POLICY BRIEF COMPETITION OUTPUT

Index-based Insurance Through Village Fund Allocation as a Constructive Solution Towards Post-Disaster Agricultural Recovery for Vulnerable Farmers

Policy Brief Finalist Output No. 5

This work is an output of the CEGF and RDI Policy Brief Competition. The views expressed are those of the authors and do not necessarily reflect the views of CEGF and RDI

Summary

According to the latest UN ESCAP estimates, droughts have caused an annual economic loss of roughly US$ 23,308 million to Indonesia. Global initiatives have recommended the use of insurance to protect agricultural livelihoods, but currently most farmers are not aware of the benefits of insurance, and have a low ability to pay. The government has issued Permendesa No. 6 of 2020, which provides fiscal instruments for disaster management, namely *Dana Desa* or Village Fund. Nonetheless, there is still a lack of understanding about Village Fund for disaster related uses. This policy brief provides three policy recommendations for the utilization of financial risk transfer instruments and overall agricultural development. First, provisions of a social safety net for farmers through weather index-based insurance subsidized by Village Fund. Second, Development of a Social and Solidarity Supermarkets (**"SSMs"**) for Post-catastrophe Food Security. Lastly, establishment of an Agricultural Resilience Task Force ("**ARTF**").

Climate Risks and Agricultural Insurance

The agriculture sector is vulnerable to natural hazards and disasters. Crop losses and food insecurity are two examples of the inevitable impacts of agricultural disasters that many developing countries often do not have the safety net to recover from (FAO, 2015). However, ad hoc financial disaster relief is difficult to plan and places significant strain on national budgets, compelling governments to seek long-term risk management approaches. By shifting financial risk, agriculture insurance plays an important role as a risk-hedging tool for smallholder farmers and promotes sector resilience (Sirivunnabood, 2020). As a result, the urgency of alternative financing based on the Innovative Framework of Disaster Risk Financing and Insurance implementation is crucial.

According to the Asian Development Bank Institute ("ADBI"), the appropriate disaster risk financing instrument is determined by the need and stage of the disaster event (Yu & Aleksandrova, 2021). Loans, microcredit, bonds, grants, subsidies and tax breaks, crediting, and impact bonds are frequently proposed as key instruments and incentives to support risk reduction activities. Budget contingencies, reserve funds, and lines of contingent credit are the primary risk-retention financing instruments. Insurance and its various forms, such as mutual insurance, Takaful, microinsurance, agriculture insurance, risk pools, and catastrophe bonds, are examples of risk transfer instruments. One of the financing alternative-based insurance that has been adopted in several countries and has proven to be effective is Weather Index Insurance ("WII").

Compared to the currently established Asuransi Usaha Tani Padi ("AUTP") conducted in Indonesia, index-

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based insurance is a viable and innovative alternative to conventional agricultural insurance policies, as households, businesses, and governments may benefit from them. Their primary advantages include (i) providing farmers with income smoothing opportunities, (ii) facilitating access to credit, which in turn allows them to invest in crops with higher yields, (iii) giving them advanced technological support, and (iv) potentially creating more lucrative markets (United Nations, 2007). Index-based insurance will possibly be an effective and sustainable solution for farmers to deal with shocks such as the aftermath of natural disasters. Although the requirement for high-quality weather data may prevent index-based products from being developed on a large scale, it can be seen as an opportunity because the use of high-quality weather data has major advantages, especially in terms of the disbursement of funds (United Nations, 2007).

AUTP, which is a collaborative program between the government and Asuransi Jasa Indonesia ("Jasindo"), is still facing a lot of challenges. Some of the challenges are adverse selection (a biased selection towards higher-risk participants), difficulties in verification claims, fluctuating numbers of farmers insured, and a very high loss ratio. WII is, therefore, as will be explained in the next section, a viable alternative to reduce or even eliminate market failures in insurance for the agricultural sector in Indonesia.

