

TOWARD A RESILIENCE FOOD AND NUTRITION SECURITY IN INDONESIA: INTRODUCTION

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Fourty years ago government leaders and repr esentatives around the world gathered in Rome, Italy at Food and Agriculture Organization of United Nations (FAO) headquarter for the first World Food Conference. At the end of the meeting, they concluded and proclaimed that *"every man, woman, and child has the inalienable right to be free from hunger and malnutrition in order to develop physical and mental faculties."* Through this Conference conducted in November 1974, the government leaders and representatives had also set a noble goal to eradicate hunger, food insecurity, and malnutrition within a decade (United Nations website).

The goal was not achieved. Progress of poverty eradicateion had moved slowly and unevenly. Several countries in Africa and Asia were still strugle to feed their people. The number of people suffering from hunger and poverty was not reduced as expected. In fact, in 2009 number of the poor and hungry people exceeded one billion (FAO, 2009).

Food and nutrition is closely interlink. Fulfillment of food for all people is not only in term of quantity just to make stomach full, but it also should be safe and nutritious. Parallel with the low achievement in poverty eradication, progress in reducing malnutrition has been modest also and uneven among regions. At global level, situation of food security and nutrition reported as follows: In 2012-2014 number of people suffering chronically from hunger was 805 million. In 2013 number of children under five years old that suffered from stunting (chronic malnutrition) and wasting (acute malnutrition) were 161 million and 51 million, respectively; and at the same time those children with overweight was 42 million. In the same year, more than two billion people suffered from micronutrient deficiencies, in particular vitamin A, iodine, iron, and zinc (FAO and WHO, 2014).

Indonesia has made a positive progress in achieving food security and nutrition, but again with slow pace. People live under poverty line in this country in 2015 was around 28.3 million or 11.3% of total population. Percentage of children five years old with under-nourishment was 20.2%, stunting was 38.1%, and wasting was 12.8%. At the same time childen categorized as fat was 12.1% and adut with obesesity was 14.8% (Agency for Food Security, 2014). Facing these dilemmas, it can be inferred that Indonesia currently has a problem of double burden of malnutrition.

At global setting, Indonesia ranked low in term of food security. The Economist Intelligence Unit, using Global Food Security Index (EIU, 2014), reported that in 2015 among 109 countries evaluated, Indonesia food security index was ranked at the 74th position. This position was quite low even among ASEAN member countries, such as Singapore was ranked 2nd, Malaysia, Thailand, and Vietnam were 34th, 52nd, and 65th, respectively. However, Indonesian position based on this measuremet was above Myanmar (78th) and Cambodia (96th).

This global index indicated that food security could be achieved only if the food was available to fulfill people need and at affordable price; regardless food sources and wether produced domestically or imported. This is of course given normal economic, social and

political condition and apply to upper income countries only. For a developing country with more than 250 million inhabitants, Indonesia cannot rely on imported food to meet its ever increasing demand, especially for main staple food such as rice. It is too risky economically and politically. In that context, pursuing self-sufficiency for some important food commodities becomes the right choice. However, this effort should be done effectively and efficiently.

Food security exists when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food which meets their dietary needs and food preferences for an active and healthy life. But it should be noted, as stated in Simatupang paper, assured food access and utilization does not mean assured intake of nutritious food for all people or nutritional security. The root causes of and factors leading to malnutrition are complex and multidimensional. As identified by FAO and World Health Organization (WHO) in 2014, poverty, under-development, and low socio-economic status were major contributors to malnutrition both in rural and urban area. Other factors are the lack of access to sufficient food in quantity and quality, poor infant and young child feeding and care practices, and epidemics. Therefore, malnutrition is not only nutrition or health issues but it is related to socio-economic and food system development.

Food security is the necessary condition, but not sufficient to assure nutritional security. This is an indication of overlapping problems of food insecurity and nutritional security. Therefore at present, approaches in handling food and nutrition issues have been sifted from food security to food security and nutrition or move even further toward food and nutrition security.

Another issue in achieving food security is the state of sustainable and resilience food security. Sustainable food security relates to a country's ability to maintain current resources and increase its capacity in producing food to meet ever increasing demand over time. Meanwhile as written by Simatupang and Pasandaran in a synthesis part of this book, resilience food security defined as capacity of a country, household, or person being food secure in the face of various stressors and in the wake of myriad shocks. Resilience is being about ability coping with risk over time.

