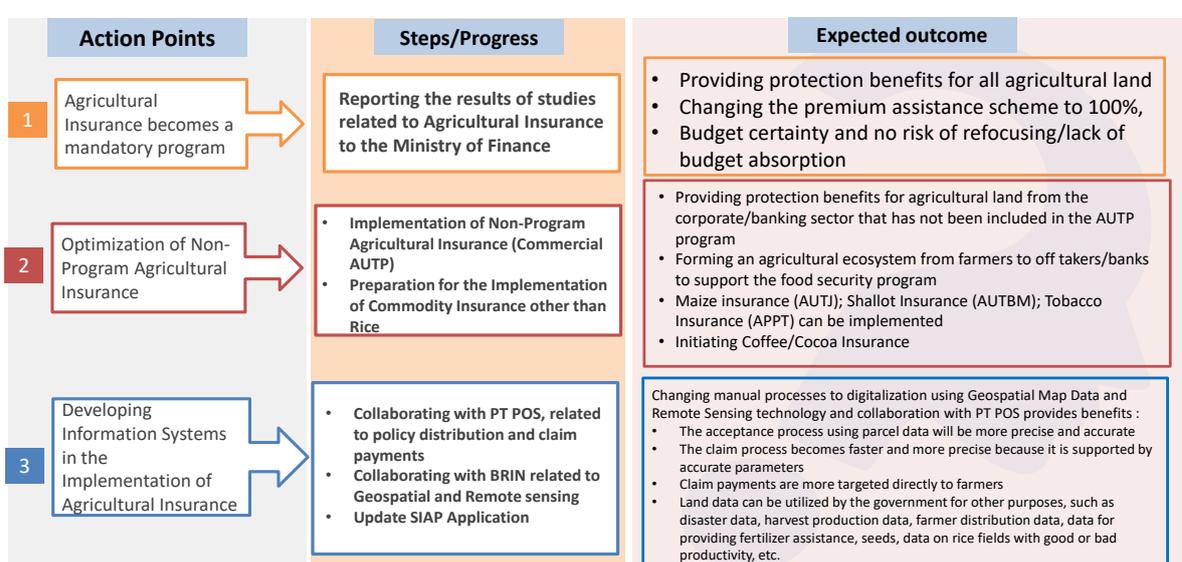


Figure 4.1.1 JASINDO's Presentation on Action Points

Source: JASINDO

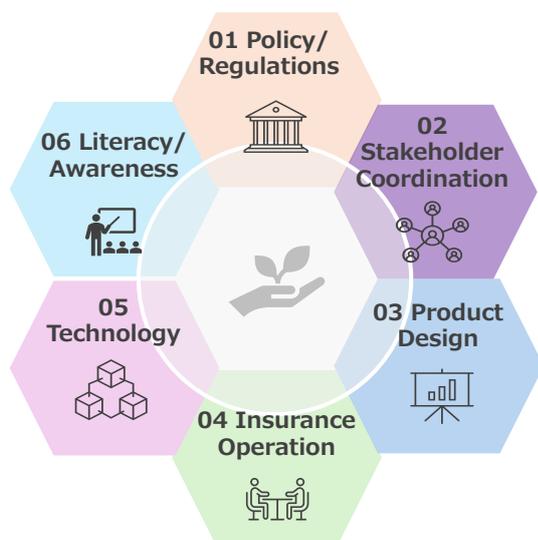
During the final session of the third workshop, feedback was provided on the presentations from each organization. Through this discussion, participants identified and agreed upon three key action points to be implemented by 2025:

1. Establishing an Agricultural Insurance Task Force – A dedicated task force will be created to oversee the development and coordination of agricultural insurance policies.
2. Securing the AOTP Budget for FY2026 – Efforts will be made to ensure sufficient budget allocation for the AOTP program in the upcoming fiscal year.
3. Advancing Studies on Remote Sensing Technology – Research and development on the application of remote sensing technology in agricultural insurance will continue to improve efficiency and accuracy.

For more details on these action points, please refer to “4.3 Indonesian Government Measures for Promoting Agricultural Insurance.”

4.2 Key Challenges and Recommendations

4.2.1 Key Challenges



01 Policy/ Regulations: The clear positioning of agricultural insurance in policy and development plans is the foundation for the sustainable operation of agricultural insurance systems.

02 Stakeholder Coordination: As agricultural insurance involves a wide range of stakeholders, it is important to coordinate between stakeholders and establish a coordination system that will lead to the most effective and efficient implementation.

03 Product Design: Designing insurance products that meet the needs of farmers is essential for the promotion of agricultural insurance systems.

04 Insurance Operation: In order to increase the penetration and take-up rates of agricultural insurance, it is necessary to establish a simple and highly transparent operational system.

05 Technology: The utilization of remote sensing, AI, digital technology, etc. should be incorporated into the improvement of more efficient agricultural insurance systems.

06 Literacy/ Awareness: Improving knowledge and awareness of agricultural insurance is essential for promoting agricultural insurance. This includes not only farmers, but also extension workers and policy makers.

Figure 4.2.1 Six Key Enablers for Promoting Agricultural Insurance

Source: JICA Survey Team

Effective promotion of agricultural insurance requires close coordination among a wide range of stakeholders, including insurance companies, multiple ministries and government agencies, local governments, and farmer groups. To ensure successful implementation, efforts must extend across six key areas: 1) Policy/ Regulations; 2) Stakeholder Coordination; 3) Product Design; 4) Insurance Operation; 5) Technology; 6) Literacy/ Awareness. These elements are interconnected, and achieving a balanced approach while strengthening each component is crucial to building a sustainable and resilient agricultural insurance system.

(1) Policy/ Regulations

1) Clarification of Policy Positioning

In Indonesia, the Indonesian Farmers Protection and Empowerment Law (2013) serves as the foundation for national agricultural insurance such as AUP. Additionally, the MOA, which oversees the implementation of agricultural insurance, has established Ministerial Decree No. 40/2015 (revised by Ministerial Regulation No. 30/2023) to define the scope, implementation structure, and insurance premium subsidies for the program.

The National Medium-Term Development Plan (2020–2024) acknowledges that farmers face risks from climate change and natural disasters and highlights the need for support to improve food security. However, agricultural insurance is not explicitly positioned as a policy priority within the plan. Following the inauguration of President Prabowo in October 2024, food security and self-sufficiency have been emphasized as key national strategic priorities in the agricultural sector.

While agricultural insurance is a crucial tool for achieving food security, the new administration has not specifically highlighted agricultural insurance or risk management in its policy agenda. Instead, the MOA appears to be focusing more on initiatives such as paddy field development. As a result, funding for agricultural insurance promotion has been limited, and in the 2025 fiscal budget, the originally allocated funds for agricultural insurance are considered to reallocate to paddy field development projects.

To address these challenges, BAPPENAS is preparing a presidential decree on agricultural insurance.

This decree aims to strengthen the legal foundation of the agricultural insurance system and enhance coordination among related ministries by establishing a policy framework that supersedes the ministerial ordinance under the MOA. Key provisions of the proposed decree include:

- ✓ The creation of an agricultural insurance coordination committee comprising multiple ministries.
- ✓ Allowing private insurance companies to participate in agricultural insurance programs as part of a consortium.

However, the approval and finalization process for the decree is expected to take time. To reinforce the policy and legal framework for agricultural insurance, it is crucial to expedite the approval process and finalize the draft decree as soon as possible.

2) Promoting Public-Private Partnerships

Under current Indonesian law, participation in AOTP is restricted to state-owned insurance companies or insurance companies owned by local governments. As JASINDO is the only state-owned insurance company with experience in the agricultural insurance sector, it effectively holds a monopoly in the AOTP. In contrast, Thailand has successfully implemented an agricultural insurance system through public-private partnerships, where the public and private sectors collaborate to share roles and responsibilities, ensuring more efficient system operation.

With only JASINDO managing agricultural insurance, several limitations arise:

- A shortage of staff for damage assessments.
- Limited branch offices and personnel in rural areas.
- Restricted capacity for promotional and educational activities.

To expand agricultural insurance in Indonesia, it is essential to leverage the expertise, technology, and resources of the private sector. Potential areas for private sector involvement include:

- Product development for export crops beyond rice.
- Risk-sharing underwriting mechanisms.
- Collaboration in outreach activities and system management.

BAPPENAS is preparing a draft presidential decree that includes provisions for operating the agricultural insurance system through a consortium of insurance companies. This initiative aims to broaden participation and enhance efficiency in agricultural insurance implementation.

3) Promotion Through Collaboration with Other Programs

The current agricultural insurance system (AOTP) in Indonesia is being promoted as a standalone insurance product. In contrast, in countries like Thailand and the Philippines, agricultural insurance products are promoted in conjunction with agricultural loans or other related programs. This integrated approach has resulted in higher subscription rates for agricultural insurance in those countries compared to Indonesia.

In Indonesia, there are existing subsidy programs for agricultural materials and government-backed agricultural loan programs with preferential interest rates. However, these programs are not linked to AOTP, and each operates independently.

To improve the operational efficiency of AOTP and further promote agricultural insurance, it is essential to establish a more integrated system. One possible approach would be to automatically offer agricultural insurance for materials that have received government subsidies or to require participants in agricultural loan programs to enroll in agricultural insurance.

(2) Stakeholder Coordination

In the operation of an agricultural insurance system involving a wide range of organizations, an effective coordination mechanism between the relevant parties is essential. Currently, MOA, BAPPENAS, and JASINDO play central roles in Indonesia's agricultural insurance system. However, there is no formal coordination mechanism among these key parties, and it appears there is a lack of shared understanding regarding the current situation, issues, and the future direction of the agricultural insurance system itself.

For example, JICA conducted a trial of yield index insurance (AYII: Area-Yield Index Insurance) in a previous project. Based on the issues and lessons identified, recommendations were made for future improvements, but there was no unified approach or response to these recommendations. This highlights the absence of a mechanism for the main stakeholders to regularly discuss and address how to enhance the agricultural insurance system moving forward. Therefore, it is crucial to establish a coordination mechanism among the relevant parties, such as the creation of an agricultural insurance coordination committee made up of the relevant ministries, as outlined in the proposed presidential decree.

(3) Product Design

The Indonesian government's agricultural insurance program introduced as AOTP, indemnity insurance. Since AOTP expanded its coverage in 2015, there have been no significant changes to the product design, such as the risks covered, premium rates, or insurance amounts. However, the socioeconomic situation in Indonesia has changed significantly, and the production costs for rice cultivation are rising. For example, in a survey conducted by the previous JICA technical cooperation project, several farmers stated that even if the insurance premium burden increased, the insurance coverage of 6 million IDR should be raised.

Additionally, although a uniform premium rate is applied nationwide, the level of risk for farmers varies by region. Farmers have reported instances where those who have received insurance payouts multiple times in the past were refused enrollment in the AOTP by JASINDO. From the perspective of maintaining a sustainable agricultural insurance system, it may be worth considering a review of insurance premium rates and coverage amounts based on regional differences. The same consideration can be applied to product designs tailored to the needs of farmers, such as the trial implementation of AYII.

(4) Insurance Operation

The process of operating agricultural insurance can be divided into three main stages: registration of subscribers and collection of insurance premiums, damage assessment, and payment of insurance claims. Among these, the most common complaint from farmers is the lengthy time it takes from damage assessment to insurance payment. According to farmers, there is often a long delay between when the damage occurs in the field and when the damage assessment is conducted. In some cases, they have to wait an extended period before receiving their insurance payment. As a result, they are unable to receive timely compensation, which can impact their next crop.

This situation can lead to farmers losing trust in AOTP and diminishing their awareness of the need for agricultural insurance. There is a clear need for a more transparent and streamlined business management system, which could include reviewing the entire operational process and exploring digitization. Additionally, the current damage assessment method is not standardized, indicating the need for improvements in the assessment guidelines and enhancing the capabilities of those involved in the damage assessment process.

(5) Technology

There are high expectations for the use of various cutting-edge technologies in the field of agricultural insurance. For example, this includes the development of yield prediction models utilizing AI and loss

assessment methods that use remote sensing technology. In addition to these advanced technologies, there is also anticipation surrounding the use of existing digital payment services and the digitization of business operation processes.

While many of these cutting-edge technologies are still in the research phase with few practical applications so far, continued research and trials are necessary to explore how AI and remote sensing technology can be effectively applied in agricultural insurance. Additionally, regarding the use of existing technologies, there is potential for collaboration with agricultural service providers and the integration of agricultural insurance services into agricultural-related applications. Moving forward, it will be essential to foster such collaborations to further promote agricultural insurance systems.

(6) Literacy/ Awareness

Raising awareness and understanding of agricultural insurance among farmers and extension officers is a key factor in ensuring the sustainable operation of agricultural insurance systems. Even in countries where agricultural insurance is relatively well-established, such as the Philippines and Thailand, improving farmers' awareness and understanding remains a common challenge. In Indonesia, three main factors limit farmers' awareness and understanding of agricultural insurance: 1) reliance on subsidies for agricultural insurance promotion, 2) the absence of training and promotional materials, and 3) limited channels for promoting agricultural insurance.

1) Agricultural insurance promotion that relies on subsidies

In the agricultural insurance system (AUTP) in Indonesia, the central government subsidizes 80% of the insurance premiums. In many cases, the remaining 20% is covered by the local government. As a result, many farmers can join AUTP without having to pay premiums themselves. When insurance premiums are essentially 100% subsidized by the central and local governments, farmers often lack awareness that they are insured, and it becomes difficult to motivate them to deepen their understanding of agricultural insurance or acquire knowledge about it.

While subsidies for agricultural insurance premiums are common in many countries and are an essential element in operating such systems, the situation where premiums are fully subsidized hampers farmers' awareness of the insurance. Moreover, there is little incentive for extension officers to actively promote agricultural insurance. To maintain a sustainable agricultural insurance system, it is necessary to implement a promotion system with a budget for activities such as dissemination. This will help ensure that farmers understand the benefits of the insurance and choose to participate, while still allowing the central government to provide a certain level of premium subsidy (e.g., 80%).

2) Absence of training and dissemination materials

As mentioned in “3.4 Field Survey on Understanding of Agricultural Insurance”, the level of understanding of agricultural insurance among agricultural extension officers is limited. Promoting agricultural insurance, it is necessary to improve the level of understanding of agricultural insurance among agricultural extension officers. Training activities and the use of promotional materials could be effective measures to address this issue. However, training for agricultural insurance promotion activities has not been established yet. In the previous JICA project, a TOT training program was implemented for agricultural extension officers in cooperation with the BPPSDMP and POSLATAN. This cooperation is limited after the JICA project, and there are no on-going training activities about agricultural insurance.

To address this issue, it is crucial to build a cooperative system that ensures agricultural insurance topics are included in the training programs organized by the MOA. It is also necessary to develop training materials and personnel to support this effort. Furthermore, dissemination of AUTP currently relies only on pamphlets. To enable extension officers to carry out their activities more effectively, it is important

to develop and maintain additional dissemination materials, such as websites and videos, that farmers can use to learn about AOTP.

3) Limited channels for disseminating agricultural insurance

As mentioned earlier, AOTP in Indonesia is promoted independently. This means that farmers can only join the program through extension officers. Therefore, when contact with extension officers is limited, opportunities to join AOTP are also restricted. To promote greater participation in AOTP, it is essential to create an environment where farmers can more easily access the program, not just through extension officers, but also through websites, mobile applications, and other channels. Expanding insurance promotion channels, such as enabling people to join AOTP through related organizations like financial institutions and post offices, in collaboration with other programs, is also crucial.

For example, financial institutions could work with JASINDO to develop and sell agricultural loan products together with agricultural insurance, or conduct farmers' registration for AOTP, and could be expected to play a role in promoting AOTP as an intermediary for insurance sales. In addition, in the collaboration between the post office and JASINDO, a system is currently being trialed that allows farmers without bank accounts to receive insurance payments at post offices. It is hoped that the areas eligible for such services will be expanded, and that the post office will play a role in not only giving insurance payouts, but also in processing insurance registration through the post office.

4.2.2 Recommendations

(1) Policy/ Regulations

1) Preparation and Issuance of a Presidential Decree on Agricultural Insurance

To facilitate the expansion of agricultural insurance in Indonesia, it is essential to pursue the issuance of a presidential decree on agricultural insurance under the leadership of BAPPENAS. Establishing such a decree will not only strengthen the legal foundation of agricultural insurance programs but also improve coordination and collaboration among ministries and relevant organizations. To create an environment conducive to addressing the key issues outlined in Section 4.1.1, it is crucial to establish a robust legal framework in the form of a presidential decree or an equivalent regulation.

The BAPPENAS previously discussed a draft of the presidential decree on agricultural insurance in 2022 during the implementation of the preceding JICA project. The draft decree explicitly defines the purpose, scope, and implementation structure of the agricultural insurance program. Particularly, it expands coverage to a wide range of agricultural products, including plantation crops, livestock, and horticultural crops, which goes beyond the current Ministerial Decree issued by the MOA.

Additionally, it allows state-owned enterprises to form a consortium with private insurance companies to administer the program. Another key feature is the establishment of an Agricultural Insurance Coordination Committee composed of representatives from relevant ministries, ensuring a more integrated approach to policy implementation.

The preparation of this presidential decree will also clarify the role of agricultural insurance within the broader policy framework of the new administration. While the timeline for its issuance remains uncertain, it is crucial for BAPPENAS to continue leading the process of refining and securing approval for the draft decree. Ensuring its implementation will be a significant step toward strengthening Indonesia's agricultural insurance system and fostering long-term sustainability in the sector.

2) Development of a Roadmap for Agricultural Insurance

A roadmap for agricultural insurance was developed in 2015, covering the period from 2015 to 2019. However, no new roadmap has been created since then, as BAPPENAS has focused on drafting the

presidential decree. While the draft presidential decree provides a general framework for agricultural insurance, it does not outline a concrete plan for its implementation. Therefore, it is essential to formulate a new roadmap that defines a clearer and more detailed direction for the development of agricultural insurance in Indonesia.

The updated roadmap should establish a more concrete implementation system for public-private partnerships, expand coverage to export crops such as coffee and cocoa, and identify priority areas for agricultural insurance, such as Kalimantan. The 2015 roadmap, which guided policy until 2019, emphasized key strategies, including the implementation of programs through state-owned or local public enterprises, the use of insurance premium subsidies to encourage participation, cooperation with reinsurance companies, and farmer education on agricultural insurance. Since no updates have been made since 2019, the development of a new roadmap is crucial to ensuring that all stakeholders share a common understanding of the future direction of agricultural insurance.

(2) Stakeholder Coordination

In agricultural insurance programs involving multiple organizations, establishing a coordination mechanism among stakeholders is essential. To facilitate this, it is important to create an Agricultural Insurance Coordination Committee at the central level. The draft presidential decree currently being prepared by BAPPENAS includes provisions for establishing such a committee. A Task Force team was proposed during JICA's previous project, yet the Task Force Team has not been formally established.

Given the uncertain timeline for the approval of the draft presidential decree, it is necessary to move forward with the establishment of the Agricultural Insurance Task Force as a separate initiative and engage in concrete discussions with relevant stakeholders. In particular, since collaboration with these stakeholders is crucial for developing a roadmap for agricultural insurance, the Agricultural Insurance Task Force can serve as a platform to advance both the draft presidential decree and the roadmap as tangible outputs. Additionally, private insurance companies and NGOs involved in agricultural insurance could be invited to participate in the Agricultural Insurance Task Force, providing a forum for sharing experiences and gathering input to refine the roadmap.