Index-Based Insurance and Financing Through Village Fund

As an introduction, index-based insurance (weather-based) could be applied based on the compensation given based on a parameter that has already been defined and has to do with dangers (e.g. wind speed, temperature, rainfall, humidity, etc.). For instance, the compensation could be given based on monthly precipitation data aggregated to determine the threshold. The amount of compensation paid to farmers when a disaster happens will be determined by the threshold level which is very compatible with post-disaster agricultural recovery. The assessment of claims is also easier in terms of verification and less expenditure for the verification process.

Payment in index-based insurance, to be specific in an agricultural context, is made based on an underlying index and certain threshold such as weather parameters (e.g. rainfall). Because of this, moral hazard and information asymmetries can be minimized since it is easier to monitor and verify the data compiled, including an adverse selection that is widespread in the current scheme of AUTP. Previous findings show that weather-index insurance can reduce farmers' revenue fluctuation during critical periods (e.g. drought) up to almost 24% or approximately 4 million IDR per hectare (Kusuma et al., 2017).

One of the recent most basic problems of financing in insurance for farmers in Indonesia is the unwillingness of the farmers to buy premium crop insurance. Although the government has provided some sort of subsidy through its National Disaster Risk Finance and Insurance ("DRFI") Strategy in 2018, as previously mentioned in the background, a huge financing gap still needs to be addressed. As an alternative to a partnership with the private sector, Indonesia has a huge bulk of additional budget that can be transferred to the villages where agricultural activity is still persistent. Dana Desa or "Village Fund" is a specialized fund disbursed from the central government towards many rural regions in Indonesia as a part of the scope of authority for the village's autonomy.

In this case, the Village Fund can be used to finance activities related to rehabilitation, post-disaster economic recovery, and infrastructure for other disaster management, as determined by the village authority and Musyawarah Desa (Permendesa No. 6 of 2020). This regulation also focused on infrastructure procurement, construction, development, and maintenance for agricultural and/or fishery business results for food security and productive-scale agricultural businesses focused on establishing and developing superior village products and/or superior products in rural areas after a disaster.

Although it seems obscure, there are several ways in which village funds might be utilized for post-disaster recovery. Some of them include strengthening resiliency through business recovery assistance and provision of agricultural resiliency training. Further, the fund can also be allocated to provide farmers with new tools to work on agricultural land with improved productivity and efficiency.

The use of Village Fund to deal with disasters leaves problems of bureaucracy and technocracy in its nomenclature. Village Fund can only be disbursed through a nomenclature that has been approved at the start of the budget preparation. If it is used for disaster, then there must be a special nomenclature. In the budget system, these funds can be referred to as "ready funds". The provisions are that if it is not used this year, the funds can be saved for the following year.

Legal Basis of Village Fund Allocation for Agricultural Insurance toward Post-disaster Recovery

Law No. 24 of 2007 on Disaster Management ("Law No. 24/2007") emphasized that the Indonesian government is obliged to protect its citizens in case a disaster occurs. To address the issue of agricultural disasters, Article 37 of Law No. 19 of 2013 on the Protection and Empowerment of Farmers ("Law No. 19/2013") introduced the concept of "agricultural insurance". Through this article, the government and regional governments are mandated to protect the farming activities of farmers through (i) assisting the farmers in registering for the insurance; (ii) easing the access towards insurance companies; (iii) socializing agricultural insurance programs provided by insurance companies towards farmers; and/or (iv) assisting the farmers in paying for the insurance rates. Regulation of the Minister of Agriculture No. 40/PERMENTAN/SR.230/7/2015 on Agricultural Insurance Facilities further elaborated that insurance rates of these farmers will be paid using the Indonesian State Budget.

