

TJF Agrifood Booklet Series 1

# Food Security



# Concept of Food Security

**F**ood security means if an individual or a household has the ability to acquire the food needed to be food secure<sup>1</sup>. Inability to provide food by individuals creates hunger or undernourishment. A recent report published in 2020 found that 690 million people went hungry in 2019<sup>2</sup>. COVID-19 pandemic may add an additional 130 million undernourished people by the end of 2020. It makes one-tenth of the world population have not enough food to eat.

Hunger is the product of chronic undernourishment. This condition occurs when people have a caloric intake below the minimum dietary energy requirement (MDER). When an individual has caloric intake below the MDER in a specific period, it is defined as 'undernourished.' The caloric intake per person is different depending on several factors such as age, sex, weight, and physical activity. The MDER is a threshold for individuals to consume and attain minimum acceptable weight for height or healthy life. The global average of MDER is 1,800

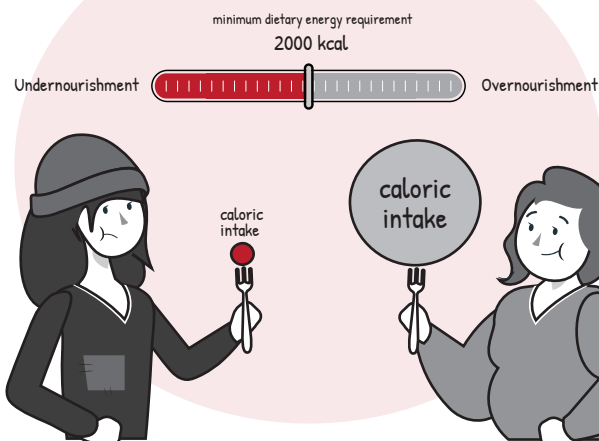
kilocalories per person. In Indonesia, per person needs around 2,000 kilocalories.

The number of undernourished people in the world has been stable at around 800 million people per year since 1990. The rate had decreased from 15% two decades ago to around 10% in 2019. The lower percentage of global undernourishment is because the world population constantly increases, yet the number of undernourished people remains the same. In Indonesia, the prevalence of undernourishment in 2019 is 9.0% of the total population which is equal to around 24.1 million people. A 2.1 million increase compared to the 2018 report.