Domestically, as reviewed in by Suryana in his article in this book, providing enough food for all people has been considered as one of strategic development goals, at least since Indonesia declared its independence. In the early 1960s a program to increase domestic food production was launched, under the name of *swasembada pangan* (food self-sufficiency). This program has been adopted by the Government of Indonesia since the first President Soekarno up to the current President Joko Widodo. Of course, detailed activities and implementation of this self-sufficiency program were different from time to time.

As a philosophical thinking and a political commitment of the country that stated in the Act Number 18 Year 2012 pertaining Food (Food Law), basic policy of national food development is food sovereignty (*kedaulatan pangan*), food self-reliance (*kemandirian pangan*), and food security (*ketahanan pangan*). Those three concepts are interrelated. At practical level, food security means providing enough food for the hungry, reducing number of the poor's, and improving community nutrition, especially children.

Food self-reliance means achieving food security based on the country's capacity and capability in utilizing domestic resources optimally to produce enough food for its people. In a normal situation, food self-reliance comes as prerequisite to achieve food security. Food

import can only be done if the country experiences a shortage situation in providing enough food for all people from its domestic production.

Food sovereignty means that the government of Indonesia has a freedom in food policy making process and decision, free from any intervention from any party or vested interest, and based solely on national and people interest. In this context, the government may decide to import certain foods for a predetermined amount and at a certain period of time and still has food sovereignty, if the decision based on national interest.

Problems and challenges in achieving sustainable food security and nutrition are rooted from unbalance food supply and demand. On supply side, as frequently mentioned in scientific and government planning meetings, those are: (i) natural resource constraints due to agricultural land conversion, water use competition, and agricultural land and water quality degradation; (ii) impacts of global climate change on agricultural productivity and food production; (iii) the dominance of smallholder farmers in food production system which faced classical problems, namely less access to sources of capital, technologies, information, markets, and inefficiency; (iv) the existence of unbalance food production across times and among regions; and (v) high rate of food losses and food waste.

On demand side, problems and challenges in assuring food security and nutrition are (i) huge number of population with relatively high growth; (ii) high rate of urbanization and women entering labor force that create significant impacts on food demand pattern, among others increase in demand for processed foods; (iii) as an emerging economy moving toward middle income class, food consumption pattern change toward more variety, quality, nutritious, and safety; and (iv) the existence of double burden of malnutrition.

This book discussed problems, challenges, possible solutions, and policy alternatives related to promoting the country resilience food and nutrition security, mainly on supply side of food security system. Most articles in this book discussed means and ways to increase crop productivity and sustainable food production, such (i) coping with natural resources constraints, especially land conversion and land degradation, (ii) dealing with impact of climate change, mostly on strengthening agricultural adaptation capacity, (iii) improving farming system efficiency, including transforming smallholder farmers from subsistence to commercial, and (iv), disseminating agriculture innovation through extension activities.

The first two articles in this book presented current status, challenges, prospects, and ways forward in achieving food security and nutrition. Recognizing the political commitment on food development as stated in the Food Law, Suryana concluded that this country must be able to solve the problems and challenges in achieving food security and nutrition with food self-reliance approach and food sovereignty principle. Five actions should be done to achieve this goal, namely (a) sustainable development of food sector, (b) reliable national food reserves system, (c) enhancing food trade and markets, (d) reducing food losses and waste, and (e) improving food standard and safety.

Meanwhile Erwodo's article discussed current status and prospect of food security, from the view of the role of government of Indonesia in realizing resilience food security, especially on government support and incentives. The author stated that strategy to achieve food security is a complex decision that interlinks economic, social and political aspects. He added that a lot of homework to be done by the government and people of Indonesia to achieve self-reliance national food security. Not just increase food production, Indonesia should also be able to produce good quality of food efficiently to be able to compete in both domestic and

world markets. Government's commitment and efforts to increase national food production capacity is a legitimate objective that needs to be pursued and supported. Efforts to increase national food production should be carried out efficiently and in accordance with prevailing rules and regulations.

Second section consist of three articles that dealt with farming system efficiency issue in producing food domestically. These papers discussed issues on unbalance sources of food production regionally, tranformation of smallholder farmers, and rice production system.

Hermanto's article discused source of major food crop production from regional development prespectives. One of conclusion was that inspite of the declining trend of Java's domination in producing major food crops, the government should still treated Java as the center for production of major food crops, namely paddy, corn, soybean and cassava, at least for the medium or long-run perspective. Java should be maintained as the centre of food crops production, since this island has high and stable productivity of land, endowed with good infrastructures, developed institutions, as well as, high access to markets and supporting systems. At the same time, duse to the trend of declining share of food production on Java, the government should improve food production capacities in outer Java.