Fundamentally, the implementation of agricultural insurance in Indonesia began with the enactment of Law No. 19 of 2013 on the Protection and Empowerment of Farmers, in which the provisions of Article 37 section (1) mandate that the government and regional governments in accordance with their authority have an obligation to protect farming activities carried out by farmers in the form of agricultural insurance. In Article 5 section (1) of the Regulation of the Minister of Agriculture of the Republic of Indonesia No. 40/Permentan/SR.230/7/2015, agricultural insurance is also emphasized as a way to protect the farmers from the loss impacted by the natural disaster.

Agricultural insurance is the program which is expected as the manifestation for the revitalization of farmer financing and its institutions; prevention of loss of biodiversity and

damage to ecosystems; land restoration and recovery; improvement of agricultural productivity and efficiency towards sustainable agriculture as the form of post-disaster recovery based on the Decree of the Minister of Agriculture of the Republic of Indonesia No. 484/KPTS/RC.020/M/8/2021 on the Second Amendment to the Decree of the Minister of Agriculture of the Republic of Indonesia No. 259/KPTS/RC.020/M/05/2020 on the Strategic Plan of the Ministry of Agriculture for 2020-2024.

In the context of funding allocation for agricultural insurance as the contributory aspect of the post-disaster recovery, based on the National Medium-term Development Plan of 2020-2024, fiscal reform is also aimed at strengthening the quality of fiscal decentralization through performance-based management of Transfers to Regions and Village Fund, as well as improving efficient, effective, and accountable regional financial management, especially that the Transfers to Regions and Village Fund is increasing in the scale of 4.9 - 5.1 percent of Gross Domestic Product ("GDP") respectively in 2024.

Hence, the role of fiscal decentralization or specifically Village Fund allocation for agricultural insurance in the context of post-disaster recovery is pivotal and has the potential to be actualized further supported by one of the big goals of the National Medium-term Development Plan of 2020-2024 and the existence of the Special Allocation Fund for the Agricultural Sector based on the Decree of the Minister of Agriculture of the Republic of Indonesia No. 484/KPTS/RC.020/M/8/2021, which is directed to the construction/repair of basic physical facilities and infrastructure of agricultural development to support the sustainability of food security and increase the strategic agricultural commodities toward the regional government, could be elaborated for the future of funding mechanism within the context of post-disaster recovery on the agricultural sector as necessary as streamlining the role and authority of the central government-regional government.

However, as previously mentioned, AUTP also exists, which is regulated through the Decree of the Minister of Agriculture of the Republic of Indonesia No. 30/Kpts/SR.210/B/12/2018 on the Guidelines for Premium of Rice Farming Insurance. Even so, this agricultural insurance is not "index-based" where in this policy brief, the novelty of the recommendation would be the index-based insurance that could be considered for the implementation toward the disaster financing on the agricultural sector and its recovery.

Other Agricultural Recovery Potential Through Village Fund

The agriculture recovery will refer to the needs identified from post-disaster damage and losses assessment that was measured based on the previous conditions prior to disasters (pre-disaster baseline information). The assessment of agricultural damages and losses should summarize (i) population and income (socio-economic profile of the farmers and their scale of operation); (ii) seasonal and permanent crops; (iii) livestock and poultry; (iv) irrigation assets; and (v) agricultural equipment assets (FAO, 2012).

Following the disaster impact analysis, the agricultural recovery general strategies should be executed based on a priority as follows: (i) quality funding for cash and food-for-work schemes to rehabilitate agriculture-related facilities; (ii) direct subsidy to poor crop growers and immediate repair of vital infrastructure and production inputs to enhance agricultural mitigation

and encourage farmers resuming their work; (iii) provision of animals and necessary veterinary for restoring livestock and preventing animal disease outbreak (FAO, 2012).

Policy Implications and Recommendations

Providing a Social Safety Net for Farmers through Weather Index-based Insurance

WII is expected to address financial vulnerabilities by providing affordable insurance protection against extreme weather, particularly after natural disasters, as well as open access to more inclusive insurance for millions of Indonesian farmers. WII schemes are beneficial because payments are made directly after extreme events in a timely and simple manner.