(3) Product Design

1) Introduction of Immediate Payment Cost Insurance for Rice Farmers

To operate a sustainable agricultural insurance system, it is essential to develop products that align with farmers' needs. In both the current AOTP and the preceding JICA project, it has been observed that insurance claims are frequently triggered during the planting season. This suggests a strong demand for cost compensation specifically during this period. Given this situation, an insurance policy could be designed to address farmers' need for early financial support due to planting failures, ensuring they can recover their costs and replant without significant delays.

Unlike the current AOTP, this proposed insurance would focus exclusively on the planting season and cover replanting costs. Structurally, it would be a low-cost plan built upon the existing AOTP framework, aiming to improve insurance penetration by lowering premiums and reducing dependence on government subsidies. The introduction of such immediate payment cost insurance is expected to have several key impacts:

- Stabilizing national production volumes by encouraging replanting,
- Improving AOTP profitability by mitigating yield losses through cost compensation,
- Accelerating the adoption of digital tools in agriculture through instant payouts, and
- Enhancing the sustainability of agricultural insurance operations by securing external capacity, including financial capacity for underwriting such as the capacity for insurance payouts.

In cost insurance schemes, there is typically a time lag between filing a claim and receiving payment, requiring farmers to use their own funds for replanting. To minimize financial strain and ensure planting proceeds without delay, it is crucial to establish an efficient claims process. Immediate payment functionality is essential for the success of cost insurance, which can be achieved by setting payment conditions based on actual loss assessments or by using an index trigger, such as rainfall data, for automated claims processing.

In recent years, Indonesian farmers have increasingly adopted digital tools that integrate crop cultivation management and financial services, provided by agri-tech companies such as Koltiva. By incorporating an insurance payout function into these digital platforms, claims could be processed and paid instantly, significantly reducing time delays and administrative costs. Additionally, leveraging digital tools offers further advantages, such as automatically setting insurance amounts based on planting expenses, leading to optimized coverage. Moreover, since these tools track the entire planting and cultivation process, they can help mitigate moral hazard by ensuring transparency when claims are triggered by reported planting failures.

- The insurance amount can now be automatically set based on the expenses incurred at the time of planting, leading to a more optimized coverage amount.
- Additionally, since the entire process from planting to cultivation can be monitored, this is expected to help reduce moral hazard when insurance payouts are triggered by reports of planting failure.

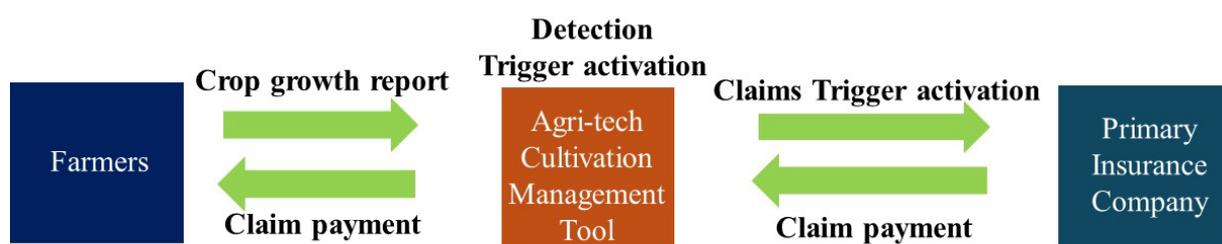


Figure 4.2.2 Image of Agri-Tech Utilization Scheme

Source: JICA Survey Team

To maintain stable insurance capacity, it is essential to determine which risks should be retained domestically and which should be transferred to external parties. One approach is to establish a new organization responsible for risk retention, structuring and managing reinsurance schemes, and monitoring and analyzing insurance income and expenditures. By leveraging reinsurance, such an organization would help ensure a stable supply of capital for insurance operations. This entity could take the form of either (1) a government insurance pool or (2) a captive company.

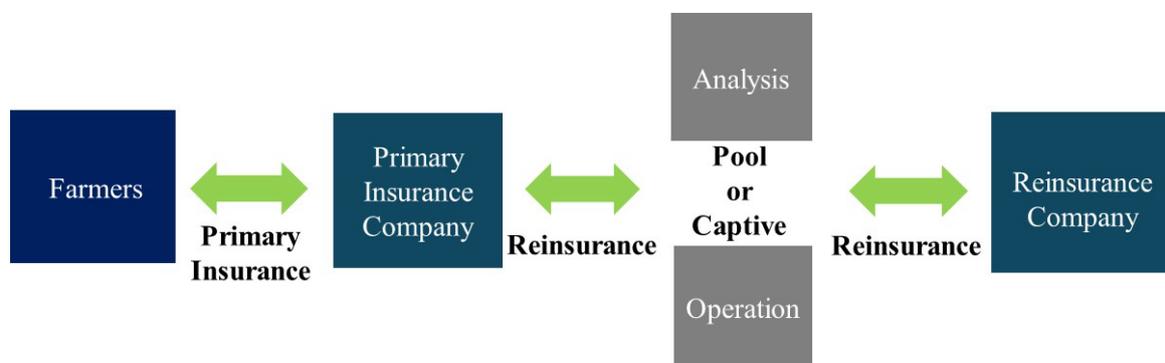


Figure 4.2.3 Image of Insurance Capacity Management

Source: JICA Survey Team

Beyond developing new insurance policies, there are alternative ways to introduce immediate payment

cost insurance. For example, it could be incorporated as a special clause within an existing AUP policy or designed as a replacement for the current AUP policy. The following illustrates the concept of creating a low-cost version of AUP by integrating it as a special clause within an AUP policy.

Table 4.2.1 Comparison of Current AUP with Immediate Payment Cost Insurance within AUP

| Payout Condition | Current AUP | AUP with Immediate Cost Payment Insurance Endorsement |
|--|--------------------------------|---|
| Claim in Early Planting Stage (Able to replanting) | Actual Yield Loss Compensation | Replanting Cost |
| Claim in other Stage (Unable to replanting) | | Actual Loss Compensation |

Source: JICA Survey Team

2) Introduction of Agricultural Insurance for Crops Other than Rice

In Indonesia, rice plays a crucial role in food security, and the government's agricultural insurance program primarily targets rice cultivation. However, the MOA also recognizes coffee and cocoa as key export crops, making it necessary to address the agricultural risks associated with these commodities. Given this, expanding agricultural insurance programs to include export crops like coffee and cocoa could be a viable option in the future.

Currently, some private companies in Indonesia are already providing agricultural insurance for coffee and cocoa farmers. This demonstrates the potential for broader insurance coverage beyond rice. Considering this, it is essential to develop agricultural insurance programs for these crops through a public-private partnership model. By fostering collaboration with private companies, it would be possible to establish and operate more efficient insurance schemes tailored to the needs of different agricultural sectors.

(4) Technology

The use of remote sensing (RS) technology has the potential to greatly enhance transparency and reduce costs in Indonesia's agricultural insurance sector. Specifically, RS technology not only improves the accuracy of weather index insurance based on traditional meteorological data but also enables more precise predictions of crop growth conditions and yields. This leads to faster and fairer insurance claim payments, strengthening farmers' trust in the system. Furthermore, as AI-driven data analysis becomes more sophisticated, risk assessment is expected to improve, thereby enhancing the long-term sustainability of agricultural insurance.

In Indonesia, BRIN is a key organization conduct technical research for promoting agricultural insurance. In addition to BRIN, other related organizations such as government agencies (BSIP SDLP, and BPS) and academic institutions (IPB and ITB) are conducting research related to growth monitoring and yield prediction using remote sensing technologies such as satellites and UAVs. However, these research activities are being carried out independently by each organization. The results of research activities have not been shared among the related organizations. It would be desirable to establish a system that allows for technological collaboration and the maximization of research impact, such as by establishing a consortium for the utilization of remote sensing technologies with the common goal of food security and further development agricultural insurance.

It is important to emphasize the point that while remote sensing technology is effective for supplementing measured data, and it must be combined with data collection in the field. In the AYII pilot project conducted in 2021/2022, it was determined that improvements were needed in this regard due to the lack of transparency regarding the survey methods and data accuracy of the CCE. In addition, the use of remote sensing data requires an initial investment and specialists with data analysis skills, it is

necessary to work on human resource development and to improve the transparency and accuracy of the process of acquiring collected data. If such efforts are promoted, the operational efficiency of agricultural insurance will improve, and as a result, insurance premiums will also decrease.

From the above, technical development through pilot projects, capacity development of surveyors, etc., and securing human resources are necessary to promote further utilization of remote sensing technologies in agricultural insurance. In addition, some of the private insurance companies have already introduced weather index insurance products. Establishment of a collaboration system with the private sector is also important for further technological development for agricultural insurance. However, the introduction of RS technology alone is not sufficient to fully improve agricultural insurance; enhancing the accuracy of measured data is also crucial. While RS technology is valuable for supplementing measured data, it cannot replace on-the-ground data collection. Additionally, utilizing RS data requires initial investment and specialized analytical skills, making collaboration between government agencies and private companies essential for technical development and capacity building. By promoting these efforts, the operational efficiency of agricultural insurance can be improved, ultimately leading to lower insurance premiums.

(5) Literacy/ Awareness

1) Strengthening Dissemination of Educational Materials and Information

Farmers' understanding and awareness of agricultural insurance remain relatively low, largely due to the limited availability of information. Currently, agricultural extension officers serve as the primary point of contact for farmers regarding the registration of agricultural insurance. To address this issue, proactive dissemination of information is essential. For instance, training materials on agricultural insurance, policyholder performance data, and FAQs could be made more accessible through the MOA's websites and other digital platforms.

2) Implementation of Training Related to Agricultural Insurance

Limited awareness and understanding of agricultural insurance are not only prevalent among farmers but also among agricultural extension officers. To enhance farmers' awareness and willingness to participate in agricultural insurance, extension officers must be equipped to conduct effective outreach activities. Establishing a system for the continuous training of agricultural extension officers would help improve their ability to communicate the benefits of agricultural insurance and promote informed decision-making among farmers.

3) Building a Sustainable Extension System Independent of Subsidies

Under the government's agricultural insurance program, 80% of insurance premiums are subsidized. However, in practice, local government budgets often cover the remaining 20%, meaning that in many areas, farmers receive full subsidies for their premiums. While government subsidies play a crucial role in expanding agricultural insurance, fully subsidizing premiums makes it difficult for extension officers to raise awareness and incentivize farmers to actively participate.

To create a more sustainable system, it will be necessary for farmers to contribute a portion of their insurance premiums in the future. This could be achieved by introducing bundled promotion models to streamline premium collection, such as combining agricultural insurance with the sale of farming inputs. Another approach could involve adjusting subsidy rates based on farmers' income levels and the scale of their agricultural operations, ensuring a more equitable and self-sustaining insurance system.

4.3 Indonesian Government's Action Points to Promote Agricultural Insurance

As shown in 4.2.1, agricultural insurance in Indonesia faces a wide range of challenges. By prioritizing these challenges, the key issues that government agencies should address can be summarized as follows: 1) strengthening the agricultural insurance implementation system, 2) enhancing awareness and understanding of agricultural insurance among farmers and relevant stakeholders, and 3) promoting agricultural insurance operations that align with farmers' needs.

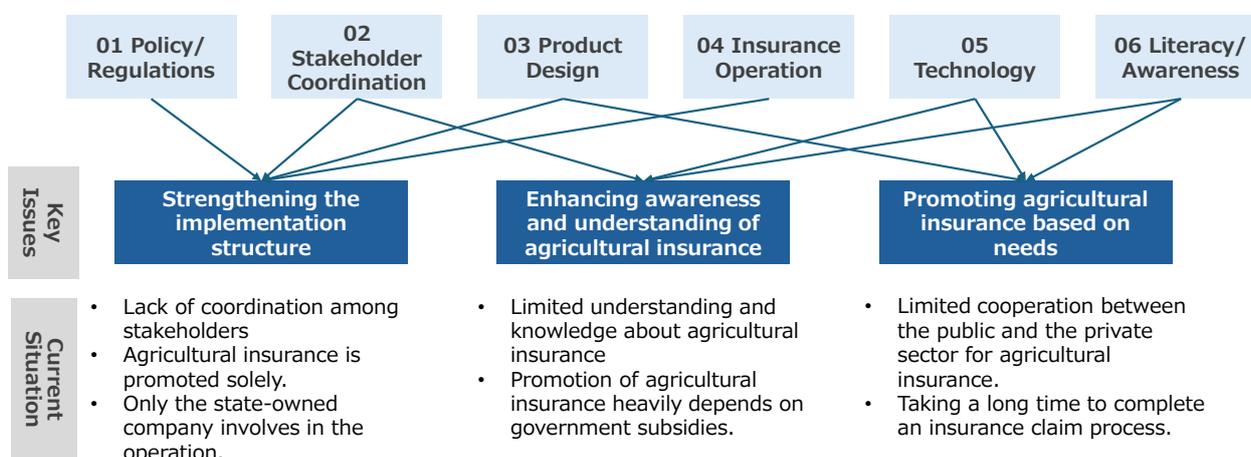


Figure 4.3.1 Identification of Challenges for Promoting Agricultural Insurance in Indonesia

Source: JICA Survey Team

The Survey Team conducted three workshops with relevant stakeholders to discuss the direction that should be taken to address the above three key issues in promoting agricultural insurance in Indonesia. Below is a summary of the recommended direction for the Indonesian government.

Table 4.3.1 Key Issues and Directions for Promoting Agricultural Insurance

| Key Issues | Short-Term Direction (- 2 years) | Mid-Term Direction (3-5 years) | Long-Term Direction (6 years -) |
|---|---|--|---|
| Strengthening Implementation Structure of Agricultural Insurance | <ul style="list-style-type: none"> Establishment of an Agricultural Insurance Task Force: Forming a committee with members from relevant government ministries. Development of an Agricultural Insurance Roadmap: Creating a roadmap that includes specific measures and a timeline for the implementation of agricultural insurance and a draft Presidential Decree. | <ul style="list-style-type: none"> Strengthening Agricultural Insurance Promotion: Enhancing agricultural insurance promotion within the government and fostering inter-agency collaboration through a presidential decree, including agricultural insurance roadmap or other legal framework to strengthen agricultural insurance promotion. Promotion of Agricultural Insurance: Promoting agricultural insurance through collaboration with agricultural input suppliers and other agricultural programs. | <ul style="list-style-type: none"> Expansion of Agricultural Insurance: Expanding agricultural insurance through public-private partnerships with private insurance companies, agricultural service providers, financial institutions, and other relevant stakeholders. |

| Key Issues | Short-Term Direction (- 2 years) | Mid-Term Direction (3-5 years) | Long-Term Direction (6 years -) |
|---|---|---|--|
| Enhancing Understanding and Knowledge about Agricultural Insurance | <ul style="list-style-type: none"> • Securing a budget for agricultural insurance activities and ensuring the continuous implementation of agricultural insurance programs. • Establishing a system for implementing training programs related to agricultural insurance. | <ul style="list-style-type: none"> • Implementing ongoing agricultural insurance training by integrating it into programs run by the Ministry of Agriculture. | <ul style="list-style-type: none"> • Diversifying agricultural insurance dissemination channels through collaboration with private service providers, agribusiness companies, financial institutions, and other relevant partners. |
| Promoting Agricultural Insurance based on Farmers' Need | <ul style="list-style-type: none"> • Continuation of studies on the use of remote sensing technology in the agricultural insurance sector. • Expansion of agricultural insurance programs in collaboration with postal services, along with continuous reviews of business processes. | <ul style="list-style-type: none"> • Introduction of agricultural insurance products for new crops. | <ul style="list-style-type: none"> • Diversification of agricultural insurance products through public-private partnerships with private insurance companies, agricultural service providers, financial institutions, and other relevant stakeholders. |

Source: JICA Survey Team

Among these measures taken by the Indonesian government, the key ones that should be implemented by 2025 are outlined below as action points. These action points will also serve to externally demonstrate the implementation of agricultural insurance amid the launch of the new administration and the introduction of various new policies. During the third workshop, these action points were agreed upon among the relevant institutions.

Table 4.3.2 Action Points of Each Stakeholder in 2025

| Key Issues | Action Points in 2025 based on Current Condition | Responsible Organization |
|---|---|--|
| Strengthening Implementation Structure of Agricultural Insurance | <ul style="list-style-type: none"> • Establishment of the Agricultural Insurance Task Force: The Task Force will primarily consist of BAPPENAS, MOA, and JASINDO. Depending on the topics of discussion, it will also serve as a platform for consultations with NGOs and private companies involved in the agricultural insurance sector. • Roles of the Agricultural Insurance Task Force: Through this Task Force, (1) the drafting of a Presidential Decree or other legal frameworks related to agricultural insurance, and (2) the formulation of an agricultural insurance roadmap will be undertaken. | <ul style="list-style-type: none"> • BAPPENAS |
| Enhancing Understanding and Knowledge about Agricultural Insurance | <ul style="list-style-type: none"> • Securing Budget and Ensuring Continuous Implementation of Agricultural Insurance Programs: As of January 2025, the availability of the budget for agricultural insurance in the fiscal year 2025 remains uncertain. • Priority for 2025: Securing the budget for agricultural insurance in the fiscal year 2026 should be a priority task to be undertaken during 2025. | <ul style="list-style-type: none"> • MOA |

| | | |
|--|---|---|
| Promoting Agricultural Insurance based on Farmers' Need | <ul style="list-style-type: none"> Continued Examination of Remote Sensing Technology Utilization in the Agricultural Insurance Sector: JASINDO is already exploring the use of remote sensing technology for loss assessment in collaboration with BRIN. This collaboration will continue, and further considerations regarding the application of this technology will be carried out. | <ul style="list-style-type: none"> JASINDO |
|--|---|---|

Source: JICA Survey Team

4.4 Proposed Direction and Project Components of JICA's Future Cooperation for Agricultural Insurance Promotion

4.4.1 Proposed Direction

In this section, the direction of JICA's support is summarized based on the key challenges and recommendations described in this chapter.

1) Institutional Design and Policy Support

- **Support for the formulation of an agricultural insurance roadmap:** The Indonesian government is currently planning to establish an Agricultural Insurance Task Force. This Agricultural Insurance Task Force is expected to discuss the legal framework for agricultural insurance and formulate a specific roadmap. The formulation of this roadmap will include details of the specific initiatives to be implemented and their order. JICA can support the creation of a more specific and feasible roadmap, based on the results of this study.
- **Strengthening the operation of the Agricultural Insurance Task Force:** Expanding agricultural insurance requires establishing a legal framework and roadmap through the Agricultural Insurance Task Force. To ensure the Agricultural Insurance Task Force can produce the required outputs, strengthening the capacity of its members is essential. The main members of the Agricultural Insurance Task Force will be the government implementing agencies, such as BAPPENAS, MOA, and JASINDO. These members are required to have 1) the ability to formulate policies and regulations for agricultural insurance systems, 2) the ability to coordinate and collaborate with private insurance organizations, etc., and 3) the ability to plan and implement agricultural insurance operation design and evaluation and formulation of agricultural insurance extension strategy.
- Strengthening these capacities, training programs should be considered to learn about the operational and extension systems of agricultural insurance in other countries such as Thailand and the Philippines. Also, India and Turkey could be good examples to learn about public-private partnership schemes and implementation of index-based insurance. Furthermore, it is possible to consider support for deepening knowledge of external funding mechanisms, such as the InsuResilience Solution Fund (ISF), as well as risk-transferring mechanisms like SEDRIF in the ASEAN region.
- **Raising awareness of agricultural insurance among policymakers:** Expanding agricultural insurance requires increasing the understanding of policymakers and central government officials in addition to farmers and extension officers. Strengthening the capacity of policymakers through training in Japan, third-country training, and case studies is crucial for raising awareness and accelerating agricultural insurance expansion.