The second article written by Wardana, Zaini, and Sembiring discused one of major efforts in increasing food crops productivity and production, that called intensification program. This paper presented government efforts to increase food production, especially rice since the country independence up to present. Integrated crop management (ICM) was explained as a current major effort in intensification program. The authors conluded that new rice production technologies supported by improved irrigation facilities, stable market conditions, and continued institutional support were considered as driving forces to revitalize intensification of rice cultivation. In addition, through changing responsibility on development processes to local governments, redesign steps of implementation, expansion to unfavourable land, and application of information technology, then it is expected that sustainable rice production can be maintained at the level needed to have rice-selfsufficiency.

Sudaryanto wrote about smallholder farmers which was a dominance part of Indonesia food crops farmers. He stated that based on the level of commercialisation, smallholder farms are not homogenous, which need a diferent set of policy for a different category of the farms. For smallholder facing hard constraints, the aproprate development path is to move out of agriculture for better livelihood in the non-farm sectors. In the contrary, for smallholder facing soft constraints there is an opportunity to promote them transform into a viable, profit oriented, and commercial farm. To facilitate their transformation process, specific policy agendas should be implemented on the areas of farm size policy, agricultural innovation, value chains development, financing and investment, risk mitigation and adaptation.

The third section related to land use change, degradation, and climate change. Two papers presented issues on land degradation dan land coversion, and the other two dealt with adaptation on climate change. All four papers concentrated on how to increase food production under difficult sircumstances, as part of efforts to increase food availability domestically..

Article by Dariah and Pasandaran discused problem of land degradation in maintaining sustainable food production. They stated that land degradation in general was associated with factors such as culture, economic development, and politics. The perception

that Indonesia inherited abundant natural resources has become a trap toward behavior to exploit land resources in order to obtain short term benefits without considering the principles of sustainable environments. It was a serious misconception behaviour that created environmental problem with long term implications for sustainable food production and livelihood of society. It involved a loss of beneficial goods and services derived from terrestrial ecosystems which include soil, plant, and animal life and ecological and hydrological processes that operate within these systems.

Paper written by Agus and Mulyani raised issues of land conversion and its impacts to food production. They argued that with the pressure from population growth, the need for land has increased for all sectors. In general, it was reported that forest area had been shrinking, agricultural area had been expanding for high economic value commodities, but had been decreasing for relatively low economic values, including for crops that has high importance for food security, such as rice and soybean. Meanwhile urban, industrial site, and settlement area had been consistently expanding, some of which utilizing highly productive agricultural areas. Community in general was ignorance of the importance of protecting food crop areas due to the very low economic return to land. Conversion of paddy field was an important phenomenon. Despite the social and political importance, paddy field areas did not follow the increasing trend of population growth. It rather decreased, especially in the vicinity of industrial and urban development. On the contrary, oil palm plantation had been expanding at a very rapid pace at the expense of shrub land, forests, and to a lesser extent, other agricultural lands.

Syahbuddin and Las, as well as, Runtunuwu, Susanti and Amien raised their concerns on the impacts of global climate change on the sustainability of food production. Both articles mentioned that the most prominent phenomenon of climate change was the increasing air temperatures on earth's surface, raising sea levels, and increasing frequency of extreme climate events, such as extreme air temperatures on the certain regions and time including the incidence of hurricanes and cyclones, changes in rainfall patterns, and related disasters such as droughts, floods and landslides. The impact of global climate change to Indonesian agriculture was related to the dynamics and changes in rainfall patterns, shifting seasons, air temperature, and more frequencies of extreme climate or climate anomaly, especially the incidences of El-Nino and La-Nina and their trends.

One of major impacts of climate change was the increase of air temperature. Extreme change in temperature has more direct impact with short time lag of the life sectors, including food sector, compared to slow upward trend of average air temperature. Temperature increase will shorten generative stage and along with increasing pest and diseases attacks, eventually will reduce crop yield. Change in rainfall pattern will alter cropping calendar, and delay cropping time. Increase in frequency and intensity of extreme climate events will augment the risks of flood and drought, and of course will further reduce crop production. Sea level rise will inundate productive agricultural lands and increase soil salinity that potentially reduce crop productivity.

Topic on sustainable innovation and extention was presented as chapter four which consists of three articles. Pasandaran, in his paper, explained that historically Indonesia was being trapped by production system of rice inherited from rice field based production system. Despite green revolution was an important driver in achieving rice self-sufficiency in 1984, but

generally accepted view that such achievement was one of the primary reasons for the difficulties to promote diversification of food production. It had also caused the increasing environmental problems stemmed from excessive use of pesticides and chemical fertilizers. On the other hand, food crops production in other ecosystems were relatively limited because of lack of new innovation and agricultural technologies to improve farming practices in these agricultural fields. However, their potential area to produce food crops is much larger than that available for irrigation.