Nevertheless, the village government needs to ensure that they have their own regulations for the disbursement of the village funds related to the WII that have already been accepted by the people and officials of the villages based on the village consensus. This legal foundation will act as a basis for a roadmap/disaster mapping in each village to ensure budget allocation.

An example is a WII scheme called Syariah Parametric Weather Index Insurance has been implemented in Aceh, Indonesia. The term "Syariah Parametric Insurance" refers to an insurance product in which farmers' claim benefit payments are made automatically based on actual weather data, with no prior claim submission required.

The mechanism for index insurance implementation could also be visualized as follows:

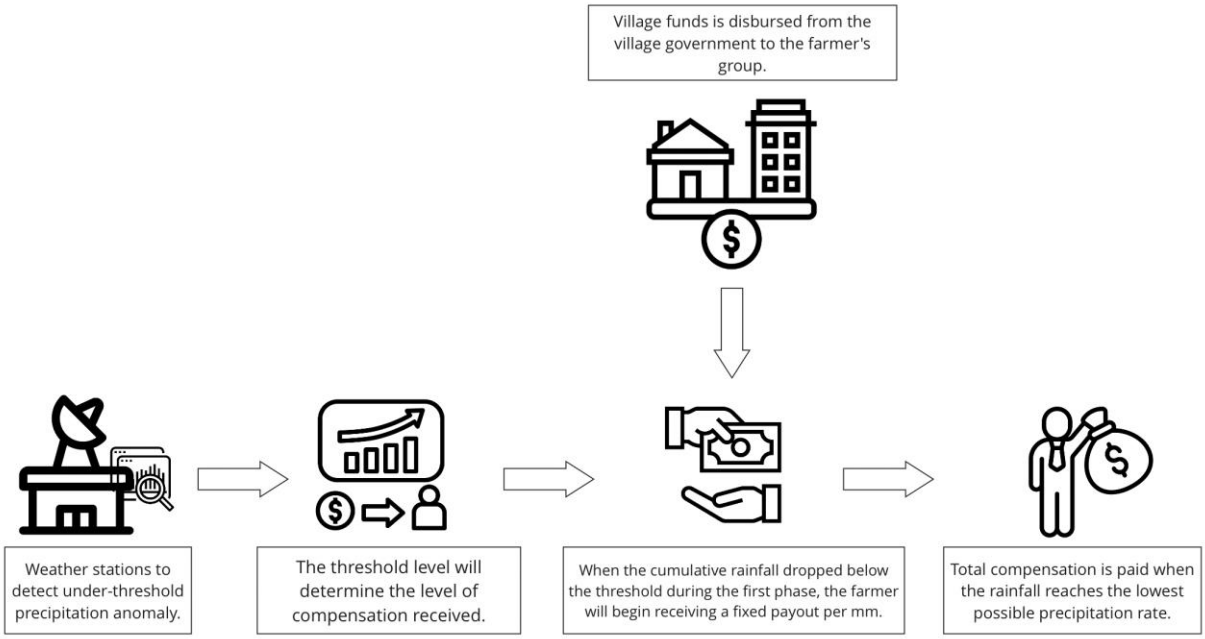

Figure 1. Index-Insurance Scheme Implementation
Source: Authors Analysis (2023)

Integrating Social and Solidarity Supermarkets for Post-catastrophe Food Security

Social and Solidarity Supermarkets ("SSMs"), also known as redistribution stores, have sprung up to accommodate vulnerable and underprivileged groups of people in order to get good food into the hands of those in need in the post-disaster area. Food sources come from SSMs and surplus products come from wholesalers, retailers, governments, philanthropic institutions, and

others. SSMs also provided on-site and off-site social support programs, such as consulting groups that provide education about knowledge in preparing nutritious food and social survival skills in disaster-prone communities.