**"More than 1 in 10 of the world population - do not get enough to eat."**

-the Food and Agriculture Organization of the United Nations

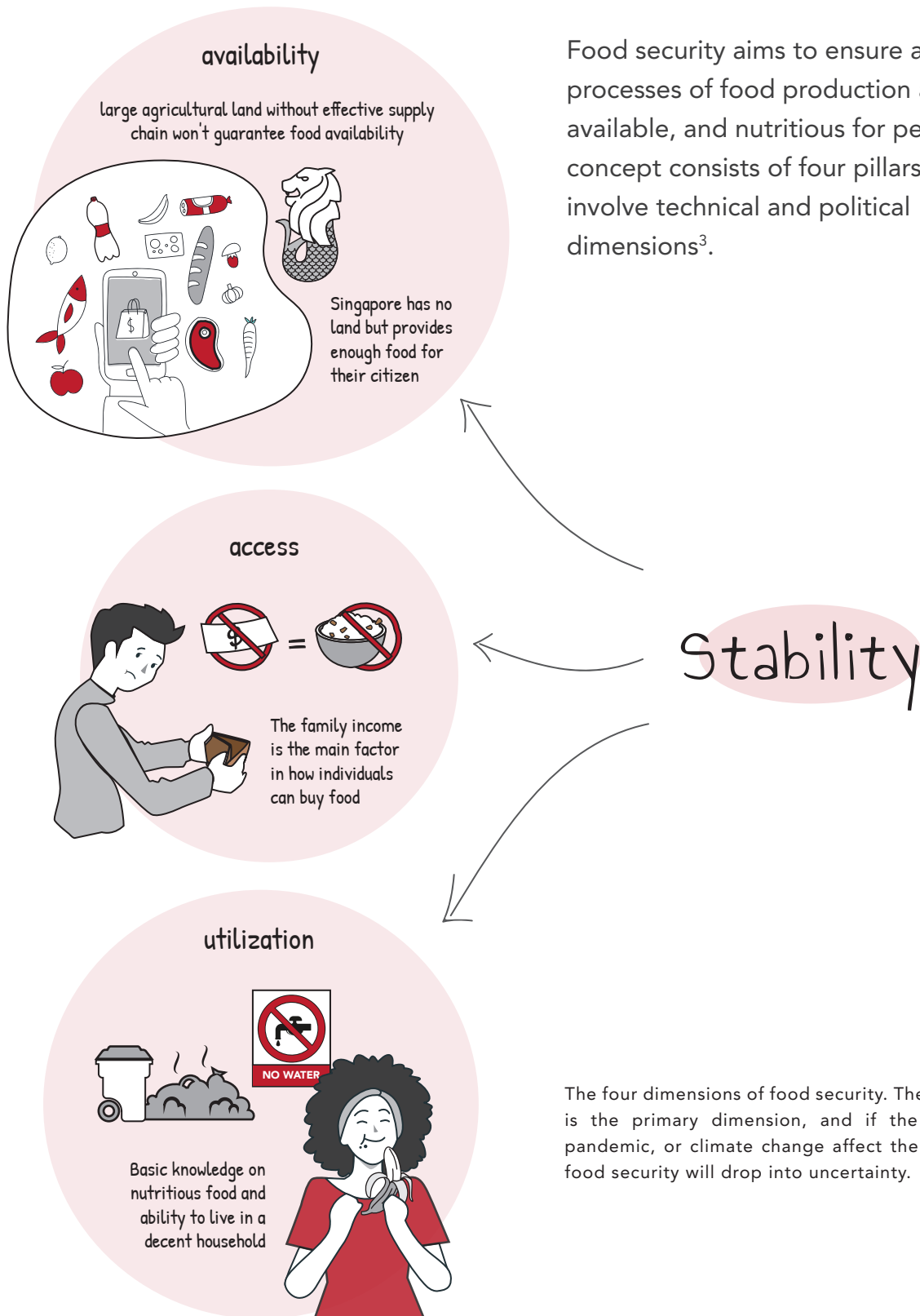
Undernourishment is a sign of Food Insecurity



# Food Security Pillar

It is worth noting that food security encompasses many aspects rather than merely about producing more calories off the land. **The food on your table has been going through a long journey** starting from land preparation, planting, fertilizing, harvesting, packaging, and distributing—before served at your table.

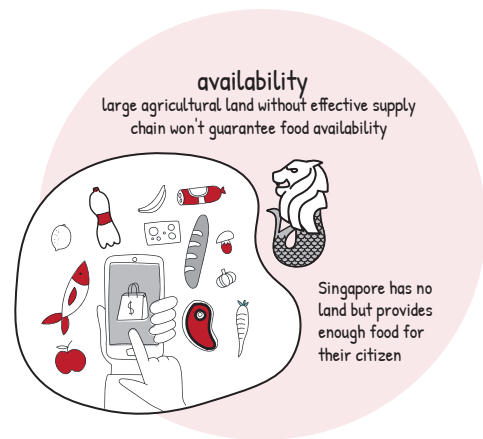
Food security aims to ensure all the processes of food production are secure, available, and nutritious for people. The concept consists of four pillars that involve technical and political dimensions<sup>3</sup>.



The four dimensions of food security. The stability is the primary dimension, and if the conflict, pandemic, or climate change affect the stability, food security will drop into uncertainty.

## Food Availability

Sufficient quantities of food that are enough to feed people in the household, regions, and a country at anytime and anywhere. **Food availability largely depends on food production and distribution.** Some commodities require food import if domestic production is less than the consumption. Owning land for agriculture does not guarantee the country can meet the food demand due to various factors such as low productivity and ineffective supply chain. Singapore almost has no land for agriculture but provides enough food for its people.