2) Insurance Product Development and Market Expansion

- **Support for introducing new index insurance products for crops other than rice:** Promoting agricultural insurance in Indonesia requires developing sustainable products that meet the diverse needs of farmers. JICA could consider supporting a pilot project for introducing index insurance for export crops such as coffee and cocoa, which private companies have already tested. This initiative could be part of technical cooperation. Particularly, a pilot project should be implemented

in collaboration with AAUI, involving private insurance companies. Through a pilot project targeting new crops, it is expected to expand the agricultural insurance market in Indonesia by providing technical support and sharing experience with private insurance companies through AAUI. In addition, the Agricultural Insurance Task Force could strengthen the capabilities of their members through the implementation of a pilot project.

- **Support for implementing agricultural insurance dissemination models:** The agricultural value chain involves various organizations, including farmers, crop buyers/off-takers, agribusiness companies, farmer groups, financial institutions, and agricultural service providers. Support can be provided to create agricultural insurance dissemination models that bring together these diverse stakeholders in both the public and private sectors. Establishing such models will be critical for developing more sustainable agricultural insurance programs that do not rely on subsidies. However, constructing this model will require time for coordination with various stakeholders, so ensuring sufficient cooperation time and flexibility in adjusting the content of cooperation is essential.

3) Raising Awareness and Strengthening the Capabilities of Farmers and Extension officers

- **Strengthening the agricultural insurance dissemination system:** To strengthen the dissemination system, JICA can help develop trainers in agricultural insurance and improve training programs in collaboration with BBPSDMP and PULAAN. Trainees from BBPSDMP and PULAAN are being trained as master trainers in the area of agricultural insurance, and training programs for extension officers should be developed. Particularly, support for strengthening dissemination efforts can be focused on new paddy field development areas, particularly those aligned with Indonesian government agricultural policies. Agricultural extension officers will play a role in the promotion of agricultural insurance nationwide; yet it is necessary to prioritize strengthening insurance promotion activities based on the government policies. Additionally, JICA could support the development of training programs using e-learning technology or implement awareness-raising measures for extension officers and farmers through mobile applications.

4.4.1 Proposed Project Component

In the future, as JICA moves forward with its cooperation, it is expected to support agricultural insurance that the Indonesian government should take on its own initiative, as outlined in "4.3. Indonesian Government Measures to Promote Agricultural Insurance." The following summarizes the JICA Survey Team's proposals for the potential project component.

Table 4.4.1 Proposed Project Components

| No. | Main Topic | Overview | Cooperation Scheme |
|-----|--|--|-----------------------|
| 1 | Strengthening Capacity of Agricultural Insurance Expansion for Food Security Enhancement | <ul style="list-style-type: none"> ● To establish a sustainable operating structure for agricultural insurance, support will be provided for promoting the approval process of presidential decree on agricultural insurance and formulating a roadmap. ● While offering policy support, pilot projects will be implemented for new insurance products, such as the development of insurance for crops other than rice, the introduction of new index-based insurance, and immediate payment cost insurance. The lessons learned from these pilot projects will be used to finalize the roadmap. ● To strengthen the capacity of agricultural insurance stakeholders, efforts will focus on enhancing the operation of the Agricultural Insurance Task Force, providing training for policymakers in Japan or third | Technical cooperation |

Data Collection Survey on Promotion for Introduction of Agricultural Insurance in Indonesia

| No. | Main Topic | Overview | Cooperation Scheme |
|-----|--|--|--|
| | | <p>countries, holding seminars for practitioners, establishing a training system, and developing educational materials and applications for farmers.</p> <ul style="list-style-type: none"> When providing the above support, activities should be carried out in regions different from those of the previous JICA project and focused on priority target regions, such as new paddy field development areas being promoted by the Indonesian government. | |
| 2 | Promoting Agricultural Insurance through Public-Private Partnership | <ul style="list-style-type: none"> Support will be provided to strengthen the agricultural insurance dissemination system, considering public-private partnerships. Activities will be carried out in collaboration not only with insurance companies but also with insurtech and agri-tech companies. Lessons learned from building a system through public-private partnerships will be extracted and compiled into recommendations for further strengthening these partnerships. While this initiative can be implemented as a technical cooperation scheme, it may also be integrated as a component of other agriculture-related projects rather than as a standalone technical cooperation project. If Japanese companies or tech firms are expected to contribute to the agricultural insurance sector, support can also be provided through JICA's public-private partnership, private sector investment finance, or loan schemes. | Technical cooperation Public-private partnership, Private sector investment finance ODA Loans |
| 3 | Promoting Agricultural Financial Services for Smallholder Farmers | <ul style="list-style-type: none"> In many countries, agricultural insurance is promoted alongside agricultural loans. However, in Indonesia, agricultural insurance is sold independently, and small-scale farmers have limited access to agricultural finance. To address this issue, efforts will be made to improve small-scale farmers' access to agricultural finance. Specifically, support will be provided for technical training for financial institutions and insurance companies, the development of agricultural loan products with agricultural insurance, and financial literacy and insurance education for farmers. While this initiative does not directly support agricultural insurance, it could be implemented as a component of an agricultural two-step loan through yen loans or as a technical cooperation project linked to a loan program in the agricultural sector. | Technical cooperation ODA Loans |
| 4 | Strengthening Agricultural Risk Management for Food Security Enhancement | <ul style="list-style-type: none"> Farmers face various agricultural risks, including those posed by climate change. Strengthening their agricultural risk management is essential for ensuring stable food production. Agricultural risk management encompasses a series of measures aimed at reducing instability in agriculture and stabilizing farm operations. It consists of two key components: risk control and risk finance. Risk control measures include the introduction of improved crop varieties, pest and disease management, crop diversification, and the enhancement of irrigation facilities. Meanwhile, risk finance involves mechanisms such as agricultural insurance and savings. By integrating agricultural technology support with the promotion of agricultural insurance as climate- | Technical cooperation |

Data Collection Survey on Promotion for Introduction of Agricultural Insurance in Indonesia

| No. | Main Topic | Overview | Cooperation Scheme |
|-----|---|---|------------------------------|
| | | <p>smart agriculture, it is expected to effectively enhance farmers' ability to manage agricultural risks.</p> | |
| 5 | <p>Enhancing Agricultural Data Management through Promoting Smart Agricultural Technologies</p> | <ul style="list-style-type: none"> ● In the field of agricultural insurance, the use of remote sensing technology and other advanced methods is under consideration. However, for these technologies to be effectively implemented, accurate agricultural data and statistical information are essential. Reliable agricultural statistics will also enable a more precise assessment of agricultural risks, allowing for the more effective operation of agricultural insurance programs. ● To address this need, we will establish a system that enables the efficient and accurate collection of agricultural data and statistical information by leveraging smart agricultural technologies. ● Although this initiative does not directly support agricultural insurance, strengthening the agricultural statistics system will have significant long-term benefits. | <p>Technical cooperation</p> |

Source JICA Survey Team

Appendix

1. Workshop Proceedings

The Proceedings of the First Workshop:

Data Collection Survey on Promotion for Introduction of Agricultural Insurance in Indonesia

Date and Time : 28 October, 2024 from 9.30 to 12:00

Venue : Ashley Hotel Jakarta

1. Background

The Indonesian government has prioritized food security as a central issue in its national long-term development plan. To address this, in 2013, it enacted the Law on Farmer Protection and Empowerment and has since been actively promoting the Agricultural Insurance Program for Rice Crops (AUTP).

Building on this, from 2017 to 2023, human resource development initiatives for agricultural insurance dissemination and a pilot project for a new insurance product, Area-Yield Index Insurance (AYII), were implemented through the JICA-supported "Project for Capacity Development for the Implementation of Agricultural Insurance (CDIAI)."

Despite these efforts, agricultural insurance dissemination remains limited, with only about 5% of paddy acreage covered. Expanding agricultural insurance will require addressing four key issues: 1) enhancing cooperation and coordination among stakeholders, including government and the private sector; 2) designing insurance products tailored to farmers' needs; 3) increasing awareness and understanding of agricultural insurance among farmers and government officials; and 4) establishing an efficient system for widespread dissemination of agricultural insurance.

This workshop is held to foster a shared understanding among relevant organizations about the future direction of agricultural insurance in Indonesia. Additionally, this workshop aims to promote mutual dialogue to encourage the active involvement of participants engaged in agricultural insurance, who come from diverse backgrounds in Indonesia. Each participant will engage in group discussions and interactive sessions to clarify the interests of each party, promote mutual understanding, and encourage each relevant organization to actively participate in the workshop with a sense of ownership.

2. Objectives

The objectives of this workshop are as below:

- 1) Foster a shared understanding among relevant organizations regarding the future direction of agricultural insurance in Indonesia.
- 2) Promote mutual dialogue among participants from diverse backgrounds to encourage active involvement in agricultural insurance initiatives.
- 3) Facilitate group discussions and interactive sessions for participants to clarify each party's interests.
- 4) Enhance mutual understanding among organizations involved in agricultural insurance.

3. Workshop Agenda

The detailed workshop agenda can be seen on the following table:

Table 1. Workshop Agenda

| Time | Agenda | Remarks |
|---------------|--|--|
| 9:30 – 9:40 | Opening Remarks | Director of Agriculture and Food, BAPPENAS |
| 9:40 – 9:55 | Part I: Introduction of the JICA Survey <ul style="list-style-type: none">• Survey Approaches and Contents• Survey Schedule and Outputs | JICA Survey Team |
| 9:55 – 10:05 | Q&A and Discussion | - |
| 10:05 – 10:20 | Part II : Agricultural Insurance in Indonesia <ul style="list-style-type: none">• Policy Directions: Agricultural insurance in Indonesia | BAPPENAS |
| 10:20 – 10:35 | <ul style="list-style-type: none">• Agricultural insurance operations: Key issues and challenges | MoA |
| 10:35 – 10:50 | <ul style="list-style-type: none">• Agricultural insurance: Underwriting performance and key issues | JASINDO |
| 10:50 – 11:00 | Q&A and Discussion | - |
| 11:00 – 11:15 | Part III: Case Studies in Other Countries <ul style="list-style-type: none">• Agricultural Insurance in the ASEAN region | JICA Survey Team |
| 11:15 – 11:30 | Possible Directions of Agricultural Insurance in Indonesia | JICA Survey Team |
| 11:30 – 11:45 | Q&A and Discussion | - |
| 11:45 – 12:00 | Closing remarks | JICA HQ Dr. Kawanishi Masato |

4. Workshop Summary

4.1 Opening

The first workshop on the Promotion for the Introduction of Agricultural Insurance in Indonesia was opened by Noor Avianto, representing the Director of Food and Agriculture at BAPPENAS. On his remarks, Noor Avianto delivered several points, including:

- The background of the JICA survey activities related to the second phase of the Agricultural Insurance project in Indonesia. In May 2024, JICA and BAPPENAS held a coordination meeting to discuss the continuation of the JICA project. However, various concerns from stakeholders need to be addressed.
- The Ministry of Agriculture highlighted the importance of farmers' literacy, resource limitations (such as funding and human resources), development of insurance products for other commodities, and the involvement of financial institutions.
- BAPPENAS emphasized the need for budget security, a study on other insurance products, strengthening the capacity of the inter-ministrial coordination team, and increasing farmers' awareness for agricultural risk management.
- The Central Bureau of Statistics (BPS) identified challenges in utilizing harvest data, the costs of conducting the Crop Cutting Experiment (CCE), and the need to confirm insurance product preferences within the community.
- JASINDO, as the program implementer, highlighted the need to improve the accuracy and transparency of harvest data, establish a clear technical structure for conducting the CCE, increase farmers' awareness of agricultural insurance, and integrate the program with

agricultural inputs. Meanwhile, the local government (both provincial and district) expressed readiness to implement this pilot project, though improvements in data availability and accuracy are still needed.

- Based on these issues, JICA and BAPPENAS recognized the need for a further survey to capture all concerns and find solutions, including inviting the private sector, academic institutions, and NGOs.
- The survey also aims to achieve several key objectives: raising awareness and understanding of its benefits, and developing an effective project design for its implementation.
- Mr. Noor Avianto also presented the newly inaugurated President's vision and mission, which include strengthening the national defense and security system and promoting national self-sufficiency in food, energy, water, Sharia economy, digital economy, green economy, and blue economy.
- To achieve this vision and mission, several strategies have been outlined: 1) Developing and increasing agricultural land productivity through village, regional, and national food barns, 2) Ensuring the direct availability of fertilizers, seeds, and pesticides to farmers, 3) Providing financing for farmers, livestock breeders, and fishers through banks, cooperatives, and other non-bank financing institutions, including startups to support easy and quick access in strengthening capital structure, ensuring business continuity, business development, and expanding insurance coverage for farmers, breeders, and fishers, 4) Modernizing agricultural business models, agribusiness trade systems, and marketing systems in the agricultural sector through technological innovation.
- Mr. Noor Avianto also elaborated on the roadmap for agricultural insurance in Indonesia. Within Indonesia's long-term and medium-term development plans, the government has established several national priorities, one of which emphasizes food resilience and self-sufficiency. In this context, three critical concepts emerge: food sovereignty, food resilience, and food self-sufficiency.
- Among the priorities identified to support food security are strengthening food management, ensuring consistent food availability, and enhancing the quality of food consumption. A key agricultural focus is to secure food availability by advancing an agricultural sector that is both economically viable and environmentally sustainable.
- Moving forward, several initiatives will be implemented, including ensuring the availability of agricultural inputs, promoting good agricultural practices through sustainable methods, encouraging generational renewal in farming, and expanding economic scale. Central to this effort is the modernization and digitalization of agriculture, which will involve innovation, technology adoption, increasing added value, and enhancing access to financing, including agricultural insurance.

4.2 Presentations

In this workshop, key stakeholders—including the JICA Survey Team, the Directorate of Agricultural Financing as the program owner of agricultural insurance in Indonesia, and JASINDO as the implementing insurance company—were given the opportunity to present the implementation and issues related to agricultural insurance.

1) Introduction of the JICA Survey Team

The first presentation was delivered by the JICA Survey Team on the topic “Introduction of the JICA

Survey,” covering survey approaches and contents, as well as the survey schedule and expected outputs. Mr. Hirayama Kota as the team leader of the JICA Survey Team delivered the key points included:

- The Survey aims to build a common vision for agricultural insurance in Indonesia among stakeholders and to explore future collaboration opportunities between JICA and Indonesia in food security and agricultural insurance strategies.
- The Survey scope includes clarifying the current status and issues of agricultural insurance, as well as identifying the needs and future challenges in promoting agricultural insurance in Indonesia.
- The Survey start from September 2024 to February 2025, involving collaboration with key agencies such as MOA, BAPPENAS, the Ministry of Finance, JASINDO, OJK, BPS, provincial agencies, private companies, and international development partners.
- The field survey will focus on West Java and Central Java, while the overall scope is nationwide.
- The Survey focuses on five key aspects, starting with policy clarification on the role of food security and agricultural insurance, including a review of Area Yield Index Insurance (AYII) based on previous pilot activities. It will also assess crop-cutting experiments, yield measurement methods, private sector involvement, and the potential for new technologies to improve agricultural insurance operations.
- The Purpose of field survey to assess knowledge and experience regarding agricultural insurance at the field level. Additionally, there will be follow-up actions on recommendations from a previous JICA technical cooperation project. Alongside these activities, a series of workshops will be organized to discuss challenges, share insights, and explore future directions for promoting agricultural insurance in Indonesia.
- The Survey will focus on the items related to the agricultural insurance scheme, involving collaboration with various agencies. In addition to government entities, the survey aims to engage with private and non-government sectors such as insurance companies, tech firms, financial institutions, NGOs, and development partners.
- The Survey has couple of objectives, including: First, it aims to develop recommendations for promoting agricultural insurance in Indonesia by coordinating the interests of diverse stakeholders and identifying the most appropriate scheme. Second, it seeks to conduct efficient surveys by leveraging existing materials and similar survey results, including engaging consultants from a previous project and utilizing its findings.

2) Agricultural insurance: Underwriting Performance and Key Issues

In the presentation represented by Mr. Dicky Angga Kusuma, JASINDO delivered the background of the government insurance program, legal foundation, insurance model, and challenges faced. Some of the points presented by the JASINDO Team are outlined below:

- For the past nine years, JASINDO has implemented an Agricultural Insurance program, providing compensation for crop losses due to drought, flooding, pests, and plant diseases. The main challenges for this program are increasing awareness among Indonesian farmers about the benefits of insurance and managing the widely dispersed agricultural land, including in remote areas.
- JASINDO currently offers an indemnity-based Agricultural Insurance, such as the Rice Farming Business Insurance (AUTP) and Cattle and Buffalo Insurance (AUTSK), as well as an index-based Agricultural Insurance, specifically the Area-Yield Based Index Insurance (IHPPBA).

The IHPPBA program, a collaboration between JASINDO, JICA, the Ministry of Agriculture, and BAPPENAS, was piloted in 2023 in Karawang (West Java) and Kendal (Central Java). In addition, JASINDO offers other agricultural insurance products like Corn Insurance and Shallot Insurance. JASINDO is also exploring and developing insurance for other commodities, including Tobacco, Coffee and Cocoa, and Sugarcane.

- The participation of paddy fields in the Agricultural Insurance Program (AUTP) in Indonesia is relatively low, averaging between 3% and 6% of the national rice fields. Several factors contribute to this limited participation, including a constrained program budget, which relies heavily on government subsidies that cover 80% of premium payments, capped at 1 million hectares per year. Additionally, the recent refocusing of the national budget (APBN) and the fact that the AUTP is still considered a pilot program have impacted its expansion.
- Historical data from the AUTP implementation period, spanning from 2015 to 2024, reveals that the highest number of farmer participants occurred in 2017, with 1,550,389 individuals, while the largest land area covered by the program was recorded in 2020, reaching 1,000,001.37 hectares. The average claims ratio during this period was 70.9%. However, over the last four years, there has been a noticeable decline in the area of land participating in the AUTP, ranging from 300,000 to 400,000 hectares. To ensure the program's sustainability, JASINDO is actively working on improving land selection processes and enhancing outreach efforts to increase farmer participation.
- Agricultural insurance faces several obstacles and challenges that hinder its effectiveness. One significant issue is the limited and uncertain availability of the AUTP premium assistance budget, which the government allocates for only 1 million hectares per year—far below the national paddy area. This situation is compounded by the potential for budget refocusing, as the AUTP budget falls under the Ministry of Agriculture, where its usage must align with the ministry's work programs. Additionally, farmers' willingness to pay the 20% premium is low, with many relying heavily on assistance from regional governments or agricultural partners to cover this cost.
- Furthermore, land selection processes can be problematic, as farmers who choose to participate independently often cultivate high-risk lands. Regional governments tend to prioritize these high-risk areas for AUTP registration, which can lead to uneven coverage. The program also requires a sufficient number of field officers to manage these efforts effectively. Complicating matters further, AUTP land currently lacks defined land polygons, making it difficult to ascertain the exact area covered, which necessitates re-measurement during the claims process. These challenges must be addressed to enhance the viability and reach of agricultural insurance programs in Indonesia.
- The Area-Yield Index Insurance (AYII) program faces several obstacles and challenges that impede its effectiveness. One significant issue is that the Crop Cutting Experiment (CCE) process lacks a time limit, leading to prolonged claims processing times. Additionally, inadequate coordination between farmers and the agricultural office regarding harvest schedules often results in missed tiling processes because the crops have already been harvested. There is also a general lack of understanding about the AYII, which can further hinder participation and effectiveness.
- The proposed plan for the implementation of agricultural insurance focuses on several key initiatives aimed at enhancing the program's effectiveness and reach. First, it is recommended that the pilot project be made mandatory with full area coverage, ensuring that all agricultural land receives protection benefits and supporting national food security programs. Currently, the

premium structure consists of an 80% subsidy from the government and a 20% contribution from farmers; however, it is proposed that this be adjusted to a 100% subsidy for all smallholder farmers. This change would provide budget certainty, eliminate risks associated with budget refocusing or lack of absorption, and remove the need for land selection, thereby offering comprehensive protection for the agricultural sector against climate change.