SSMs is intended to be a win-win solution by selling 'food surplus' (and some non-food consumables) that are not considered for sale in mainstream supermarkets for a variety of reasons, such as mislabeling or damaged packaging and including overstocking at discounted prices for low-income people in poverty enclaves after disaster. Furthermore, greater involvement of religious communities, local communities, local governments, and other supporting organizations is seen as essential in all villages. The following diagram depicts the procedure for implementing this SSMs:

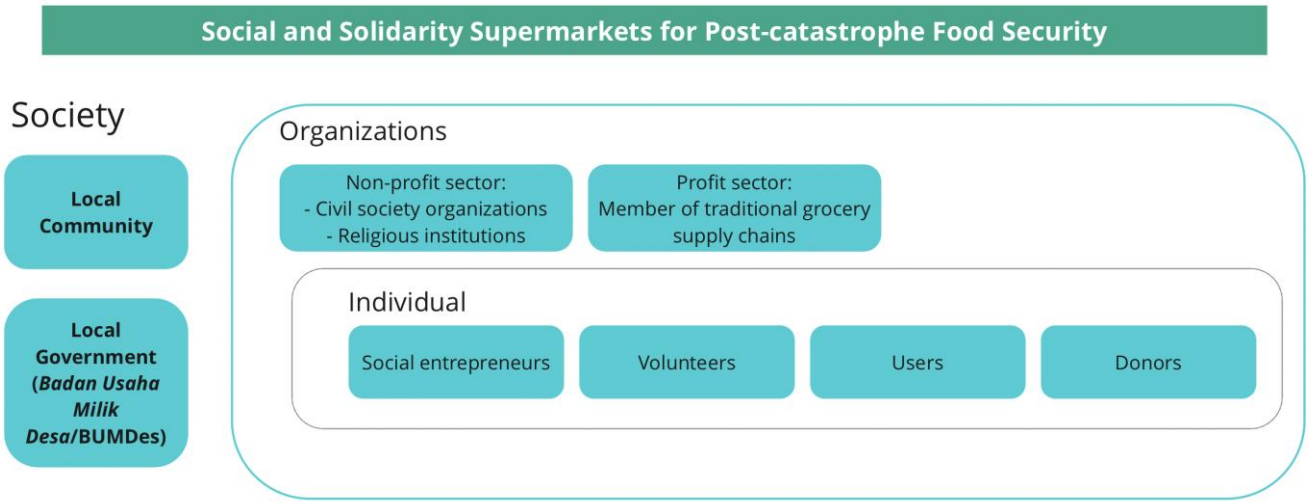

Figure 2. Social Solidarity Supermarket Scheme
Source: Authors Analysis (2023)

The two levels of stakeholders involved in this process are the local community and the government. The Village Government, in this case, can establish a Peraturan Desa ("Perdes") through an agreement with *Badan Permusyawaratan Desa ("BPD")* regarding the use of Village Funds in *BUMDes/BUMDesma* to construct SSMs.

Establishing an Agricultural Resilience Task Force (ARTF)

Implementing an agricultural recovery general strategy by involving relevant authorities, fostering the government and Non-governmental Organization ("NGO") contributions to boost the recovery of agricultural assets and restoration of food security. ARTF will be focusing on food reserves distribution to promptly provide food reserves for the impacted inhabitant, as well as focusing on agricultural resilience. The food reserves distribution will be handled by *Badan Urusan Logistik* ("BULOG") Nasional to provide rice distribution, and *BULOG Provinsi* to provide non-rice distribution. The agricultural resilience will involve the supervision from the Ministry of Agriculture, from which will require active role from *Dinas Peternakan and Balai Pengkajian Teknologi Pangan ("BPTP")* in provincial level to be in charge for the livestock, land, and crops recovery respectively.