## Food Access

It is the ability of individuals to sufficiently acquire food. Oftentimes, the cause of malnutrition is not because of the unavailability of food but lack of income. Some families have their source of food from the garden, yet oftentimes the productivity is low. **Other factors contribute to food access such as politics, economics, and outbreak.** For example, the United Nations estimated the Covid-19 pandemic had increased the global hunger to 270 million in 2020, an 82% increase since 2019. The surging price of food is the main cause of starvation.

## Utilization

Food must be safe, nutritious, and meet the physiological need of an individual. These variables provide **"nutritional psychology"** for people to process healthy food. Clean water, a healthy environment, sanitation, and health care access are part of non-food inputs in food security. People are not secure if they have food but lack of clean water and live in a bad environment.

## Stability

**Secure access to food needs stability.** Bloodshed conflict, war, drought, flood, and climate change are influencing the stability of food production and distribution. Instability of the food market price also hampers people's access to obtain them.



# Food Security vs. Food Insecurity

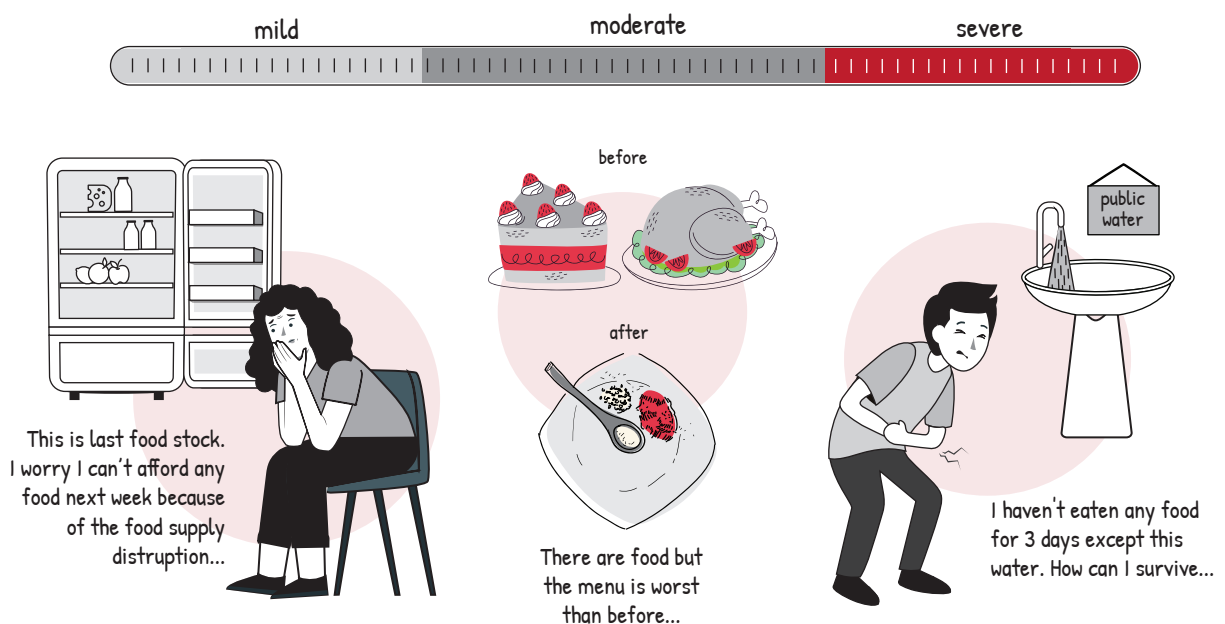
“food insecurity happens when people worry or experience an insufficient amount of food in their life.”

In simple terms, no indication of problems to achieve those four pillars is a state of food security. Conversely, food insecurity happens when people worry or experience an insufficient amount of food in their life. Food insecurity is classified into three terms: mild, moderate, and severe<sup>4</sup>.