- Additionally, the plan advocates for a transition from manual services to digital services to improve efficiency and quality of service. By leveraging geospatial map data and remote sensing technology, the acceptance process can become more precise and accurate. The digitalization of claims processing will facilitate quicker and more accurate claims, leading to faster payments. Furthermore, the collected land data can be utilized by the government for various purposes, such as disaster management, harvest production tracking, farmer distribution analysis, and optimizing assistance for fertilizers and seeds, ultimately fostering a more resilient agricultural sector.
- The implementation of the Agricultural Business Insurance (AUTP) program has been significantly enhanced through a recent cooperation agreement signed on May 28, 2024, between PT Asuransi Jasa Indonesia and PT POS Indonesia. This collaboration focuses on improving the policy distribution and claims payout processes. The policy distribution process begins with the handover of the policy delivery package from the Regional Office (RO) to the POS courier, with the RO uploading the receipt to the SIAP application to facilitate payment for the group APP policy delivery service. Following the handover, all SIAP users can track the policy's distribution to the Head of the Farmer Group, ensuring transparency and accountability.
- The Head then informs AUTP participant members about the policy details, obtaining signatures from all involved. Once the signatures are collected, the documents are returned to the designated envelope and submitted to the agricultural extension officers (PPL). The PPL then gathers these documents at the UPTD/BPP sub-district office, where the office address is entered into the SIAP application for document pickup. Finally, POS Indonesia couriers collect the documents from the UPTD/BPP sub-district office and deliver them to Asuransi JASINDO, streamlining the entire process and ensuring efficient communication and distribution within the AUTP framework.

3) Agricultural insurance operations: Key issues and challenges

The presentation from the Directorate of Agricultural Financing, Ministry of Agriculture, outlined the achievements and challenges faced in the implementation of agricultural insurance in Indonesia, particularly regarding the government's agricultural insurance program, such as the Rice Farming Business Insurance (AUTP). This presentation was delivered by Mr. Siswoyo, the coordinator of the agricultural insurance program, who represented the director of agricultural financing. During his presentation, Siswoyo highlighted several key points, including:

- National Realization of Rice Farming Business Insurance (AUTP): From 2015 to 2024, the AUTP program registered a total of 8,999,410 farmers, providing vital support to the agricultural sector. During this period, the program insured an impressive land area of 5,846,491 hectares, reflecting its significant impact on enhancing food security and stabilizing the livelihoods of farmers across the nation.
- National Realization of Livestock Business Insurance (AUTS/K): Between 2016 and 2023, the AUTS/K program registered a total of 318,826 breeders, providing essential coverage for the livestock sector. During this timeframe, the program insured 648,131 heads of livestock, demonstrating its critical role in safeguarding the livelihoods of breeders and promoting the sustainability of the agricultural industry. This insurance initiative not only mitigates risks

associated with livestock farming but also contributes to the overall food security of the nation.

- **Issues and Challenges in the Implementation of Agricultural Insurance:** The implementation of agricultural insurance faces several significant issues, including farmers' low willingness to pay premiums, incomplete and invalid land databases, and prolonged claim payout processes. Additionally, the diversity of agricultural insurance products across various commodities and types—such as indemnity and parametric insurance—adds complexity to the system.
- To overcome these hurdles, several key challenges must be addressed: raising awareness among farmers about the benefits of insurance, utilizing geospatial data to enhance the accuracy of land information, and developing affordable and accessible insurance programs. Furthermore, it is crucial to establish a straightforward and efficient claims process while continually innovating and expanding agricultural insurance product offerings to better serve the needs of farmers.
- Currently, the data input process for the Rice Farming Insurance Program (AUTP) still involves collaboration with field extension officers, who play a crucial role in registration and damage assessment recommendations. The use of the SIAP application in data input faces challenges, including the turnover of extension officers that requires account updates and complaints regarding the increased workload.
- Additionally, human resources at JASINDO are limited, necessitating assistance from extension officers for registration and data input. Another challenge is the lack of data for damage assessment, which results in a time-consuming claims process. Although the claims processing time has been reduced to 1.5 months, delayed claim payments remain a critical issue for farmers who depend on planting seasons.
- There is also a problem with low farmer participation, with a target of 80% participation from the government and 20% from self-funding. Efforts to raise awareness and understanding of insurance among farmers through education and training programs are expected to enhance their willingness to pay. By understanding their rights and obligations through education, it is hoped that farmers will be more receptive to various insurance models offered, including weather index-based insurance.

4) Case Studies in Other Countries: Agricultural Insurance in the ASEAN region

In the third presentation, Mr. Yutaro Takamura from the JICA Survey Team presented the case studies on the implementation of agricultural insurance in ASEAN countries, including:

- Mr. Takamura provided an overview of the status of agricultural insurance in ASEAN countries such as Thailand and the Philippines.
- The key features of agricultural insurance in the Philippines include the comprehensive role of the state-owned insurance company, the Philippine Crop Insurance Corporation (PCIC), in implementing agricultural insurance, along with a common farmer registry system (RSBSA) that facilitates enrollment. Additionally, bundling is mandatory for loan recipients of the Land Bank, while farmers participating in special programs receive a full premium subsidy, and those in regular programs for rice and maize farmers enjoy a 55% subsidy. Furthermore, there are different insurance products and premium rates tailored to various crops.
- In the Philippines, the underwriting results for paddy indicate stable growth in both the number of insured farmers and the insured area, with the exception of a decline in 2021 due to the COVID-19 pandemic. By 2022, 32% of the total rice fields were insured, and as the insured area expanded, the gross written premium (GWP) also increased; however, in 2018, payouts surpassed the GWP due to the impact of a devastating typhoon.

- In the Philippines, agricultural insurance faces several challenges, including financial burdens associated with premium subsidies and a low penetration rate, with only 32% of rice fields insured in 2022. Insurers struggle with a lack of market competition due to the dominance of the Philippine Crop Insurance Corporation (PCIC) and encounter difficulties in attracting private insurers to participate in the market. Additionally, distribution and field operations are hindered by challenges in processing claims during widespread calamities, particularly in inaccessible areas following typhoons, compounded by incomplete claim documentation submitted by farmers. Furthermore, many farmers, especially subsistence farmers, remain heavily reliant on subsidies, which adds to the complexity of the insurance landscape.
- In Thailand, agricultural insurance products include indemnity coverage for crops such as rice and maize, which were first introduced in 1978, with enhancements made in 2011 and 2019. This crop insurance protects against various risks, including drought, flooding, excessive rainfall, frost, windstorms, typhoons, fire, hail, wild elephant damage, and pest and disease impacts, and it offers a premium subsidy of 60% for all insured farmers. Additionally, livestock insurance was introduced in 2019, covering all-risk mortality for swine, beef cattle, and dairy cows, although it does not currently include any premium subsidies.
- Thailand's agricultural insurance system features a crop insurance program that aligns with the national disaster relief program, serving as a top-up to the government-provided disaster compensation once a disaster is declared. The national crop insurance is bundled with loans from the state-owned Bank for Agriculture and Agricultural Cooperatives (BAAC), with the central government subsidizing 60% of the premiums for all farmers. Additionally, BAAC loanees receive an extra subsidy covering the remaining 40%. The program is supported through a public-private partnership (PPP) involving various ministries, the insurance companies association, and the state-owned bank.
- In Thailand, the underwriting results for paddy agricultural insurance show a steady increase in the number of insured farmers and the insured area until 2021, reaching 56% of the total rice field that year. However, a decrease in 2022 occurred due to budget realignment. Payouts have varied significantly from year to year, with a particularly high loss ratio of 223% in 2019 attributed to a massive disaster.
- In Thailand, agricultural insurance faces several challenges: policy-wise, there is a significant financial burden associated with premium subsidies; insurers grapple with high risks and low profitability, compounded by insufficient quality data needed to effectively design and rate insurance products. Distribution and field operations are also hindered by the heavy workload on Department of Agriculture Extension (DOAE) officers for enrollment and loss adjustment, alongside a lack of adequately trained loss inspectors. Additionally, farmers remain dependent on subsidies and often lack sufficient literacy and knowledge regarding insurance processes.
- To move forward, both the Philippines and Thailand must focus on several key strategies: enhancing technical advancements to introduce new insurance products, improve data management, and optimize distribution channels; increasing farmers' literacy and awareness regarding insurance options; and developing revenue insurance products. Specific actions include improving the disbursement process by leveraging financial service providers, cards, or savings accounts; creating parametric insurance models for income loss and area-based coverage using digital platforms; facilitating collaboration between the Philippine Crop Insurance Corporation (PCIC) and private insurers like Pioneer Corporation; utilizing digital technologies such as GIS, databases, and remote sensing for better distribution and product design; and developing innovative products aimed at revenue compensation for farmers.

4.3 Discussions

After the presentation session, workshop participants were given the opportunity to raise the questions. Below is a summary of questions.

| Name and Institution | Questions/ Comments |
|---|---|
| Mori Indonesian General Insurance Association (AUUI) | <ul style="list-style-type: none"> Regarding the various opinions and concerns raised by stakeholders, what is the strategy of the JICA survey team for implementing agricultural insurance in Indonesia? What is the strategy regarding the principle of subsidiarity from BAPPENAS and the Ministry of Agriculture? Will it continue to be implemented, or are there plans to gradually reduce subsidies? In 2019, the achievement of the AOTP target was quite high, nearing 1 million hectares. However, in the subsequent years, the numbers continued to decline drastically, reaching as low as 200,000 hectares. Could you please explain the reasons behind this decline? |
| Tri Bureau of Agricultural Planning | <ul style="list-style-type: none"> As explained by Siswoyo from the Ministry of Agriculture, one issue that has arisen is the willingness to pay. What if this agricultural insurance program were subsidized 100% for small farmers? Given that data from the agricultural census indicates that there are 17.2 million small farmers in Indonesia, many of whom struggle to afford agricultural insurance products, such a subsidy could significantly benefit them. Regarding implementation, Tedi mentioned that issues have arisen from the farmer registration process. Are there no efforts to address these data errors, such as by integrating the registration with the agricultural card system? |
| Tedy Yayasan Agri Sustineri Indonesia (YASI) | <ul style="list-style-type: none"> Is there a plan from the government to promote and distribute agricultural insurance products by involving small partners at the village level or even in the grassroots sector? To effectively raise awareness of agricultural insurance, it is essential to engage all stakeholders. The government can pave the way, but subsequent involvement from multiple stakeholders is crucial. |
| Yakub Indonesian General Insurance Association (AUUI) | <ul style="list-style-type: none"> How can we create synergy between the private insurance company through AAUI and government programs so that each can share roles and work collaboratively? |
| Arif Indonesian Statistical Agency (BPS) | <ul style="list-style-type: none"> BPS is, in principle, supportive of implementing sectoral statistics, particularly in agricultural insurance. However, to be fully involved in the agricultural insurance program, BPS requires a clear definition of its role through a formal cooperation document. Additionally, BPS has a substantial number of survey activities to conduct within its own programs, while still facing limitations in resources, both in terms of personnel and budget. Regarding data support and training, an MoU is also necessary, as BPS cannot operate without a clear legal foundation. Furthermore, BPS upholds its Statistical Principal Official, which relates to data confidentiality. An MoU would also provide a framework for sharing data with external parties. |
| Anggri Agency for Agricultural Instrument Standardization - Agricultural Land Resources (BSIP SDLP) | <ul style="list-style-type: none"> As information, BSIP SDLP currently has an information system called Sis-Crops, a satellite-based system updated twice a month in near real-time with a spatial resolution of 10 square meters. This robust system has great potential for agricultural insurance, particularly in predicting yield and productivity. However, it's important to note that the primary purpose of this system is not for agricultural insurance, so further development is needed for specific applications like land damage assessment. BSIP SDLP and Sis-Crops are open to collaboration with all parties, including JICA. As with BPS, an MoU will be necessary for such cooperation. |

| Name and Institution | Responses |
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| Noor Avianto Bureau of Agricultural Planning | <ul style="list-style-type: none"> In response to Mori, BAPPENAS aligns with Tedy's observations on the subsidy program, emphasizing the government's responsibility to support farmers while navigating limited budgetary resources. BAPPENAS aims to optimize these resources by balancing subsidy levels with fiscal constraints and is currently evaluating if the 80% subsidy remains adequate or requires adjustments, potentially through blended financing solutions involving multiple |

| Name and Institution | Responses |
|---|--|
| | <p>stakeholders.</p> <ul style="list-style-type: none"> • The government’s goal is to foster ownership among farmers, encouraging their investment in these programs and reducing dependency on government funds. This approach enables partnerships with international and domestic actors, such as JICA and Mr. Tedy, to build a supportive ecosystem for agricultural development. While government capacity is limited, collaboration remains essential, with a primary focus on balanced protection for farmers. • Within the legal framework, BAPPENAS remains committed to advancing agricultural insurance, recognizing public-private partnerships’ critical role and maintaining farmer protection as a priority—not merely as an expansion target, but as a genuine commitment to the agricultural sector’s welfare. • In response to the workshop discussion, Noor Avianto emphasized that the action plan and other items are still in progress and require further detailing. The BAPPENAS highlighted regulatory challenges, noting that while laws are in place, some coordination issues with other ministries persist, necessitating a review of the presidential decree to confirm roles and positions in the project. • Looking ahead, BAPPENAS mentioned that the Indonesian mid term plan on 2025-2029 includes four focus areas: funding, regulation, institutional structure, and an operational framework. The funding aspect includes agricultural insurance financing, while regulatory adjustments may be needed for a Public-Private Partnership (PPP) model for agricultural insurance. Institutional coordination, particularly with the Ministry of Economy, will also be refined. • Additionally, the operational framework will be developed with stakeholder support to strengthen the role of BPS in data provision, which remains a critical component for the MOA and other insurance partners in advancing agricultural insurance. |
| <p>Siswoyo Ministry of Agriculture</p> | <ul style="list-style-type: none"> • The allocation of funds has greatly impacted the scope of agricultural insurance coverage over the years. Initially, the target for crop insurance coverage under AOTP was set at 1 million hectares annually from 2021 through 2024. However, this target has had to be revised to reflect budget constraints and shifting priorities, resulting in only 278,806 hectares being covered by 2024. The target of 1 million hectares per year stems from the 2012 IMPRES No. 11, a directive reinforcing the need for agricultural insurance to support farmers facing crop failures due to droughts or pest infestations. This initiative initially provided 3.7 million IDR per hectare but later faced challenges in timely distribution, with payments often delayed by months, thus prompting an evaluation for more efficient use of government funds. • In 2014, a restructuring allowed funds to be allocated more efficiently, covering only a portion of the prior costs while ensuring farmers could still receive substantial coverage. The government introduced a mechanism whereby 80% of insurance premiums would be covered by the state, with the remaining 20% by regional authorities, as stipulated under Law No. 19 of 2013. However, practical limitations at the regional level meant that certain allocations were periodically readjusted to meet real-time needs, such as addressing climate phenomena like El Niño or La Niña. • Efforts have also been made to encourage farmer participation in insurance by rotating education and premium-sharing programs, motivating farmers to view insurance as an essential investment. To bolster support for farmers, collaboration with banks and local financial partners has also been established, enabling farmers to secure loans with less perceived risk. Although JASINDO, a state-owned insurance provider, currently leads the insurance initiative, there is potential for involving private entities in the future, pending legislative amendments to expand coverage and balance responsibilities within the sector. • Starting with the tenure of AAUI’s former head, Mr. Adrian Nur, the Ministry of Agriculture (MOA) established a collaboration that continued under Dani Monti’s leadership, during which MOA coordinated the program invitations. Together, we designed the insurance program, but once implementation began in 2017, we didn’t invite AAUI further since the program was in full |

| Name and Institution | Responses |
|---|--|
| | <p>operation. At that stage, MOA also formed a consortium for agricultural insurance; however, as regulations required only BUMN contractors, we invited JASINDO as the primary contractor.</p> <ul style="list-style-type: none"> Initially, JASINDO led the effort, working alongside Bumi Putra Muda, Jasatania, and others to implement the pilot project. Raya Asuransi was also involved until its collapse. Regarding Hirayama's recent presentation, we found it insightful and aligned with our own goals. Moving forward, the collaboration will extend to training efforts, which will involve the Human Resources Development team. MOA fully support integrating insurance training for field investigators and including key insurance components in their curriculum. |
| <p>Hirayama JICA Survey Team</p> | <ul style="list-style-type: none"> Hirayama responded to Mori question regarding the consultant team's recommendations for strengthening the future implementation of agricultural insurance, referencing the final session's presentation on the "Possible Directions of Agricultural Insurance in Indonesia" that was previously shared. But, basically on differing opinions among stakeholders, these variations often stem from the distinct roles and responsibilities each stakeholder holds within the agricultural sector. Each organization, given its unique mandate, budgetary constraints, and set of priorities, may view and approach issues like implementation structure from slightly different perspectives. For instance, in India's AYII program, the Crop Cutting Experiment (CCE) is crucial, yet the structure for implementing CCEs isn't always uniformly defined. This can lead to delays or challenges when introducing new initiatives, as coordination requires aligning diverse viewpoints and reconciling past concerns across organizations. |

5. Closing

Masato Kawanishi from JICA Headquarters delivered the closing remarks. In his address, Kawanishi highlighted several key points, including:

- The first workshop of the Data Collection Survey on the Promotion of Agricultural Insurance in Indonesia highlighted JICA's decade-long cooperation in supporting Indonesia's agricultural insurance, AUDP.
- Beginning with climate change initiatives in 2013, JICA aimed to strengthen AUDP's implementation and explore index-based insurance options. Agricultural insurance is crucial for protecting small-scale farmers and ensuring food security, though significant challenges remain.
- This Survey, with its three planned workshops, seeks to establish a shared vision among stakeholders, fostering collaboration for effective implementation. Stakeholders are encouraged to take action post-survey, building the foundation for future cooperation between Indonesia and JICA.

