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Achieving Food Security: A Challenge for a Resilient Tomorrow

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Today, one in every nine people go to bed hungry at night. That is almost 800 million people living in hunger, despite there being sufficient food to feed the world [1]. Being an irreplaceable commodity, adequate food is essential for survival. The 1996 World Food Summit defined food security as existing "when all people at all times have access to sufficient, safe, nutritious food to maintain a healthy and active life." Currently, there are about 795 million undernourished people in the world resulting in the unnecessary loss of about 3 million children under 5 years, annually [2]. Food security impacts people of all ages and plays a crucial role in building resilient communities.

Food security rests on three pillars according to the World Health Organization (2015)

- **Food availability:** determined by food production and inventory, efficiency of supply chains, and local and international trade.
- **Food access:** ability to obtain adequate quantities of food, the purchasing power needed, and adequate delivery mechanisms, including social safety nets.
- **Food utilization:** the need to meet dietary needs and cultural preferences.

Food security also means certainty about future meals. Not knowing where the next meal will come from alters economic behavior [3]. Providing for future meals takes precedence over other expenditures, such as education, health, and shelter [3]. Beyond household concerns, food price inflation can trigger the demand for wage increases, igniting a vicious cycle that could discourage private investment and slow economic activity [3]. This reduces investment in human and physical capital, and can damage a country's long-run growth prospects.

The global food system is influenced by structural transformation economically, socially, and culturally. Experience illustrates that vulnerability to food insecurity cannot be fully addressed by economic success alone [3]. Strong growth has been key to the sharp decline in poverty and undernourishment, but hunger remains stubbornly high in many countries and regions [4]. In Asia, over half a billion - about 14% - of its population are undernourished [5] and over 40% of children in several Asian and Pacific countries are stunted [3]. Focusing on nutrition - rather than simple calorie intake - is essential if food security is to be achieved, underscoring the fact that it is much more than raising food production. It is also about reducing distortions in global food markets and ensuring equitable distribution, particularly to food-deficit countries and people [3].

Better Supply Chain (SC) management plays a crucial role in organizing all actors within the SC to minimize food waste and looses, enabling the maximum utilization of available resources. Nevertheless, research suggests that between 25% to 50% of food gets wasted through the SC even if it is suitable for consumption [6]. Causes of food waste/losses along the SC include; failures on forecasts, unpredictable events such as like sudden climate changes or pest attacks, transport /packaging mistakes, manufacturing defects and lack of coordination and information sharing among the actors of the supply chain [7]. SCs need to maintain excess of buffer capacity and inventories to tackle demand variability and be able to satisfy the predictable demand at the lowest cost.

Climate change directly threatens food security [8]. A combination of factors such as increasing frequency and intensity of climate hazards, diminishing agricultural yields, rising health and sanitation risks, increasing water scarcity, and intensifying conflicts over scarce resources, are all linked to climate change [9]. Doing nothing to address the effects of climate change is not an option and investment in the knowledge base required for location-specific adaptations will enable communities to achieve food security and become more resilient.

Ultimately, the world must meet an escalating demand for food on less land with limited access to water. Proactive adaptation policies and investments to enhance agricultural productivity and minimize waste by developing more drought - and heat - resistant crop varieties, using moisture-conserving tillage methods, and improving irrigation efficiency are some adaptable solutions [10]. These will require new technologies, reclamation of degraded agricultural land, and community management of soil and water resources.

Food being a large part of a person's budget, increase in food price especially for the poor, will only increase the burden on their finances. Asian Development Bank (ADB) conducted a comprehensive assessment of the effects of food price inflation on population health - measured by infant mortality rate, child mortality rate, and prevalence of undernourishment - covering 63 developing countries from 2001 to 2010 [3]. The study found that a 1 percentage point increase in food price inflation leads to a 0.2% increase in infant and child mortality and a 0.4% increase in prevalence of malnutrition. The food crisis in 2007-2008 led to thousands of people demanding actions and solutions from their governments [11]. Lack of food supplies creates social instability and is a major factor that can lead to social conflict and political violence [12]. Food security is thus crucial to ensuring human security and stability.

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Lastly, food security is not only about food availability and access but also food utilization. It is important to ensure that people consume adequate levels of nutrients, taking into account the link between nutrition absorption and water, sanitation, and hygiene (WASH) [13]. Being more vulnerable to food price hikes and other shocks, the poor have to adjust their dietary choices to low-quality food that might translate to lower nutrition [3]. This damage is particularly severe among pregnant women and young children, given the elevated risk of both groups to malnutrition and undernourishment [4].

In conclusion, food security is a multidimensional issue. It has become increasingly complex and challenging with the impact of economic growth, changing demographics, consumption patterns, and climate change all interconnected globally. The following actions are proposed to address this challenge:

- Implementing food security interventions and providing access to appropriate healthcare to reduce the risk of undernutrition
- Ensuring food quality and safety in addition to adequate quantity.
- Addressing nutrition security and enabling purchase of sufficient and nutritious food.

References

1. Food and Agriculture Organization, International Fund for Agricultural Development, World Food Programme (2015) Achieving Zero Hunger: the critical role of investments in social protection and agriculture.
2. McGuire S (2015) The State of Food Insecurity in the World 2015. Meeting the 2015 international hunger targets: taking stock of uneven progress. Rome, FAO, 2015. Adv Nutr 6(5): 623-624.
3. Asian Development Bank (2013) Food security in Asia and the Pacific.
4. Association of Southeast Asian Nations, United Nations Children's Fund, World Health Organization (2016). Regional Report on Nutrition Security in ASEAN.
5. Briones RM (2011) Regional Cooperation for Food Security: The Case of Emergency Rice Reserves in the ASEAN Plus Three.
6. Giuseppe A, Mario E, Cinzia M (2014) Economic benefits from food recovery at the retail stage: An application to Italian food chains. Waste Management 34(7): 1306-1316.
7. Cinzia M (2017) A focus on the state of the art of food waste/losses issue and suggestions for future researches. Waste Management 68: 557-570.
8. World Food Programme (2012) Climate impacts on food security and nutrition: A review of existing knowledge.
9. Pachauri R (2007) Reisinger Climate Change 2007: Synthesis Report. Contribution of Working Groups I, II and III to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change Geneva: IPCC.
10. Aggarwal P, Joshi P, Campbell B, Vermeulen S, Kristjanson P (2012) Adapting South Asian Agriculture to Changing Climate and Declining Land Resources.
11. The Habibie Center ASEAN Studies Program (2015) Achieving Food Security in ASEAN.
12. Desker B, Caballero AM, Teng P (2013) Thought/Issue Paper on ASEAN Food Security: Towards a more Comprehensive Framework.
13. World Health Organization (2015) Deworming to combat the health and nutritional impact of helminth infections.