Mild food insecurity happens when people worry or are concerned about their ability to obtain food. The moderate level occurs due to a sudden dropping in the ability to producing nutritional food, soaring food prices, or decreasing household income. The impacts are in line with access to food, dietary quality, health, and well-being.

When people experience hunger or go for days without eating, it is classified as severe food insecurity. This condition is resulted from an extended period of poverty, lack of technology, and inadequate means to produce food.

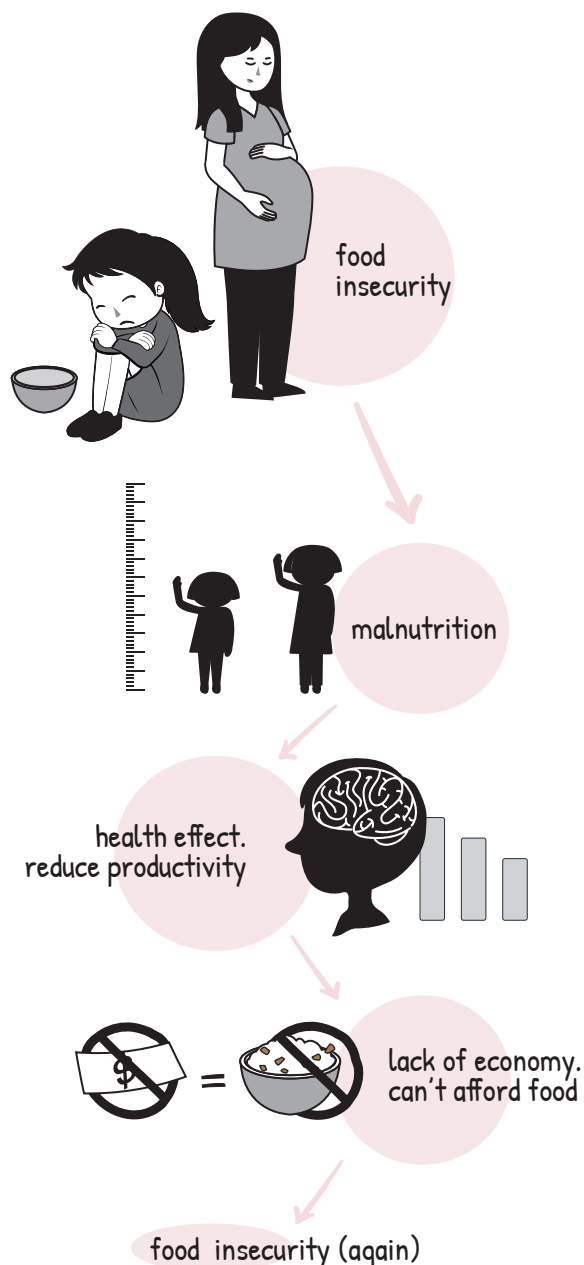
Categories of food insecurity based on the Food Insecurity Experience Scale



Different regions have different main reasons for food insecurity. In Africa, countries with conflict are experiencing the highest food insecurity level. The conflict disrupts and hampers food production, distribution, and access of the population to food. In Indonesia, 10% of people below the poverty line made nexus to food insecurity. Although Indonesia has a large area for agriculture, the most productive area is located on Java Island that faces land and water management issues.

“ Stunting makes children grow below the standard rate and can affect brain development.

The effect of food insecurity is malnutrition which exists in many forms. The effect creates a loop where it affects health and reduces work productivity to gain money to buy food. Stunting is the main concern of the Indonesian government as it impaired growth and development of the children caused by poor nutrition, psychological inactivity, or health problems.



In early 2012, New York Times and the international charity, Save the Children, mentioned that many households in Africa, South Asia, and South America have foodless days, i.e., days when they cannot afford any food. These households even routinely choose at least one day in a week where they will not eat at all.

Children will suffer the most because they get malnourished. This condition can make them physically and mentally stunted. In the future, it can affect their prosperity and well-being. Other impacts are maternal and child malnutrition and low birth weight which sometimes leads to deaths.