END

Attendee List for the First Workshop

| No | Name | Organization | Position |
|----|----------------------------------|--|---|
| 1 | Noor Avianto | BAPPENAS | Coordinator of Livestock and food, Directorate for Food and Agriculture |
| 2 | Noor Intan FH | BAPPENAS | Staff |
| 3 | I Putu Ikrar S | BAPPENAS | Staff |
| 4 | Putri Pasha | BAPPENAS | Staff |
| 5 | Siswoyo | MOA | Coordinator of Agri Insurance Programm |
| 6 | M.Rifky.Z | MOA | Staff |
| 7 | M.Amin | MOA | Staff |
| 8 | Yulistiana Endah Utami | MOA | Planner |
| 9 | Tri Wahyu | MOA | Planning Beareu |
| 10 | Yulistiana Utami | MOA | Planning Beareu |
| 11 | Novijan Janis | MOF | Risk financing management departement |
| 12 | Indra Fajar F | MOF | Risk financing management departement |
| 13 | Arif Handoyo | BPS | Methodology department |
| 14 | Aris Kristyawan | BPS | Methodology department |
| 15 | Kustiyo | BRIN | Researcher |
| 16 | Dr. Danang Surya Candra | BRIN | Lead Expert Researcher |
| 17 | Masato Kawanishi | JICA HQ | Senior advisor |
| 18 | Jitsukata | JICA Indonesia | JICA Indonesia |
| 19 | Adina | JICA Indonesia | JICA Officer |
| 20 | Jum KOIDE | JICA Indonesia | JICA Indonesia |
| 21 | Anggri Hermawati | BSIP SDLP | Siscrop working team |
| 22 | Dicky Anggakusuma | JASINDO | JASINDO Agri Division |
| 23 | Jakup Nugraha | AAUI | Member |
| 24 | Mori Prananto | AAUI | Member |
| 25 | Gina Gustiani Pitaloka,S.P.,M.P. | Food Crops and Horticulture Agency, West Java Province | Head of Agriculture Financing Team |
| 26 | Kota Hirayama | JICA Survey team | Team Leader |
| 27 | Kosei Hashiguchi | JICA Survey team | Co-Team Leader |
| 28 | Kiyoshi Fukuwatari | JICA Survey team | Insurance Product Design |
| 29 | Katsuyoshi Sekii | JICA Survey team | Insurance Product Design |
| 30 | Yutaro Takamura | JICA Survey team | Agriculture Insurance Promotion |
| 31 | Udhyta Dasanayaka | JICA Survey team | Remote Sensing |
| 32 | Hajime Kita | JICA Survey team | Remote Sensing |
| 33 | Jailani | JICA Survey team | Project Assistance |
| 34 | E.Wityasminingsih | JICA Survey team | Project Assistance |
| 35 | Suganda Formalidin | JICA Survey team | Project Assistance |
| 36 | Teddy Tambas | Yayasan Agri Sustineri (YASI) | Director |
| 37 | Wahyudi | Yayasan Agri Sustineri (YASI) | Staff |
| 38 | PERI ANDRIAN SEPTIADI | Yayasan Agri Sustineri (YASI) | YASI Supervisor West Java & Central Java |
| 39 | Muhammad rizal zulhilmi | Yayasan Agri Sustineri (YASI) | Field Facilitator |
| 40 | Rizal Zulhimi | Yayasan Agri Sustineri (YASI) | Staff |
| 41 | Arief Rahman Harahab | Kendal Agriculture Dinas | Sub coordinator for Pesticide Fertilizer and Financing |
| 42 | Aang | Karawang Agriculture Dinas | Head of Agriculture Facilities and Infrastructure Division |
| 43 | Eveline | Karawang Agriculture Dinas | Staff |

The Proceedings of the Second Workshop: Data Collection Survey on Promotion for Introduction of Agricultural Insurance in Indonesia

Date and Time : 12 December, 2024 from 9.00 to 12:30

Venue : Ashley Hotel Jakarta

1. Background

The Indonesian government has prioritized food security as a central issue in its national long-term development plan. To address this, in 2013, it enacted the Law on Farmer Protection and Empowerment and has since been actively promoting the Agricultural Insurance Program for Rice Crops (AUTP).

Building on this, from 2017 to 2023, human resource development initiatives for agricultural insurance dissemination and a pilot project for a new insurance product, Area-Yield Index Insurance (AYII), were implemented through the JICA-supported "Project for Capacity Development for the Implementation of Agricultural Insurance (CDIAI)."

Despite these efforts, agricultural insurance dissemination remains limited, with only about 5% of paddy acreage covered. Expanding agricultural insurance will require addressing four key issues: 1) enhancing cooperation and coordination among stakeholders, including government and the private sector; 2) designing insurance products tailored to farmers' needs; 3) increasing awareness and understanding of agricultural insurance among farmers and government officials; and 4) establishing an efficient system for widespread dissemination of agricultural insurance.

This second workshop was held to foster a shared understanding among relevant organizations about the future direction of agricultural insurance in Indonesia. Additionally, this workshop aimed to promote mutual dialogue to encourage the active involvement of participants engaged in agricultural insurance, who come from diverse backgrounds in Indonesia. Each participant engaged in group discussions and interactive sessions to clarify the interests of each party, promoted mutual understanding, and encouraged each relevant organization to actively participate in the workshop with a sense of ownership.

2. Objectives

The objectives of this workshop are as below:

- 1) To foster a shared understanding and future vision of agricultural insurance among relevant stakeholders, and
- 2) To outline specific action points for each stakeholder to promote the expansion of agricultural insurance.
- 3) To share experience of ground level agricultural insurance implementers through the panel discussion

3. Workshop Agenda

The detailed workshop agenda can be seen on the following table:

Table 1. Workshop Agenda

| Time | Agenda | Remarks |
|---------------|--|-------------------------------|
| 9:00 – 9:15 | Opening Remarks | BAPPENAS |
| 9:15 – 9:45 | Part I: Progress of the JICA Survey <ul style="list-style-type: none">· Main Discussion Points· Results of the Field Survey | JICA Survey Team |
| 9:45 – 10:00 | Q&A and Discussion | |
| 10:00 – 10:45 | Part II: Panel Discussion <ul style="list-style-type: none">· Discuss the current agricultural insurance scheme and future visions· Panelists could be JASINDO branch officers, farmers' representatives, DINAS staff, and private insurers | Facilitator: JICA Survey Team |
| 10:45 – 11:00 | Part III: Potential Directions and Action Points <ul style="list-style-type: none">· Overview of the potential directions· Draft action points of each stakeholder | JICA Survey Team |
| 11:00 – 12:15 | Q&A and Discussion | - |
| 12:15 – 12:30 | Closing Remarks | JICA Officer/ BAPPENAS |

4. Workshop Summary

The second workshop on the Promotion for the Introduction of Agricultural Insurance in Indonesia was held on Thursday, December 12, 2024, at Hotel Ashley Wahid Hasyim in Jakarta.

This workshop brought together participants from a range of stakeholders involved in agricultural insurance in Indonesia, including representatives from BAPPENAS, the Ministry of Agriculture, Statistics Indonesia (BPS), JASINDO, JICA, Provincial Agriculture Agency, farmer and extension officer representatives, as well as development partners such as the Indonesian General Insurance Association (AAUI).

4.1 Opening

This second workshop on the Promotion for the Introduction of Agricultural Insurance in Indonesia was opened by Mr. Noor Avianto, representing the Director of Food and Agriculture at BAPPENAS, highlighting several key points regarding the progress and future plans of agricultural insurance:

- The second workshop focused on presenting the survey results conducted under the JICA Survey. Participants were invited to provide input and corrections to refine the findings.
- The second phase of the agricultural insurance project is planning in collaboration with the Japanese government. A follow-up workshop or related activities are tentatively scheduled in February 2025, with the submission of final recommendations of the JICA Survey Team.
- BAPPENAS was currently drafting the National Mid-Term Development Plan (RPJMN) 2025-2029, where agricultural insurance remained one of the national priorities. Participants were encouraged to provide policy recommendations to be incorporated into the RPJMN and submitted to the Ministry of Agriculture.
- Support from the Ministry of Agriculture was specifically requested, emphasizing its critical role in implementing agricultural insurance as a key government initiative.
- Mr. Noor acknowledged the increasing opportunities for cooperation and coordination facilitated by forums like the workshop. He mentioned receiving information about potential collaboration with JICA, expressing appreciation for such initiatives.

Mr. Noor Avianto assured participants that BAPPENAS, as a government body, welcomed and supported cooperative efforts as long as they complied with applicable rules and regulations.

4.2 Presentations

In this second workshop, the JICA Survey Team presented the progress of the survey activities, findings from the field survey, and policy directions and recommendations for the future implementation of agricultural insurance in Indonesia.

In addition, field-level implementing teams, such as representatives from the Karawang and Kendal District Offices, PPL (extension officer) representatives, POTP (pest and disease officer), and farmers, were deliberately invited as panel discussion speakers. This discussion aimed to understand the challenges faced by both field officers and farmers on the ground.

1) Progress of the JICA Survey

The first presentation was delivered by Mr. Hirayama as the JICA Survey Team leader. In his presentation, Mr. Hirayama highlighted the key points, which included:

- The Survey highlights the challenges faced by both public and private sector schemes, such as inter-ministerial coordination, financial burdens, farmer awareness, and the technical capacity to develop insurance products.
- The Survey has engaged a range of stakeholders, including public sector entities like BAPPENAS, the Ministry of Agriculture, JASINDO, BPS, and regional offices such as Karawang and Kendal. It has also included private sector organizations like the Insurance Association of Indonesia (AAUI), Zurich Insurance, AXA, Bintan, Blue Marble Insurance, as well as agribusinesses like Jiva, Koltiva, Syngenta, and Yashi, which work with farmers to promote agricultural insurance.
- Development partners and research institutions, such as UNDP, GIZ, IPB, and the Center for Remote Sensing, have been involved in the discussions to support research and innovation in agricultural insurance.
- The Survey emphasizes the importance of continued research, particularly in utilizing remote sensing technologies for yield estimation, and strengthening socialization activities to increase farmers' awareness of insurance options.
- In terms of product design, the continuation of AOTP for paddy crops and the consideration of index-based insurance for export crops like coffee and cocoa are recommended. There is potential for greater public-private partnerships in the future, given the involvement of insurance companies with experience in parametric insurance.
- Efforts to improve the operational aspects of agricultural insurance, such as the use of postal services, were noted as positive practices and should be expanded.

2) Field Survey Results

In this part, Mr. Yutaro Takamura as JICA Survey Team shared the results of the field survey conducted last November. The presentation included an overview of the field survey, results categorized by specific topics, and a summary with recommendations. Some of the key points presented by the JICA Survey Team are outlined below:

- The Survey aimed to understand farmers' awareness of agricultural insurance, identify attributes of those willing to participate, assess socialization bottlenecks, evaluate agricultural insurance risks and impacts, and explore collaboration possibilities with other government programs.

- A questionnaire survey was conducted in Karawang (West Java) and Kendal (Central Java), where the AYII pilot project was previously implemented by JICA. Survey sites included both pilot and non-pilot villages. Due to budget and time constraints, farmers were selected using convenience sampling, targeting key informants. A total of 114 farmers responded.
- In summary, the average cropping area in Kendal was 0.66 ha, reflecting its mountainous terrain, while Karawang averaged 1.47 ha. Farming income in Karawang was significantly higher than in Kendal.
- In Kendal, most respondents have joined AUTP only once, while in Karawang, many have participated multiple times. Regarding AYII, most respondents have joined once or twice, reflecting its status as a pilot project.
- Government subsidies were the primary motivation for joining both AUTP and AYII. Some respondents also viewed insurance as a risk management tool. Recommendations from extension officers or fellow farmers influenced AYII participants more than AUTP participants. Farmers generally relied on PPL extension officers as their main source of farming information.
- Challenges: PPLs struggled with teaching insurance concepts to farmers and cited insufficient budgets for face-to-face socialization as a major bottleneck.
- There was little difference in preference between high premium/high insured value and low premium/low insured value. Regarding payout types (variable based on damage vs. fixed payout), respondents slightly preferred fixed payout due to a quicker process. The majority of respondents are willing to pay the same premium as the current net premium after the 80% subsidy for an insured value of 6 million rupiah per hectare.
- In Karawang (AUTP DESA), more than 80% of respondents are willing to join AUTP for the next season, while in Kendal (AUTP DESA), less than 50% of respondents are willing to join AUTP.
- Many respondents considered cancelling their insurance due to issues such as a tedious claim process, low understanding of AUTP and AYII, unfair loss assessments, low payouts, and no payouts despite experiencing failure.
- Many respondents and PPLs report that some farmers are aware of AUTP or AYII but are not willing to join. The main reasons include not understanding the benefits, feeling no need for insurance, doubts about insurance, and concerns about the complexity of the process. Extension officers also note that some farmers are either overly optimistic about farming or afraid of the complex process.
- Most respondents, especially in Karawang (more than 95%), see the necessity of agricultural insurance. In Kendal (AUTP-Desa), 30% do not see the necessity, while some respondents in AYII-Desa are unsure.
- Farmers most frequently mention a desire for coverage of crop failure, expecting compensation at all damage levels and assurance of protection. Other desires include a quick and easy claim process, higher compensation, affordable premiums, ease of access, simplicity, and improved livelihood support with better targeting of benefits through education and awareness.
- Most respondents are beneficiaries of seed or fertilizer programs, with more than 20% also benefiting from micro credit. More than half of respondents agree to bundling agricultural insurance with other government supports, citing simplified processes, practicality, efficiency, accessibility, and inclusion as reasons.

- **Summary and Recommendations:**
 - ✓ **Low Understanding:** Farmers' understanding of AUTP and AYII remains insufficient, despite satisfaction with socialization. Recommended actions include improving socialization to raise understanding and considering fully subsidized or group-based farmer recruitment systems.
 - ✓ **Tedious Claims Process:** The lengthy claim process discourages farmers. Recommendations include improving the claim procedure while ensuring cost efficiency for insurers.
 - ✓ **Low or No Payout Experience:** Low payouts or no payouts discourage farmers from continuing their insurance. Recommendations suggest updating the payout design, considering inflation, and multiple loss categories.
 - ✓ **Importance of Socialization Channels:** Extension officers are key to educating farmers, though many face difficulties. Effective socialization and improved training materials are needed, along with exploring additional enrolment options beyond extension officers.
 - ✓ **Willingness to Accept Premium Payments:** 65% of respondents are willing to accept the current subsidized premium. Recommendations include reconsidering subsidy rates, particularly for additional premium subsidies, and reallocating funds for better socialization and meeting insured quotas.
 - ✓ **Bundling with Other Programs:** Many farmers are in intent to bundling agricultural insurance with other programs. Recommendations suggest exploring bundling to reduce premiums and improve efficiency, but with careful consideration of beneficiaries' coverage.

2) Potential Directions and Action Points

The last presentation, delivered by Mr. Hirayama Kota which is focused on discussing the future direction of the project, the implementation of insurance in Indonesia, and the policy and implementation plan for the country's agricultural insurance program. The key points of the presentation were outlined as follows.

- Indonesia's advanced agricultural insurance scheme, noting that it is more developed compared to many other countries in the region. He pointed out that, unlike most Southeast Asian nations, which typically only have small-scale pilot programs, Indonesia, along with Thailand and the Philippines, has established a national agricultural insurance scheme. While recognizing this progress, Mr. Hirayama stressed that there is still significant room for improvement. He identified several key enablers for a sustainable agricultural insurance scheme:
 1. **Policy/Regulation:** Strong national policies and development plans form the foundation for the scheme.
 2. **Stakeholder Coordination:** Effective coordination among stakeholders is essential for implementing the program successfully.
 3. **Product Design:** Insurance products need to be designed based on the specific needs and demands of farmers.
 4. **Insurance Operations:** Simplicity and transparency in operations are crucial for achieving high participation rates.
 5. **Technologies:** Advanced technologies, such as remote sensing, AI, and digital tools, should be leveraged to enhance the scheme's effectiveness.
 6. **Literacy/Awareness Creation:** Promoting insurance literacy and raising awareness among farmers, public officers, and policymakers is vital for stable operations.

- The penetration rate of agricultural insurance in Indonesia remains low and heavily reliant on government subsidies. Referring to earlier discussions, he reiterated the importance of reducing dependence on state subsidies and exploring alternative funding sources to ensure the scheme's sustainability. To address these challenges, he summarized the necessary actions into three key focus areas:
 1. Strengthening the implementation structure and socialization efforts.
 2. Improving farmers' awareness and understanding of agricultural insurance.
 3. Promoting insurance products that align with farmers' needs and demands.
- Mr. Hirayama concluded by expressing confidence that addressing these areas would lead to the expansion of agricultural insurance in Indonesia, thereby enhancing food security and achieving the shared vision among stakeholders.
- A summary of potential directions and action points, building on the three key areas previously discussed. He explained that these were reorganized from draft recommendations shared during the previous workshop and categorized under the key enablers. The details are as follows:

| | Strengthening Implementation and Socialization | Improving Farmers' Awareness | Promoting insurance based on Farmers' Needs |
|---------------------------------------|--|---|--|
| Current Situation | <ul style="list-style-type: none"> • No much inter-ministerial coordination at the central level. • Promoting insurance standalone | <ul style="list-style-type: none"> • Limited farmers' understanding and awareness • Socialization activities are limited. | <ul style="list-style-type: none"> • Improvement of the claim process of AOTP • Private sector involvement in pilot projects for index/parametric insurance. |
| Directions Short term: | <ul style="list-style-type: none"> • Proceeding with the Presidential Decree and agri. insurance roadmap | <ul style="list-style-type: none"> • Strengthening training and socialization activities | <ul style="list-style-type: none"> • Continuing AOTP reviews and operational improvement |
| Mid term: | <ul style="list-style-type: none"> • Bundling and creating synergy with loans/ inputs | <ul style="list-style-type: none"> • Decreasing the central and regional premium subsidies | <ul style="list-style-type: none"> • Diversifying insurance products for different crops |
| Long term: | <ul style="list-style-type: none"> • Introducing PPP models | <ul style="list-style-type: none"> • Diversifying awareness creation activities | <ul style="list-style-type: none"> • Strengthening insurance schemes through PPP |
| Action Points (By end of 2025) | <ul style="list-style-type: none"> • Approval process of the Presidential Decree and agri. insurance roadmap (BAPPENAS) | <ul style="list-style-type: none"> • Arrangement of the AOTP training through BPPSDMP (MOA) | <ul style="list-style-type: none"> • Conduct monitoring and evaluation of AOTP (MOA and JASINDO) |

- Mr. Hirayama expressed his hope that participants would continue collaborative discussions to ensure a comprehensive and finalized plan is ready for the next workshop.

4.3 Panel Discussion

1) Discussion Topics

The topics addressed in this panel discussion session were as follows:

1. Insurance Awareness and Literacy
 - Panelists discuss efforts and challenges in raising awareness about agricultural insurance among farmers.
 - A farmer shares their initial understanding of agricultural insurance and what helped increase their knowledge.
 - Extension staff highlight their role in educating farmers on insurance benefits and how they address common misconceptions.

2. Registration, Claim Process, and Loss Adjustment
 - Panelists discuss the processes involved in insurance registration, filing claims, loss adjustments, and the overall efficiency of insurance operations, including claim payments.
 - Farmers share their experiences with the registration process and claim handling, focusing on what worked well and what could be improved.
 - JASINDO branch staff and pests and disease inspector explain the procedural side of claim management, aiming to clarify how the system works and address common pain points.
3. Aligning Product Design with Farmers' Need
 - The discussion centers on the design and terms of insurance products (AUTP), examining whether they meet farmers' specific needs.
 - Farmers express their views on existing insurance policies and suggest potential improvements, focusing on issues like coverage, premiums, and product conditions.
 - Extension staff and JASINDO staff respond to these concerns, sharing insights into how product design is determined and how farmers' feedback can shape policy updates.

2) Summary of the Panelist Responses

Ms. Dewi from Kendal

- Pilot Project: Conducted a pilot project on agricultural insurance from 2022 to 2023, based on the yield index in MT2, but limited evaluation due to lack of comparison with MT1.
- Mindset Challenge: Changing farmers' mindset about insurance is difficult; they associate it with disaster.
- Socialization Efforts: Emphasized continuous socialization despite limited personnel.
- Insurance Benefits: Communicated benefits of insurance, comparing costs to everyday expenses to make it relatable.
- Registration Process: Standard procedure managed by PPL officers, straightforward but with challenges in AYII program due to miscommunication with JASINDO.
- Climate Risks: Highlighted the increasing importance of agricultural insurance due to climate-related risks.
- Claims Processing: Efficient claims processing within two weeks would enhance trust and participation.
- Future Challenges: Potential quota restrictions in 2024, suggesting more flexible technical guidelines.

Mr. Aang from Karawang

- Socialization Since 2018: Actively working on socializing agricultural insurance, organizing events across districts.
- Farmers' Reluctance: Farmers hesitate to join AUTP due to myths and belief in successful harvests; delays in claims processing led to disinterest.
- Improvements in 2023: Noted improvements in claims processing, but some farmers still dissatisfied with delays.
- Speed of Claim Payments: Emphasized the importance of quick claim payments to maintain farmers' trust.