Development of sustainable agricultural model of innovation is expected to be one of the solutions to reverse the trend of natural resource degradation in Indonesia. Consequently, building innovation capacity has to be based on sufficient understanding of the characteristics of farms and related innovations that used to be practiced in various ecosystems. Equally important is continuous capacity building of government service agencies, such as research and extension institutions in order to maintain and even increase its capacity in generating further innovations.

Taryoto's article discussed that research and extension linkages should be underlined as an important factor in developing innovative technologies. Research results will be useless if it is not disseminated properly to the potential users through extension activities. Based on their field experiences on farmers' empowerment, agriculture extension staff may inform researchers regarding problems faced or technologies needed by farmers in their farming activities. Formulation of improve or innovative technologies could be developed through establishing mechanism so that research activities are directed proportionally to directly answer real farmers' need. On the other hand, while extension staff must always keep in touch with researchers, they should also try to formulate, analyze, or even create by themselves the technology specifically desirable in their working area. In brief, efforts to empower farmers through providing new or improved agricultural technologies need strong research and extension linkages.

As part of farmers' empowerment, agricultural insurance was discussed by Pasaribu and Heriawan. In their paper, they mentioned that farm business is embedded with high risk characteristics, specifically toward natural dynamics and natural phenomena. During the past few years, agricultural sector was confronted severe challenges due to global climate change with its climate anomaly. To overcome this problem especially on rice farming, government of Indonesia has introduced technologies that were adaptive on climate change; however farming risks are still there that may cause harvest failure. Agricultural insurance offers to share the burden of farming risks which could be considered as one of the agricultural financial support schemes. This paper explained early stage of agricultural insurance practices for rice farming in this country.

The last part of this book touches on an issue beyond food security, consists of two articles written by Simatupang and Suradisatra. Simatupang made concluding remarks that the ultimate objective of food policy is to assure food intake for each and all individuals nutritionally sufficient for her/his healthy and productive life, called nutritional security. A resilient food security system is a necessary condition but not sufficient to assure nutrition security. Therefore, the 4-dimension traditional food security framework: food availability, access, utilization, and stability, should be refined and expanded to become a 5-dimensions of the new framework of food and nutritional security

He also stated that the policy issues of the Indonesian food and nutrition security now and then may be divided into two policy agendas: short run and long run. The short run policy agenda is to build a resilient national food security system, the necessary condition for nutritional security. The long run policy agenda is to manage the ongoing nutritional transition process. The key issue is the so-called double burden phenomenon, the coexistence of both under nutrition and over nutrition at national, regional, household and individual levels.

Suradisatra presented redemption to social losses to sustain food production. One interesting proposition is that a hard fact on the one-way relation between new technology and food self-sufficiency is inseparable, although in reality they are totally separate due to their different natures. There is no sophistication of technology, then what happens within farmers as the primary subject of agriculture development? It has been shown during the process of green revolution which clearly showed that new technology could speed up food production increase. This clearly provided a positive share in achieving this country food security. He argued further that however, people do not live by food alone. They also need clean surrounding ecosystem, clean water, green vegetation, and more importantly a good social life.

Food security is a complex system. Achieving sustainable food security and nutrition in ever increasing food demand will be very difficult. At the end, besides enough food with balanced nutrition, good quality, and safe; people need proper clothes and shelter with healthy surroundings. This book did not explain all those issues, but only part of the food security problems, mostly on how to increase food production sustainably, with the perspective of achieving resilience food and nutrition security.

REFERENCES

- Agency for Food Security, Ministry of Agriculture. 2014. National Nutrition Strategy Paper of Indonesia. Prepared for FAO/WHO Second International Conference on Nutrition (ICN2). Jakarta. FAO and WHO. 2014. Conference Outcome Document: Rome Declaration on Nutrition. Second International Conference on Nutrition (ICN2). Rome, November 2014.
- Economist Intelligence Unit 2015 Global Food Security Index. An annual measure of the state of global food security.
- FAO. 2009. Declaration of the World Summit on Food Security. Rome, November 2009.
- FAO and WHO. 2014. Conference Outcome Document : Rome Declaration on Nutrition. Second International Conference on Nutrition (ICN2). Rome, November.
- United Nations Website. United Nations: Key Conference Outcomes in Food. www.un.org.development.de/agenda. Downloaded Desember 19, 2015.