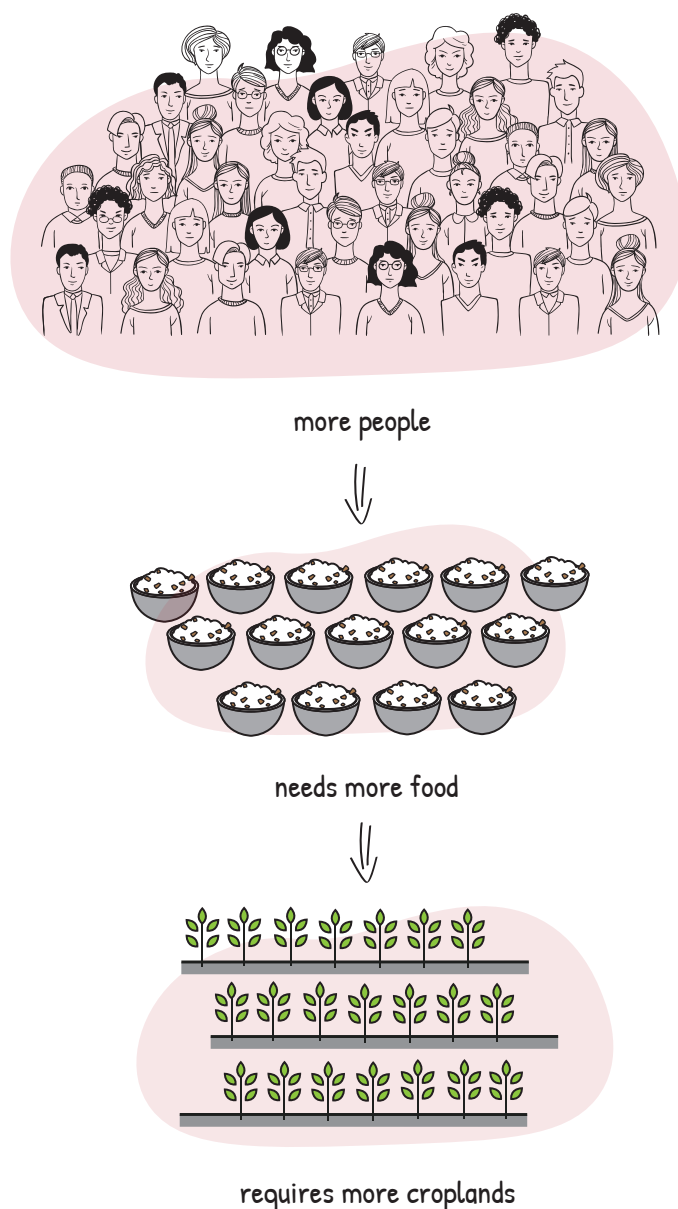
# Future Challenges

With the progressing impact of climate change that could shift the earth temperature and the season forecast, it would be harder to feed the world as it may decrease the food availability as the core of food security. This emerges a single question, **'Can we feed 10 billion people while protecting the environment at the same time?'**

The increasing population demands for larger food production. Various agricultural innovations to produce more food have taken place such as land intensification, vertical farming, urban farming, and other smart farming techniques that are resource efficient. **However, these methods have their own benefits and limitations**, and are not applicable to every region.

Consequently, land extensification is inevitable to create more crop fields. When the number of arable lands keeps shrinking due to conversion into non-agricultural purposes, **utilizing suboptimal lands such as wetland, dryland, or even desert, could be part of the solution** as long as implemented according to sustainability principles.

In 2050, the estimation of the world population is nearly 10 billion people. On average, **10% of the global population are suffering from undernourishment every year**, which means 1 billion people would be food insecure in the next decades<sup>5</sup>. Several solutions have been proposed to increase food security prevalence. Among others, agriculture innovation, food diversification, farmers' empowerment, good governance, and sustainable utilization of lands to produce food.



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