- Area-Yield Index: Inquired about the yield index in Karawang and suggested updates to the benchmark yield.

Mr. Marzuki

- Participation in AUDP: Participating in the agricultural insurance program for nearly five years, with premiums subsidized by the local government.
- Encouraging Participation: Successfully encouraged fellow farmers to join the program, highlighting the capital benefit for future crops.
- Claims Process: Noted the lengthy claims process but expressed willingness to continue participating and inviting others.

Mr. Umang

- Socialization and Acceptance: Noted increasing acceptance of insurance in his area, especially with AYII tests conducted.
- Farmers' Perception: Initial obstacle was farmers' perception of the program, but gradual explanation helped increase willingness to participate.
- Claims Process: Emphasized the importance of a swift claims process for maintaining farmers' interest and participation.

3) Input and Response from Other Participants

Mr. Siswoyo responds the panel discussion point, including:

- Regarding their statements from panelists, it was agreed, especially in relation to the CCE. When looking at the CCE, it was observed that the implementation was disproportionate, meaning too many resources were used for too few results. The cost of the CCE was high, yet the realization of hectares did not match. It was suggested that, in the future, attention should be paid to the data, and collaboration with the BPS would be necessary if the program was to be implemented again.
- Insurance registration should be aligned with the planting area. The program needed to be fast, and if the target area was small, it would be easier to process quickly. However, without technology to measure the planting area, the process would remain slow, requiring physical observation.

The issue mainly concerned the claim service, and it was acknowledged by Mr. Bimo, including:

- The program was recognized as being very good, but it was noted that the loss ratio in terms of insurance was very high, and the frequency of claims was also high, requiring a significant number of personnel. The program was described as complex.
- For this reason, it was stated that there would be future collaboration with BRIN regarding registration and claims. The use of geotagging and remote sensing technology was planned, which would enable the registration process to be done using satellite images. The land planted and the area to be insured would be measured directly, eliminating issues related to claims. It was explained that if the registration number was too high, it could lead to a loss for MoA, while paying more to the farmers could result in a loss for JASINDO. Both sides were said to have their own risks. To mitigate these risks, technology would be used for registration and claims to ensure accuracy and minimize the risk of land loss.
- The commitment to improving the claim service was reiterated, with a request from Kendal and Karawang district help in communicating with JASINDO branches. It was emphasized that coordination with the area should be increased, as effective communication was seen as

the key. The speaker noted that the speed of the process would depend on whether they were willing to invest more resources.

- Mr. Bimo added to the previous point by mentioned by Mr. Diki mentioning that in Karawang, the value of the claim to be paid was higher than the collected premiums. This indicates that it cannot be effectively managed by the insurance company, making it very difficult to run the program well.

Mr. Diki from JASINDO add some comments, including:

- Regarding the claim, he and Mr. Bimo were from the business sector in JASINDO, while the claim group was a different department, and their independence could not be mixed. However, the business group still had responsibilities related to the program's implementation, from registration to payment of claims. He noted that when he received this information, he tried to understand it better, realizing that the claim group had not been fully informed.
- Last year, in Lembang, there had been discussions about changes in the management of JASINDO. Previously handled by the Jakarta branch and Bekasi, it had now moved to Bandung. Similarly, the claim group had undergone changes in the middle of the year, with the responsibility shifting. Mr. Diki confirmed that the information he received was indeed related to the claims. He also mentioned that the understanding of CCE, which refers to a village calculation, might not have been fully communicated.
- Suggested that when the CCE point was initially determined, the group might not have been included in the calculation. As for the claim documents, especially for form 5, it appeared to be similar because both involved village calculations. He checked and confirmed that the documents were indeed the same.
- Mr. Diki expressed curiosity about why the fluctuations in the claim had not been obvious in the past 10 years but had decreased significantly in the last three years. However, he clarified that this was not the main factor of concern. What mattered most was the process of the claim and ensuring that the documents were complete. If everything was in order, the claim would be processed. He assured that he had already forwarded the information about the miscommunication to the claim team, hoping that the claim process would be completed and the payment made by the end of the month

Mr. Mori from AAUI given the input on how the management and implementation of professional insurance should be structured so that insurance companies can survive while also being accepted by farmers, including:

- The challenges faced in the field, particularly concerning the implementation of the AOTP (Agricultural Insurance Product) and Area Yield Index. He mentioned that AAUI had conducted several studies, which revealed key issues.
- One major concern was the low interest farmers had in insurance products. This was not limited to agricultural insurance, but also extended to general insurance products like property and personal accident insurance. Insurance agents had to use various methods, such as offering lunch or other incentives, to introduce these products to farmers.
- The average age of farmers was relatively high, usually above 45 or 50 years old. It is suggested that focusing on younger generations of farmers was crucial, as they would likely be more open to understanding and adopting insurance. In the next 5 to 10 years, these younger farmers would replace the older generation, making them an important group to target for socialization efforts.

- The role of farmers' wives, who often manage the household budgets. Based on a survey in East Java, it was found that women were more involved in financial decision-making for their families. Alongside focusing on younger farmers, financial literacy should also be targeted at the wives of farmers. Farmers' wives were more likely to understand the financial risks faced by their families and were often responsible for managing household finances. Focusing on them would improve the effectiveness of the socialization efforts.
- The challenge of selling agricultural insurance as a stand-alone product. He pointed out that while farmers may be interested in insurance in the short term, their interest could decline in the third or fourth year. He noted that agricultural insurance targeted low-income individuals who may not fully realize the need for it, making stand-alone sales difficult.
- As suggestion, the agricultural insurance products might not be sustainable as independent products. Instead, he proposed that bundling these insurance products with other services or products could make them more appealing to farmers.
- AAUI had tested bundling insurance with loans, but the small size of the loans typically available to farmers limited the effectiveness of this approach. Suggested that bundling agricultural insurance with support facilities or services to monitor farmers' ability to pay for premiums might be a more effective strategy.
- This approach had been discussed and tested in the field and believed it could work through multi-party collaboration. It should not be the sole responsibility of insurance companies or distributors to absorb the premium costs, and other stakeholders could also help cover some of the costs.
- The potential use of remote sensing technology to improve the efficiency of the Area Yield Index. This technology could streamline the process and reduce the need for debates about current demands in the future.

4.4 Discussions

| Name and Institution | Questions |
|------------------------------------|---|
| <p>Mr. Bimo JASINDO</p> | <ol style="list-style-type: none"> 1. Mr. Bimo raised a concern that many farmers are unable to pay the 20% insurance premium, not because they are unwilling, but due to limited financial capacity. Since most farmers in Indonesia manage less than 2 hectares of land—often less than 1 hectare—the income from their production is barely enough to cover living expenses, making the insurance premiums unaffordable. 2. Government intervention through subsidies was essential to address this issue. Given that farmers typically earn only 2 to 4 million rupiah per hectare per planting season, which must sustain them for several months, the APBN's 80% premium subsidy, supplemented by 20% from regional governments, was seen as a necessary measure to enable farmer participation. 3. Regarding the proposed consortium, JASINDO firmly expressed its decision not to participate. After 10 years of experience in implementing agricultural insurance, JASINDO recognized the complexities and legal risks involved. The company emphasized that joining a consortium would leave it solely responsible for liabilities, while other members would only benefit from premium collections, creating an uneven risk-sharing arrangement. 4. Lastly, input from JICA was requested concerning the current premium rates of 3% for AUTP and 2.65% for AYII. Given that the loss ratio has averaged around 80% in recent years, with some periods reaching as high as 130%, there was concern about the sustainability of these rates. JASINDO sought JICA's perspective on whether the rates are appropriately set or need revision from a risk management standpoint. 5. In response to Mr. Hirayama's answer to Mr. Bimo's question regarding the premium rates, Bimo explained that implementing different premium rates |

| Name and Institution | Questions |
|----------------------|---|
| | <p>based on regional characteristics is theoretically feasible. However, due to the predetermined annual budget set by the Ministry of Agriculture (MOA), adjustments within the government project are not possible.</p> <p>6. Mr. Bimo noted that premium adjustments have already been applied in the commercial AOTP program. For example, a 3% premium rate was set for the first planting season, with the possibility of adjustments if the risk level decreases. However, in the government-backed AOTP program, the premium rate remains fixed at 3% as mandated by the Ministry, which is considered insufficient to cover the associated risks. Although JICA's recommendations have been implemented in commercial areas, extending them to the government program is not feasible due to regulatory constraints.</p> |

| Name and Institution | Responses |
|---|--|
| <p>Mr. Siswoyo Ministry of Agriculture</p> | <ol style="list-style-type: none"> 1. In response to the presentation by Mr. Hirayama and Mr. Takamura, Mr. Siswoyo suggested that a broader range of premium sources be explored to increase farmers' willingness to pay and reduce dependence on APBN (National budget) and APBD (Regional budget). Corporate Social Responsibility (CSR) contributions were proposed as a potential source, which could help exceed the national premium target of 1 million ha and possibly reach 3 million ha. 2. It was recommended that 80% of premium payments be prioritized from APBD 1 (Provincial budget) and APBD 2 (District budget) allocations. This approach was seen as a way to enhance farmers' willingness to pay while reducing reliance on government funding. 3. A more effective socialization strategy was proposed, emphasizing that registration and data collection should be preceded by outreach efforts at provincial and regional levels. This would involve direct engagement with farmers, ensuring clarity through signed agreements within farming groups, and possibly coordinating with local police departments. 4. Mr. Siswoyo responded to Mr. Bimo's response on Mr. Hirayama's suggestion regarding the regional differences rate, Mr. Siswoyo mentioned that a map outlining endemic regions and corresponding premium rates has already been developed. An analysis and research effort focused on production centers across 16 provinces helped establish these rates. 5. The 3% premium rate was determined based on the findings from this mapping and research. If clarification is needed, the map can be reviewed collaboratively to explain the rationale behind setting this rate, considering that endemic regions have already been factored into the calculations. |
| <p>Mr. Kadamanto Indonesian Statistical Agency (BPS)</p> | <ol style="list-style-type: none"> 1. In response to the presentation by Mr. Hirayama and Mr. Takamura, Mr. Kadamanto suggested that the insurance process be simplified to make it more comprehensible for farmers. Currently, insurance may feel like an unnecessary expense to them, especially as they face rising production costs during events like El Niño, making it difficult to see the immediate benefits. 2. The complexity of the process was highlighted as a potential barrier, with many farmers opting to prioritize other expenses instead. It was noted that certain regions, such as Karawang and Kendal, may not experience significant harvest issues, which could explain the lower participation rates in these areas. 3. Simplifying the socialization process and making it more accessible was proposed as a solution to help farmers better understand the program. Additionally, it was recommended to streamline the options, such as between IHPB and other alternatives, as simplicity in understanding and payment is likely to encourage greater farmer engagement. 4. It was observed that farmers are pragmatic and will engage with programs that clearly benefit them, provided the process is straightforward and easy to follow. |

| Name and Institution | Responses |
|--|---|
| <p>Mr. Hirayama JICA Survey team ss</p> | <ol style="list-style-type: none"> 1. Mr. Hirayama responded to Mr. Bimo's question regarding the premium rates and loss ratio, Hirayama suggested during a previous workshop that different premium rates could be introduced based on varying risk levels across regions. For example, coastal areas with higher risks could have higher premiums, while mountainous regions with lower risks could pay less. This adjustment could help balance the system more effectively. 2. Concerning the loss ratio, it was noted that Japan's agricultural insurance scheme has maintained an average loss ratio of 80% to 90% over the past decade, which is considered reasonable for a government-supported public scheme. Whether an 80% loss ratio is too high depends on the targeted ratio. If deemed excessive, adjusting the premium rate by increasing it could be considered, warranting further discussion. 3. Mr. Hirayama responds to Mr. Bimo's rebuttal of the answer that has been provided regarding the regulatory restriction. Mr. Bimo has raised in his rebuttal, while acknowledging the current system and decision-making process, it was suggested that forming a central coordination team involving JASINDO, BAPPENAS, and the Ministry of Agriculture (MOA) could facilitate better discussions on agricultural insurance operations. Since BAPPENAS is already working on a draft of presidential decree or an agricultural roadmap, including such a coordination mechanism in the broader strategy could enhance future discussions and policy implementation. |

5. Closing

Mr. Yohei Hashimoto from JICA Headquarters delivered the closing remarks. In his address, Mr. Hashimoto highlighted several key points, including:

- Mr. Hashimoto expressed his sincere gratitude to all stakeholders for their active participation and strong cooperation throughout the survey process. He reiterated that the primary objective of the survey is to establish a shared understanding and vision for agricultural insurance in Indonesia among all stakeholders while outlining specific action points to support its expansion.
- JICA plans to evaluate the progress of these action points following the survey's completion to determine the potential launch of a new project. The survey has been structured around three workshops. The first workshop introduced the survey's background, schedule, structure, and the integration of agricultural insurance within Indonesia's food security policy. In the second workshop, held today, the results of the field survey were shared, and draft action points and future directions for agricultural insurance were discussed in detail.
- The third and final workshop, scheduled for February 2025 which is aim to finalize the action points, develop a unified vision for agricultural insurance, and define the roles and responsibilities of each stakeholder. He emphasized the limited time available before this workshop and called for proactive participation to ensure meaningful progress.
- The importance of implementing the agreed-upon actions following the survey to create a clear roadmap for the future of agricultural insurance in Indonesia. Mr. Hashimoto expressed his appreciation in advance for the continued collaboration of all stakeholders to achieve these shared goals.

END

Attendee List for the Second Workshop

| No | Name | Organization | Position |
|----|---------------------|---|---|
| 1 | Noor Avianto | BAPPENAS | Coordinator of Livestock and food, Directorate for Food and Agriculture |
| 2 | Sabila Tri Utami | BAPPENAS | First Planner |
| 3 | I Putu Ikrar S | BAPPENAS | First Planner |
| 4 | Siswoyo | MOA | Coordinator of Agri Insurance Programm |
| 5 | M. Rifky.Z | MOA | Agricultural Infrastructure and Facilities Analyst |
| 6 | M. Apuk Ismane | MOA | Chairperson of the Training Institution and Manpower Working Team |
| 7 | Ifan | MOA | Officer |
| 8 | Indra Fajar | MOF | Executive at the Directorate of State Financial Risk Management |
| 9 | Giara Iman | BBPSI SDLP | Study Assignment Officer |
| 10 | Mety Maryanti | BBPSI SDLP | Report Compiler |
| 11 | Kadarmanto | BPS | Director of Statistical Dissemination |
| 12 | Arif Handoyo M | BPS | First Functional Statistics |
| 13 | Dicky Muharam | JASINDO | Relationship Officer for Government Assignment Unit II |
| 14 | Bimo Wira Para | JASINDO | Head of Government Assesment Unit II |
| 15 | Hashimoto Yohei | JICA HQ | Director |
| 16 | Kawamura Nonoka | JICA HQ | Officer |
| 17 | Megumi Kubo | JICA HQ | JICA HQ |
| 18 | Kawanishi Masato | JICA HQ | Senior Advisor |
| 19 | Hiroaki Jitsukata | JICA Indonesia | Project Formulation Advisor |
| 20 | Jum KOIDE | JICA Indonesia | Officer |
| 21 | Adina Dwirezanti | JICA Indonesia | Officer |
| 22 | Mori Prananto | AAUI | Member |
| 23 | Kota Hirayama | JICA Survey Team | Team Leader |
| 24 | Kosei Hashiguchi | JICA Survey Team | Co-Team Leader |
| 25 | Yutaro Takamura | JICA Survey Team | Agriculture Insurance Promotion |
| 26 | Kiyoshi Fukuwatari | JICA Survey Team | Insurance Product Design |
| 27 | Udhyta Dasanayaka | JICA Survey Team | Remote Sensing |
| 28 | Jailani | JICA Survey Team | Project Assistance |
| 29 | E.Wityasminingsih | JICA Survey Team | Project Assistance |
| 30 | Suganda Formalidin | JICA Survey Team | Project Assistance |
| 31 | Yuni | Central Java Provincial Agriculture Dinas | Coordinator of Agri-Insurance Program |
| 32 | Biyanti | Central Java Provincial Agriculture Dinas | Officer |
| 33 | Aang | Karawang Agriculture Dinas | Head of Agriculture Facilities and Infrastructure Division |
| 34 | Didi Wardi | Karawang Agriculture Dinas | POPT |
| 35 | Ummang Purnawan | Karawang Agriculture Dinas | Karawang Extension Officer |
| 36 | Marzuki | Karawang Farmer Representative | Farmer |
| 37 | Dewi Apriliyani | Kendal Agriculture Dinas | Coordinator for Pesticide Fertilizer and Financing |
| 38 | Arif Rahman Harahab | Kendal Agriculture Dinas | Sub coordinator for Pesticide Fertilizer and Financing |

The Proceedings of the Third Workshop: Data Collection Survey on Promotion for Introduction of Agricultural Insurance in Indonesia

Date and Time : 6 February 2025 from 9.00 to 12:00

Venue : BAPPENAS, Jakarta

1. Background

The Indonesian government has prioritized food security as a central issue in its national long-term development plan. To address this, in 2013, it enacted the Law on Farmer Protection and Empowerment and has since been actively promoting the Agricultural Insurance Program for Rice Crops (AUTP).

Building on this, from 2017 to 2023, human resource development initiatives for agricultural insurance dissemination and a pilot project for a new insurance product, Area-Yield Index Insurance (AYII), were implemented through the JICA-supported "Project for Capacity Development for the Implementation of Agricultural Insurance (CDIAI)."

Despite these efforts, agricultural insurance dissemination remains limited, with only about 5% of paddy acreage covered. Expanding agricultural insurance will require addressing four key issues: 1) enhancing cooperation and coordination among stakeholders, including government and the private sector; 2) designing insurance products tailored to farmers' needs; 3) increasing awareness and understanding of agricultural insurance among farmers and government officials; and 4) establishing an efficient system for widespread dissemination of agricultural insurance.

This third workshop aims to foster a common understanding and shared vision of agricultural insurance among key stakeholders. It seeks to outline specific action points for each stakeholder which are the precondition for JICA's new project to support the expansion of agricultural insurance while also exploring potential directions for future JICA cooperation. By aligning efforts with food security strategies, this collaboration aims to further develop Indonesia's agricultural sector and strengthen its resilience against risks.

2. Objectives

The objectives of this workshop are as below:

- 1) To foster a shared understanding and future vision of agricultural insurance among relevant stakeholders in Indonesia
- 2) To outline specific action points for each stakeholder to promote the expansion of agricultural insurance.
- 3) To explore potential directions for future JICA cooperation

3. Workshop Agenda

The detailed workshop agenda can be seen below:

| Time | Agenda | Remarks |
|-------------|-----------------|--|
| 9:00 – 9:20 | Opening Remarks | Director of Food and Agriculture National Planning Agency (BAPPENAS) |

| | | |
|---------------|---|--|
| 9:20 – 09:50 | Part I: Result of the JICA Survey <ul style="list-style-type: none"> • Summary of the survey results • Key recommendations | JICA Survey Team |
| 09:50– 10:20 | Part II: Consensus Building on the Action Points <ul style="list-style-type: none"> • BAPPENAS Comments and feedback on the survey results • Delivering the presentation of action points of BAPPENAS | Director of Food and Agriculture National Planning Agency BAPPENAS |
| 10:20 – 10:40 | <ul style="list-style-type: none"> • MOA Comments and feedback on the survey results and, • Delivering the presentation of action points of MOA | Director of Agricultural Financing, Ministry of Agriculture (MoA) |
| 10:40 – 11:00 | <ul style="list-style-type: none"> • JASINDO Comments and feedback on the survey results and, • Delivering the presentation of action points of JASINDO | Director of Business Development, Jasa Asuransi Indonesia (JASINDO) |
| 11:00 – 11:45 | Q&A and Discussion | - |
| 11:45 – 12:00 | Part III: Way Forward <ul style="list-style-type: none"> • Monitoring of the action points and potential JICA's intervention area | JICA Survey Team |
| 12:00 – 12:15 | Closing remarks | Director of JICA Headquarters |

4. Workshop Summary

This third workshop serves as the final presentation in a series of workshops conducted under the Promotion for the Introduction of Agricultural Insurance in Indonesia project. It was held on Thursday, February 6, 2025, at the Indonesian Planning Agency (BAPPENAS) office in Jakarta.