Alongside that BPTP will form a coordination with *Dinas Pekerjaan Umum* at the provincial level to recover the impacted irrigation system. Ministry of National Development Planning of the

Republic of Indonesia or *Kementerian Perencanaan Pembangunan Nasional Republik Indonesia/Badan Perencanaan Pembangunan Nasional ("BAPPENAS")* will form a coordination with *Badan Perencanaan Pembangunan Nasional Republik Indonesia/Badan Perencanaan Pembangunan Daerah ("BAPPEDA")* to support the recovery in agricultural livelihood. BAPPEDA will establish a relevant collaboration with related agencies or institutions from other governmental stakeholder or non-governmental organizations to support the recovery in agricultural livelihood, including *Dinas Pekerjaan Umum and BUMDes*. *BUMDes*, under the supervision of the Ministry of Village, Development of Disadvantage Regions, will serve as a center of excellence for agribusiness development in the village by providing transportation, capital, and inviting third parties to become agricultural extension agents for post-disaster agribusiness systems. Along with these governmental stakeholders, these institutions will also create synergy with related NGOs or any agricultural extension agencies to further support agricultural resilience and simultaneously support corporate social responsibility. The diagram below illustrates the authorities involved and the scheme of work for implementing ARTF:

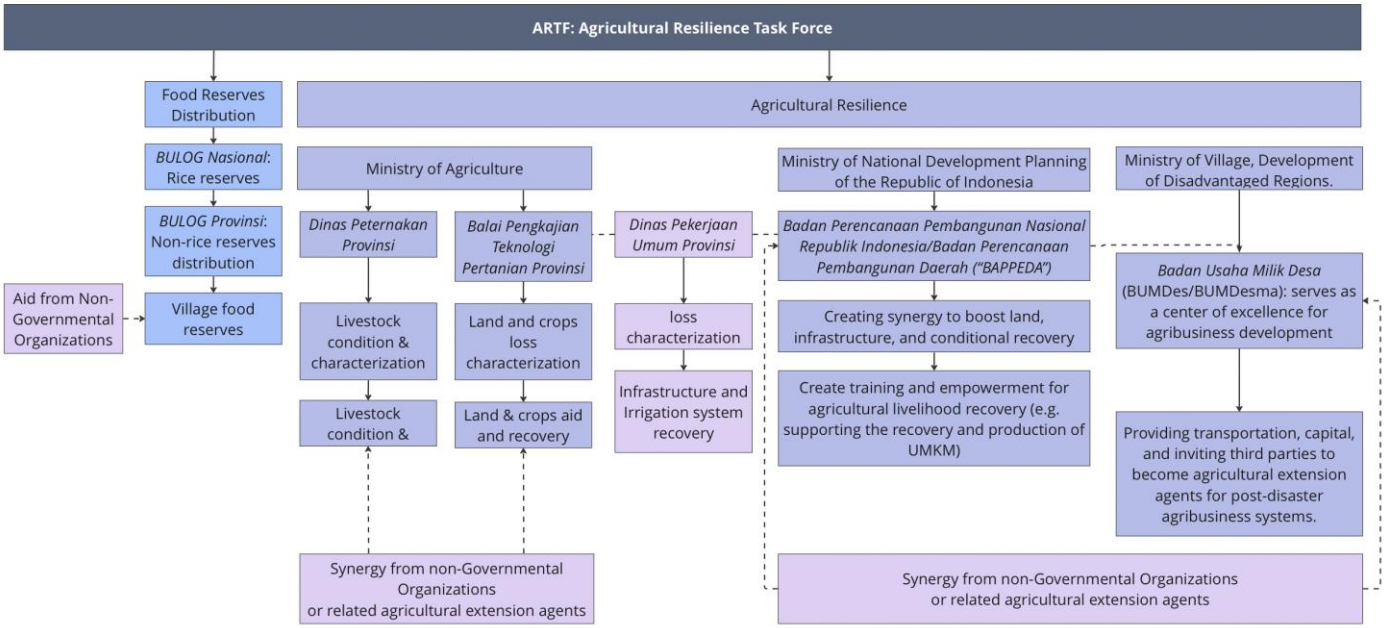

Figure 3. Agricultural Resilience Task Force Institutional Design
Source: Authors Analysis (2023)

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