This workshop brought together participants from a range of stakeholders involved in agricultural insurance in Indonesia, including representatives from BAPPENAS, the Ministry of Agriculture (MOA), Statistics Indonesia (BPS), JASINDO, JICA, Provincial Agriculture Agency, farmer and extension officer representatives, as well as development partners such as the Indonesian General Insurance Association (AAUI).

In their presentations, BAPPENAS, MOA, and JASINDO outlined several action points they plan to implement in the near future to strengthen the execution of agricultural insurance in Indonesia. These initiatives aim to enhance the effectiveness and sustainability of the program.

4.1 Opening

This third workshop on the Promotion for the Introduction of Agricultural Insurance in Indonesia was opened by Jarot Indarto as Director of Food and Agriculture, BAPPENAS. In the presentation he highlighted several key points regarding the current issues and future plans of agricultural insurance Indonesia, including:

- Agricultural insurance is highlighted in the Mid Term Development Plan (RPJMN 2025-2029) as a key component of national development, aligning with the President's vision to support farmers, fishermen, and food security efforts. It plays a crucial role in managing on-farm risks and ensuring production stability, especially as food security remains a government priority. Beyond protecting farmers, agricultural insurance also has broader macroeconomic implications, helping to mitigate inflation and economic instability. Recognizing its importance, the RPJMN

recommends integrating agricultural insurance into national development policies to safeguard farmers from potential financial losses.

- To ensure effective implementation, BAPPENAS proposes establishing an Agricultural Insurance Coordination Committee or Agricultural Insurance Task Force at the national level. This team will oversee the regulatory framework, roadmap updates, and policy coordination for agricultural insurance. Additionally, BAPPENAS suggests bundling agricultural insurance with other assistance programs to enhance farmer participation and ensure wider coverage. A dedicated budget allocation for agricultural insurance premiums is also considered essential to sustain the program.
- BAPPENAS plans to engage key stakeholders and invite their input in forming this coordination team, with discussions set for the first quarter of 2025. Given current budget constraints, the initial focus will be on short-term actions within 2025 to ensure that agricultural insurance can be effectively implemented within the existing financial framework.

4.2 Presentations

1) Summary of the JICA Survey Results

The JICA Survey Team presented the result of the survey activities, findings from the field survey, and policy directions and recommendations for the future implementation of agricultural insurance in Indonesia. This presentation was delivered by Mr. Hirayama as team leader, with highlighted key points including:

- The main objective of the survey is to establish a common understanding and vision for agricultural insurance while exploring JICA's potential role in food security strategies. Conducted over six months, the survey focused on policy reviews, private sector case studies, farmer perceptions, and follow-ups on previous JICA projects. To support these efforts, three workshops were organized to discuss findings and recommendations.
- The field survey, conducted in Karawang and Kendal with 120 farmers, revealed six key findings. First, there is a high demand for agricultural insurance, with over 95% of farmers in Karawang recognizing its importance. However, despite this demand, many farmers lack knowledge about insurance schemes like AYII and AUTP, highlighting a significant awareness gap. Agricultural Extension Officers (PPL), the main promoters of insurance, face challenges in effectively educating farmers, suggesting the need for a better training system. Additionally, the claim process is seen as lengthy and complex, discouraging farmer participation, even though 70% express satisfaction with AUTP. A lack of payout experience further reduces farmers' trust in insurance programs. Finally, there is potential for bundling insurance with other agricultural programs, as more than 50% of respondents showed interest in this approach.
- In addition to government initiatives, private sector participation in agricultural insurance is growing, albeit on a small scale. Currently, three private insurers—AXA Mandiri, Zurich Insurance, and Bintang Insurance—have introduced pilot projects, focusing on innovative approaches such as weather index insurance (AXA and Zurich) and soil moisture index insurance (Bintang). JASINDO, a state-owned insurer, along with AAUI, is preparing to introduce Area Yield Index Insurance (AYII). Other private companies, such as Blue Marble, Jiva, and Koltiva, are collaborating with insurers to provide agricultural services and support smallholder farmers. Despite differences in scope, public-private collaboration holds potential for strengthening agricultural insurance in Indonesia.
- A comparison with other ASEAN countries highlights key insights. Indonesia, the Philippines,

and Thailand have large-scale agricultural insurance programs. The Philippines, through the state-owned Philippine Crop Insurance Corporation (PCIC), links agricultural insurance with loans and provides premium subsidies, with up to 100% coverage for specific government programs. Thailand integrates insurance with its National Disaster Relief Program, where affected farmers receive disaster relief compensation followed by insurance payouts. The government and the Bank for Agriculture and Agricultural Cooperatives (BAAC) subsidize premiums, ensuring full coverage for farmers with bank loans. Lessons from these countries emphasize that government-driven initiatives, risk-sharing with private insurers, bundling with agricultural programs, and a centralized farmer registry system are key factors in expanding insurance coverage.

- Several challenges need to be addressed to strengthen Indonesia's agricultural insurance system. From a policy perspective, the government should establish a stronger legal framework through a presidential decree or regulatory framework and develop an Agricultural Insurance Roadmap with a clear expansion strategy. A dedicated Agricultural Insurance Coordination Committee is needed to enhance policy coordination between public and private stakeholders. Additionally, existing insurance products should be updated to reflect current farming conditions, while new index-based products should be introduced for crops such as coffee and cacao. The use of digital tools and remote sensing technologies should also be expanded to improve data accuracy and risk mitigation. To increase participation, greater efforts should be made to educate farmers and improve training programs for agricultural extension officers.
- A phased implementation strategy is recommended to ensure sustainable development. In the short term, efforts should focus on forming an Agricultural Insurance Task Force, drafting an insurance roadmap, securing budget allocation, and continuing AUTP implementation. In the mid-term, strengthening the legal foundation and integrating agricultural insurance with other government programs should be prioritized. Long-term efforts should aim at expanding insurance through public-private partnerships, diversifying distribution channels, and introducing innovative insurance products.
- In conclusion, strengthening Indonesia's agricultural insurance sector requires a combination of policy enhancement, improved stakeholder coordination, product innovation, and technology-driven solutions. By aligning these efforts through a structured and phased approach, agricultural insurance can become more effective, sustainable, and beneficial to farmers across the country.

2) Presentation of BAPPENAS's Action Points

In behalf of Director of Food and Agriculture, Noor Avianto delivered the action point prepared by BAPPENAS, including:

- The key points include regulations, the establishment of Agricultural Insurance Task Force, and a roadmap for agricultural insurance. After discussions with the Director of Food and Agriculture and JICA, it was decided to prioritize forming a coordination team for agricultural insurance.
- While the Ministry of Agriculture has a working group (Pokja) for AUTP and AUTSK programs, a broader national coordination team is needed. BAPPENAS is proposed to lead this team, with the Director planning to recommend its formation to the Minister or Deputy. The team's main focus will be to build national commitment and review the regulatory framework, including assessing the effectiveness of Law No. 19 of 2013 on agricultural insurance and identifying additional legislative support.

- Another major task is refining the roadmap for agricultural insurance. A draft roadmap developed by the Ministry of Agriculture and JICA will be updated to include short-, medium-, and long-term strategies. The team will consist of representatives from relevant ministries and institutions, including the Ministry of Agriculture, Ministry of Finance, OJK, BUMNs (JASINDO, Skrindo, Bulog), and financial institutions. Further discussions will finalize team membership and responsibilities.
- Additionally, the team will conduct research, coordination meetings, monitoring, and evaluations. Key challenges include complex claims processes, limited claims payment experience, and the potential for bundling insurance with other support programs. Given budget constraints, the Ministry of Agriculture must allocate funds for agricultural insurance to ensure its sustainability. Exploring insurance bundling with assistance programs, similar to the Philippines' approach, is also recommended.

3) Presentation of MOA's Action Points

Mr. Siswoyo as the Agri-insurance program coordinator in MOA delivered the action points as below:

- The implementation of agricultural insurance in Indonesia began in 2015, initially requiring mandatory participation for farmers receiving government assistance (APBN/APBD). By 2017, the program had allocated 1 million hectares, with 997,000 hectares successfully insured. A roadmap was developed in 2017, starting with an indemnity model for paddy and cattle, followed by expansion to high-value commodities such as red onions. The medium-term strategy introduced an 80% government subsidy with 20% farmer contributions, which will gradually decrease to promote self-sufficiency. In the long term, the government aims to implement Area Yield Index (AYI) and Weather Index Insurance models.
- Despite progress, challenges remain, particularly regarding farmers' willingness to pay for insurance. To address this, Training of Trainers (TOT) and Training for Farmers (TOF) programs will be conducted to increase awareness. Climate risks such as floods and droughts further emphasize the importance of agricultural insurance for protecting farmers. Additionally, efforts to integrate banking support through KUR have faced obstacles, as banks prefer direct control over claims, whereas agricultural insurance prioritizes business continuity. Discussions with banks are ongoing to resolve these issues.
- From a regulatory perspective, Law No. 19 of 2013 (Articles 37-39) mandates regional governments to support agricultural insurance, with the central government providing 80% premium assistance and expecting contributions from local governments (APBD 1 & 2). However, budget allocation remains a major issue. Between 2015 and 2016, alternative funding sources, including private sector partnerships, were explored. Additionally, the role of the National Agriculture Insurance Board needs to be reassessed, as its original composition included representatives from finance, economy, AAUI, and insurance consultants.
- Looking ahead, the roadmap requires updates to reflect current conditions and ensure sustainable budget allocation. The Agricultural Insurance Task Force, coordinated by BAPPENAS, will play a vital role in designing policy strategies and securing funding. The ultimate objective is to transition agricultural insurance from a government-driven program to a self-sustaining system with increasing farmer participation over time.
- The Action Plan for Agricultural Insurance focuses on four key areas to improve its implementation and impact. First, farmer education aims to enhance farmers' understanding and awareness of insurance through initiatives such as Training of Farmers (TOF) programs.

- Second, strengthening synergies involves collaboration with agricultural extension officers (PPL) as the frontline implementers, supported by activities like Training of Trainers (TOT) and bundled programs. Third, the plan emphasizes the design and execution of pilot projects to test new schemes, commodities, and damage assessments, providing better coverage and benefits for farmers.
- Finally, the program monitoring and evaluation (Monev) stage includes collecting feedback and conducting workshops with stakeholders to refine strategies and ensure the continuous improvement of agricultural insurance programs.

4) Presentation of JASINDO's Action Points

Mr. Ocke Kurniadi, Director of Operations at JASINDO, outlined several action points to strengthen the implementation of agricultural insurance in Indonesia, including:

- Agricultural insurance was created to protect farmers, not just financial institutions. In Indonesia, the farming population is aging, and young people are discouraged from farming due to low incomes.
- The average farm size is only half a hectare, making agriculture an unattractive profession. To support farmers, insurance must focus on their ability to pay rather than just their willingness. Currently, 80% of premiums are covered by the national budget (APBN), while 20% is funded by regional budgets (APBD). This program serves as a social safety net, preventing farmers from falling into poverty due to failed harvests.
- Crop failures caused by climate change and other factors often force farmers to sell their land, worsening their financial situation. Instead of relying solely on direct cash subsidies, the government should focus on productive subsidies like agricultural insurance.
- Farmers should also receive health and employment insurance to improve their overall well-being. Unlike other countries such as Thailand and the Philippines, which prioritize bank protection, Indonesia's approach is designed as social security to help farmers sustain their livelihoods.
- The operational costs of agricultural insurance are high. Covering one million hectares means managing two million farmers, requiring extensive registration, monitoring, and claim verification.
- Fraud prevention is a major concern, but traditional survey methods are expensive. To address this, JASINDO has implemented remote sensing technology to verify land usage and farmer activity, reducing costs by minimizing manual field surveys. With this approach, operational expenses decrease significantly while ensuring accurate claim assessments.
- Agricultural insurance models include indemnity-based and index-based approaches. Indemnity-based insurance is currently preferred because the government has not yet fully justified the use of index-based systems. If an index is inaccurate, claims may be paid incorrectly, leading to complications.
- Legal protection must be established before adopting an index-based approach. For now, indemnity-based insurance is used, supplemented by satellite surveillance to detect floods and droughts. However, for claims related to pests and diseases, manual inspections are still required, which can slow down the process.
- Another challenge is claim distribution. Many farmers do not have bank accounts, making it difficult to transfer payouts. JASINDO is exploring a partnership with PTPOS to distribute

claims directly to farmers, ensuring timely payments while reducing the risk of fraud. Since this program is funded by APBN, transparency and accountability are critical. Unlike private insurers, JASINDO does not charge acquisition costs, broker fees, or marketing fees. Premiums are set approximately 20% lower than private market rates, making the program more affordable and sustainable.

- Sustaining this program requires careful financial planning. Insurance claims fluctuate based on climate conditions—ranging from 4% to 8% of premiums—which makes private sector involvement challenging.
- When claims rise too high, private insurers tend to withdraw, threatening the continuity of coverage. A strong auditing framework is in place, with oversight from agencies such as BPK, BPKP, and the KPK to ensure that funds are allocated correctly. JASINDO’s transparency in claim payments and financial processes is a key reason the government relies on it for agricultural insurance.
- Expanding agricultural insurance should be linked to other social security programs, such as BPJS health and employment insurance, ensuring farmers receive comprehensive support. Those involved in national food production deserve subsidies for health and employment protection. By securing these subsidies and increasing farmers’ ability to pay, participation in the insurance program can grow.
- Affordability remains a priority. If rice prices increase, farmers will find it easier to afford premiums.
- The Ministry of Finance plays a crucial role in securing long-term funding through Presidential Regulations (PERPRES), preventing budget cuts and ensuring stable financing. Investing in insurance infrastructure is costly, but advancements in AI and satellite technology are reducing expenses. AI tools like DeepSeek from China have significantly lowered implementation costs. However, the current satellite resolution for agricultural monitoring still needs improvement.
- If agricultural insurance becomes mandatory, a dedicated state-owned insurance company should be established to manage it efficiently. At the current scale of one million hectares, annual premiums amount to 800 billion IDR.
- Expanding coverage to 10 million hectares would raise this figure to 8 trillion IDR per year, justifying the creation of a specialized insurance entity. For Indonesia, the focus should be on building a robust insurance system that supports farmers directly rather than relying on bank-led models. With the right policies in place, agricultural insurance can become a pillar of national food security and economic stability.

4.3 Discussions

After presentations from each stakeholder, workshop participants were invited to provide feedback and ask questions related to the material that had been presented.

| Name and Institution | Discussion points |
|--------------------------|--|
| Mr. Teddy YASI | <ul style="list-style-type: none"> • There are some assumptions from the survey. I think it's just an input because we also ran this insurance program last year. • Initially, there was a subsidy, but from the first season to the second season, the subsidy given to the farmers has been decreasing. So, the farmers still pay. They still pay and buy the insurance. • Our job here is to promote parametric weather-based insurance until the farmers trust and purchase it. However, I want to provide an assumption, not in terms of the product itself, because the product is dynamic. I leave |

| Name and Institution | Discussion points |
|--|--|
| | <p>that to the associates because it is about the willingness to buy and the willingness to pay. That must be asked directly to the farmers, considering the dynamics in the field.</p> <ul style="list-style-type: none"> • But from my perspective, and perhaps also from Mr. Sis and JASINDO's assumptions, we first need to determine whether the insurance will be subsidized or not. I think there must be a firm decision on this. • From comparing with other countries and gathering survey results, I see that government intervention is always a strong factor. So, perhaps this is an explanation for our approach as well. As a civil society organization, we stand in the middle—listening to the private sector, the farmers, and the government. • The key question is: Will this be fully subsidized, or do we aim to educate farmers to understand and eventually buy it themselves? The goal is to ensure that the private sector also sees an opportunity here—both in terms of support and business potential. However, one major issue I see in this program is that it does not involve local entrepreneurs. I believe that's crucial. In JASINDO, for example, there must be a limit to how far the program extends, particularly in claims processing and other aspects. The government and the private sector both have their limitations. • From my interactions with private sector stakeholders, I've seen that their responsibility on the ground is quite significant—not just for agricultural insurance, but also for fertilizers and other aspects of farming. Additionally, I see certain government policies, such as the fixed price of 6,500, as an opportunity to support business models and the private sector. • This program should create an ecosystem. At the village level, local entrepreneurs should be engaged in the agricultural insurance process—whether it's through registration, outreach, or other means. They should benefit from their participation in raising awareness, not just from acquiring customers. The concept of independent agricultural extension officers (PPL) should be part of this thinking. • Secondly, training for PPL is crucial. If we want this insurance to be commercialized in the future, insurance companies must adapt their approach. Renewals will depend on various factors, both internal and external. Some farmers who participated before may not join now due to personal circumstances, while external conditions may support their participation. • If they lack funding, the solution shouldn't always be subsidies—there should be access to financial support mechanisms instead. I believe the government's guarantee of 6,500 could create new opportunities for financing. • Ultimately, building an ecosystem is essential. We need to involve local actors in the agricultural sector, allowing them to contribute while also benefiting. Additionally, I would like to suggest that the working group (POKJA) include off-takers and the association of rice millers. Their involvement could help share risks, making the insurance more sustainable for the private sector. MSMEs should also be represented in the roadmap council. If not, it will be a major shortcoming. • We also want to emphasize that there is a significant opportunity here, and farmers are willing to buy insurance—even those with less than one hectare or even less than 0.5 hectares of land. They are willing to allocate money for insurance. • We just need to strengthen their trust in this program—not as a compliance measure, but as something they can rely on to continue farming. The goal is not just to receive claims but to ensure sustainability in their farming activities. |
| <p>Nugroho West Java Agriculture Office</p> | <ul style="list-style-type: none"> • Over the past two weeks, floods have impacted several regions in West Java, highlighting the need for collaborative efforts. The West Java government cannot address these challenges alone and requires support from stakeholders, including national government intervention. Existing regulatory frameworks, such as Regional Regulation No. 4 of 2018 and |

| Name and Institution | Discussion points |
|--|---|
| | <p>Governor Regulation No. 20 of 2023, outline action plans for protecting and empowering farmers. These include financing schemes for agriculture, yet there is still a significant gap in farmers' understanding of agricultural insurance. Challenges such as the complex Agricultural Insurance for Rice Farming (AUTP) process require immediate simplification to improve accessibility for farmers, particularly in areas like Karawang.</p> <ul style="list-style-type: none"> • Key agricultural roles in West Java include Agricultural Extension Officers (PPL) and Pest and Disease Control Officers (POPT). While PPL officers focus on agricultural education and guidance, POPT officers specialize in managing crop pests and diseases. To further strengthen these efforts, West Java has established specialized task forces for pest and disease control, mirroring approaches like the DENSUS 88 counterterrorism unit. Despite these measures, critical issues persist, such as delays in insurance claim verification. Rapid assessment following disasters like floods is essential to prevent discrepancies in claim approvals. Harmonizing verification criteria between government bodies and insurance providers such as JASINDO would improve the system's efficiency. • Additionally, streamlining insurance payment mechanisms is vital. Alternative channels, such as banks, should be utilized to ease the burden on PPL and POPT officers, allowing them to focus on their core responsibilities. To enhance future implementation, a dedicated organizational structure or team is needed to oversee the agricultural insurance system. This system must address risks stemming from climate change, pest outbreaks, and environmental hazards like floods and droughts. While pests and diseases can sometimes be managed predictably, natural disasters remain unpredictable, emphasizing the importance of robust insurance coverage. • In West Java, maps of endemic pest and disease areas, as well as disaster-prone zones (DPI), have been developed to guide mitigation strategies. However, insurance providers should ensure DPI areas are not excluded from coverage, as no farmer willingly faces disasters. The overarching goal is to provide tangible benefits to farmers, ensuring their livelihoods and security in agricultural activities. Continued collaboration between all stakeholders is crucial to refining the agricultural insurance system and meeting the needs of farmers in an increasingly challenging environment. |
| <p>Anugrah The Financial Services Authority (OJK)</p> | <ul style="list-style-type: none"> • With the issuance of the Financial Sector Development and Reinforcement (P2SK) Law, OJK's role has expanded beyond merely overseeing financial institutions to actively developing the industry, encompassing both banks and non-banks. Our directorate, established two years ago, has prioritized agricultural insurance, recognizing its potential in enhancing food security and improving farmer welfare. • Research, particularly on parametric insurance, has highlighted its benefits, yet penetration remains low compared to other countries, despite Indonesia's vast agricultural sector. The insurance industry is, in fact, prepared—besides JASINDO, 11 commercial insurers have been identified as offering agricultural insurance. However, unlike JASINDO, which is mandated to do so, private insurers operate on a limited, door-to-door basis. A successful example of parametric insurance was seen in Aceh, where a global coffee producer collaborated with an insurer to provide coverage for local farmers. Despite this, no company other than JASINDO has made agricultural insurance its primary business focus. • The main challenges in expanding agricultural insurance lie in accessibility and financial literacy. Many farmers are either unaware of or do not fully understand the benefits of insurance. Some enroll for coverage one year but do not continue due to claim difficulties, which often stem from a lack of financial literacy rather than system failures. Addressing this issue requires cross-institutional collaboration, starting with stronger financial education. OJK is already actively involved in TPAKD initiatives, which promote financial literacy at the micro level, and strengthening partnerships can further enhance these efforts. • Additionally, a key development in this sector is the agricultural insurance roadmap prepared by AAUI, with contributions from JASINDO. This blueprint outlines critical aspects such as policy development, funding |

| Name and Institution | Discussion points |
|---|--|
| | <p>mechanisms, research, capacity building, and aligning supply with demand. Given the importance of coordination, it would be highly beneficial for AAUI to present this roadmap, ensuring that its efforts align with BAPPENAS and other ministries. By fostering multi-stakeholder collaboration and refining policies, Indonesia can strengthen its agricultural insurance framework, making it more accessible and sustainable for farmers across the country.</p> |
| <p>Reinhard Blue Markble</p> | <ul style="list-style-type: none"> • The points raised align with programs we have implemented in Indonesia. Our consulting firm collaborates with a company developing parametric insurance, particularly in Aceh, where nearly 20,000 coffee farmers are now insured under this model. Claim ratios remain manageable, and the program has shown positive results. • Collaboration between government and private sectors is crucial. In Central Sulawesi, for instance, we recently launched cocoa insurance with support from local government, private sector stakeholders, and off-takers. Some discussions explored utilizing village funds or APBD, combined with off-taker contributions, to finance premiums. This model, already applied elsewhere, demonstrates that resources exist—we just need structured cooperation. • A working group dedicated to agricultural insurance, involving both government and private sector stakeholders, could ensure regular discussions and coordinated efforts rather than isolated initiatives. • On the regulatory side, clearer guidelines are needed to accommodate different insurance models—parametric, indemnity, and yield-based. Each has unique advantages suited to different farmer needs, and a flexible regulatory framework would help expand coverage. Some farmers may prefer indemnity insurance for higher-value protection, while smallholders in remote areas may benefit more from parametric or yield-based models, which are cost-effective. A combination of these products could also be explored to enhance coverage. • By strengthening policies, collaboration, and product flexibility, we can make agricultural insurance more accessible and effective for Indonesian farmers. |
| <p>Hirayama JICA Survey Team</p> | <ul style="list-style-type: none"> • To summarize our discussion and define the key action points, we must establish concrete steps for expanding agricultural insurance, particularly for 2025. The insights shared by JASINDO, BAPPENAS, and the Ministry of Agriculture provide a strong foundation, but we now need to outline specific, actionable measures. These steps will serve as critical triggers for potential JICA-funded projects, making them essential for future progress. • The first key action point is the Establishment of an Agricultural Insurance Task Force, as previously outlined by BAPPENAS. This Task Force will be a crucial step toward better coordination and implementation. To ensure accountability, progress should be documented through concept notes or meeting minutes. Second, Securing the AUDP Budget for 2026 is vital. While budget allocation remains a challenge, sustaining the AUDP program is critical for JICA's involvement. This effort requires collective support from the Ministry of Agriculture, BAPPENAS, and JASINDO. If direct government funding is unavailable, alternative funding mechanisms should be explored to maintain program continuity. • Finally, we must advance Remote Sensing Technology for Insurance, a project that JASINDO has already begun in collaboration with BRIN. This initiative should be reinforced with ongoing commitment and documentation, ensuring that progress is regularly reported through activity updates and reports. By committing to these three action points, we can strengthen agricultural insurance, enhance financial resilience for farmers, and create a more sustainable insurance framework for Indonesia. |
| <p>Siswoyo MOA</p> | <ul style="list-style-type: none"> • Budget allocation remains a critical issue for the continuation of agricultural insurance programs. Initially, funding proposals for 2025 and the next five years were submitted to cover both AUDP and AUTS. However, when the DIPA budget was finalized, these allocations were removed. In response, the Director General has formally requested funding twice—in November and January—by sending letters to the Secretary General to emphasize the importance of maintaining financial support for these programs. |

| Name and Institution | Discussion points |
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| | <ul style="list-style-type: none"> • One of the major challenges faced is the timing of claim payments, which is directly linked to the planting season. Any delays in claim disbursement can prevent farmers from replanting on time, ultimately affecting their crop yields and livelihoods. This issue has made it difficult for agricultural insurance to secure top priority in budget discussions, despite its critical role in supporting farmers. • Despite these setbacks, funding for the next five years has been allocated to ensure the program's continuity. Moving forward, we must strengthen our justifications and advocacy efforts to keep agricultural insurance as a government priority, ensuring that it remains a sustainable safety net for farmers. |
| Hashimoto JICA HQ | <ul style="list-style-type: none"> • JICA considers securing the AOTP budget for 2026 as a critical precondition for launching the new Technical Cooperation Project. If the Indonesian government fails to secure this funding, there is a risk that JICA Headquarters may cancel the new project. Therefore, it is essential that not only the MOA but also all task force members actively support efforts to ensure budget allocation. From JICA's perspective, securing this budget is a key requirement for signing the Record of Discussion (R/D). Once the Indonesian government confirms the budget arrangement, the project can proceed with the R/D signing and further implementation. • As an alternative approach for securing budget in Indonesia side, it is important to note that the Japanese government has already approved the new project, which should serve as strong leverage for the MOA and the task force in advocating for the necessary budget. This approval provides a solid foundation for discussions and should be used to strengthen budget proposals, ensuring that the AOTP program remains funded and operational. |
| Ocke Kurniadi JASINDO | <ul style="list-style-type: none"> • The key challenge now is ensuring effective implementation of the program while securing the 2026 budget. Based on past experiences advocating for funding from the Ministry of Finance, it is crucial to justify the economic impact of agricultural insurance. To strengthen our case, we must provide data-driven evidence showing how insurance benefits farmers. This includes conducting a survey of 100,000 farmers to collect data on income, household expenses, education costs, and farming costs, as well as demonstrating how insurance claims contribute to farmers' financial stability and the broader economy. If we can clearly present this economic impact, the Ministry of Finance will be more likely to approve a larger budget allocation, as their focus is on funding programs that deliver measurable economic benefits. • Beyond government-backed insurance, we should explore commercial insurance opportunities for high-demand crops such as coffee, corn, onions, and tobacco. Coffee, for example, requires insurance for off-takers to ensure a stable supply in the international market, while corn is vital for livestock feed, making it another potential insurance market. Onions and tobacco also have market potential, though tobacco faces international regulatory challenges. For commercial agricultural insurance, the off-taker model is key, where instead of insuring individual farmers, insurance is provided to off-takers who rely on stable crop supply. This model ensures that off-takers remain engaged in maintaining production stability, farmers stay committed to farming, and the government can focus on strategic crops like paddy for food security, while market-driven mechanisms handle commercial crops. • For paddy farmers, price stability is another critical issue. Even if farmers receive insurance payouts, a sudden drop in market prices (e.g., below IDR 6,000 per kg) could still jeopardize their livelihoods. To address this, the government should consider price stabilization mechanisms, such as storage facilities and pricing policies, to mitigate risks and complement the agricultural insurance program. By integrating insurance, price stabilization, and strategic funding, we can build a sustainable and impactful agricultural protection system that benefits both farmers and the national economy. |
| Nur Avianto Bapenas | <ul style="list-style-type: none"> • Based on calculations, if one million hectares of farmland were covered by insurance, the required premium assistance would be 144 billion IDR. However, the economic value of this farmland, assuming a conservative yield of four tons per hectare and a low rice price of 10,000 IDR per kilogram, |

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| | <p>would reach approximately 40 trillion IDR. This stark contrast highlights that the cost of premium assistance is minimal compared to the enormous economic value protected by agricultural insurance.</p> <ul style="list-style-type: none"> • This comparison reinforces the critical importance of agricultural insurance in safeguarding national food security and rural livelihoods. Recognizing this, we strongly advocate for the Ministry of Agriculture (Kemtan) to allocate a dedicated budget for agricultural insurance. While there are still areas for improvement, the economic and political significance of this program cannot be ignored. To advance this initiative, we propose two immediate actions: <ol style="list-style-type: none"> 1. Forming an Agricultural Insurance Task Force as soon as possible to coordinate efforts and ensure effective implementation. 2. Organizing another workshop to address key challenges and develop risk mitigation strategies for a more resilient and sustainable agricultural insurance system. |
| <p>Dewi Kendal Agriculture Office</p> | <ul style="list-style-type: none"> • I fully agree that the challenges surrounding agricultural insurance are similar to those faced in fertilizer distribution—both require structured solutions and long-term commitment. If we are to develop an action plan, it must be detailed, structured, and inclusive. Regarding the formation of the Agricultural Insurance Task Force, it is crucial to: <ol style="list-style-type: none"> 1. Clearly define team members and their roles to ensure accountability. 2. Specify responsibilities and execution strategies at every level—national (ministries), provincial, and regency—to prevent dominance by vested interests, as seen in previous teams like KP3 and the food security team. 3. Ensure real engagement at the field level rather than relying solely on high-level MOUs. Concrete directives must be issued to ensure on-the-ground implementation. • Another critical aspect is farmer literacy. Unlike infrastructure projects such as irrigation systems or agricultural roads, the value of insurance is not immediately tangible to farmers. Many still misunderstand or lack trust in insurance mechanisms. The Ministry of Agriculture must enhance farmer education using innovative, engaging methods. One successful approach involved a German program that used game-based learning, allowing farmers to grasp investment and insurance concepts interactively. This method proved far more effective than traditional theory-based training. • For 2026, we must prioritize financial literacy for farmers through repetitive, hands-on training. Many still struggle to understand insurance—similar to how fertilizer distribution challenges have persisted since 2019. The urgency of this issue is evident in Kendal Regency, where severe flooding has destroyed many paddy fields, leaving uninsured farmers in crisis. Many are now questioning how they can access government assistance, highlighting the need for broader participation in agricultural insurance. • To improve outreach, we must adopt more effective communication strategies, including: <ol style="list-style-type: none"> 1. Engaging methods instead of relying solely on theoretical explanations. 2. Hands-on demonstrations showcasing real benefits. 3. Farmer-centered training that delivers practical and meaningful insights. • By structuring the Agricultural Insurance Task Force effectively and enhancing farmer literacy, we can drive greater participation and ensure agricultural insurance truly benefits farmers and national food security. |
| <p>Nursolikin GIZ</p> | <ul style="list-style-type: none"> • Indonesia is actively advancing climate risk financing through a collaborative project with GIZ and ASEAN, focusing on cocoa insurance, while neighboring countries like Thailand and Vietnam prioritize paddy insurance. A significant milestone was achieved yesterday with the launch of a new parametric insurance product for cocoa in Palu, marking progress in: <ol style="list-style-type: none"> 1. Product development tailored to climate risks. |

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| | <ul style="list-style-type: none"> 2. Farmer literacy and training on climate risk mitigation. 3. Financial literacy programs to strengthen financial resilience. • One key challenge identified is weak financial record-keeping among farmers, which limits their ability to manage risks and access financial services. To address this, structured literacy programs have been implemented, including: <ul style="list-style-type: none"> 1. Training on financial management and insurance awareness for farmers and financial partners. 2. Household financial decision-making programs, reaching 2,500 farmers and their spouses in Central Sulawesi (Poso and Sigi) to enhance overall economic resilience. • Additionally, educational modules have been developed to: <ul style="list-style-type: none"> 1. Strengthen financial education for farmers. 2. Ensure long-term sustainability of insurance programs. 3. Enhance resilience in agricultural investments. • GIZ remains committed to supporting Indonesia's agricultural insurance initiatives, ensuring that farmers protect their investments, secure their livelihoods, and strengthen their financial future. |

At the end of the discussion, BAPPENAS, MOA, JASINDO, and JICA agreed with the action points within 2025 as follows:

| Action Points | In Charge | Verification |
|--|-------------------------|---|
| Establishment of the Agricultural Insurance Task Force | BAPPENAS | <ul style="list-style-type: none"> • The concept note • Meeting minutes |
| Securing the AUTP budget for 2026 | Ministry of Agriculture | <ul style="list-style-type: none"> • Budget information |
| Exploring the possibility for utilization of remote sensing technologies | JASINDO | <ul style="list-style-type: none"> • Activity report/ documents |

5. Closing

Yohei Hashimoto from JICA Headquarters delivered the closing remarks, including:

- In the first workshop, the Survey Team introduced the overall concept framework and expected outcomes, reviewed the current position of agricultural insurance in Indonesia's food security policies, and identified key challenges.
- The second workshop shared field survey results, discussed potential solutions, and presented tentative action points, which serve as preconditions for JICA's new project.
- In today's final workshop, stakeholders presented their action points, which were confirmed by participants. Hopefully, this active collaboration continues beyond the survey. Once the direction for agricultural insurance is clear and all stakeholders implement their action points, JICA will proceed with Phase 2 to support its development. We look forward to your progress at the BAPPENAS Agricultural Insurance Task Force meeting and appreciate your cooperation.

END

Attendee List for the Third Workshop

| No | Name | Institution | Position |
|----|------------------------|--|---|
| 1 | Jarot Indarto | BAPPENAS | Director of Food and Agriculture |
| 2 | Noor Avianto | BAPPENAS | Coordinator of Livestock and food, Directorate for Food and Agriculture |
| 3 | Sabila Tri Utami | BAPPENAS | First Planner |
| 4 | I Putu Ikrar S | BAPPENAS | First Planner |
| 5 | Fara Nadhifatuz Z. | BAPPENAS | First Planner |
| 6 | Putri Parha | BAPPENAS | Officer |
| 7 | Farah Geniasty Safiera | BAPPENAS | Officer |
| 8 | Mayang P | BAPPENAS | Officer |
| 9 | Kasim Wibowo | BAPPENAS | Officer |
| 10 | Ajat. S | BAPPENAS | Officer |
| 11 | Imam. G | BAPPENAS | Officer |
| 12 | Ihsan | BAPPENAS | Officer |
| 13 | Syamsul | BAPPENAS | Officer |
| 14 | Siswoyo | MOA | Coordinator of Agriculture Insurance Programm |
| 15 | M. Amin | MOA | Officer |
| 16 | M. Rifky.Z | MOA | Agricultural Infrastructure and Facilities Analyst |
| 17 | Syndra Rahmadani | MOA | Officer |
| 18 | Yulistiana Utami | MOA | Planner |
| 19 | Novijan Janis | MOF | Head of Section |
| 20 | Indra Fajar | MOF | Executive at the Directorate of State Financial Risk Management |
| 21 | Muhammad Anugrah | OJK | Deputy Director |
| 22 | Putri Ayu Sekar | OJK | Officer |
| 23 | Mety Maryanti | BBPSI SDLP | Report Compiler |
| 24 | Arif Handoyo M | BPS | First Functional Statistics |
| 25 | Ocke Kurniandy | JASINDO | Operational Director |
| 26 | Bimo Wira Para | JASINDO | Head of Unit Government Assignment II |
| 27 | Aditya Rahmat Pradana | JASINDO | Head Of Underwriting Government Program Insurance |
| 28 | Dicky Anggakusuma | JASINDO | Relationship Officer for Government Assignment Unit II |
| 29 | F. Nanang Triana | JASINDO | Underwriter |
| 30 | Bena Ratna Sari | JASINDO | Officer |
| 31 | Hashimoto Yohei | JICA HQ | Director |
| 32 | Kawanishi Masato | JICA HQ | Senior Advisor |
| 33 | Kawamura Nonoka | JICA HQ | Officer |
| 34 | Adina Dwirezanti | JICA Indonesia | Officer |
| 35 | Kota Hirayama | JICA Survey Team | Team Leader |
| 36 | Yutaro Takamura | JICA Survey Team | Agriculture Insurance Promotion |
| 37 | Kiyoshi Fukuwatari | JICA Survey Team | Insurance Product Design |
| 38 | Katsuyoshi Sekii | JICA Survey Team | Insurance Product Design (2) |
| 39 | Jailani | JICA Survey Team | Project Assistance |
| 40 | E.Wityasminingsih | JICA Survey Team | Project Assistance |
| 41 | Suganda Formalidin | JICA Survey Team | Project Assistance |
| 42 | Megumi Kubo | JICA Survey Team | Project Assistance |
| 43 | Mori Prananto | AAUI | Member |
| 44 | Teddy Tambu | YASI | Officer |
| 45 | Wahyudi | YASI | Partnership |
| 46 | Peri Andrian Septiadi | YASI | Supervisor of West Java & Central Java |
| 47 | Bagus Prasetya | GIZ | Advisor |
| 48 | M. Nurshaliyan | GIZ | Advisor |
| 49 | Reynhard M | Blue Marble | Head |
| 50 | Gina Gustiani Pitaloka | West Java Provincial Agriculture Dinas | Head of Financing Team |
| 51 | Nugroho Dwi S | West Java Provincial Agriculture Dinas | Officer |
| 52 | Fitriani Zainab | West Java Provincial Agriculture Dinas | Officer |

| No | Name | Institution | Position |
|-----------|---------------------|---|--|
| 53 | Ricki H Napitupulu | West Java Provincial Agriculture Dinas | Officer |
| 54 | Mira Karmina | West Java Provincial Agriculture Dinas | Officer |
| 55 | Yuni | Central Java Provincial Agriculture Dinas | Coordinator of Agri-Insurance Program |
| 56 | Sri Subiyanti | Central Java Provincial Agriculture Dinas | Fertilizer and Financing Officer |
| 57 | Aang Kurniawan | Karawang Agriculture Dinas | Head of Agriculture Facilities and Infrastructure Division |
| 58 | Dadan | Karawang Agriculture Dinas | Officer |
| 59 | Dewi Apriliyani | Kendal Agriculture Dinas | Coordinator for Pesticide Fertilizer and Financing |
| 60 | Arif Rahman Harahab | Kendal Agriculture Dinas | Sub coordinator for Pesticide Fertilizer and Financing |