

Feeding Ten Billion: *Building a robust food security strategy*



Foreword

Strengthening food security across the region has been identified as a main goal for the Asia Pacific Economic Cooperation (APEC).

In late September 2016, government leaders and private sector executives from 21 nations travelled to Piura, Peru for the APEC Ministerial Meeting on Food Security. PwC helped facilitate a session between the two groups. Their goal, to strengthen food security serves to address a broader challenge: How to double crop production by 2050 in order to feed a global population, which is projected to exceed 9 billion people?

In response to the global food security challenge that we are now facing, PwC aims to discuss strategic areas of focus that can help accelerate solutions in our 'Feeding Ten Billion' series.

This edition takes a look at the imperative of government driven national food security strategies and the factors that need to be taken into account.



The Food Security challenge

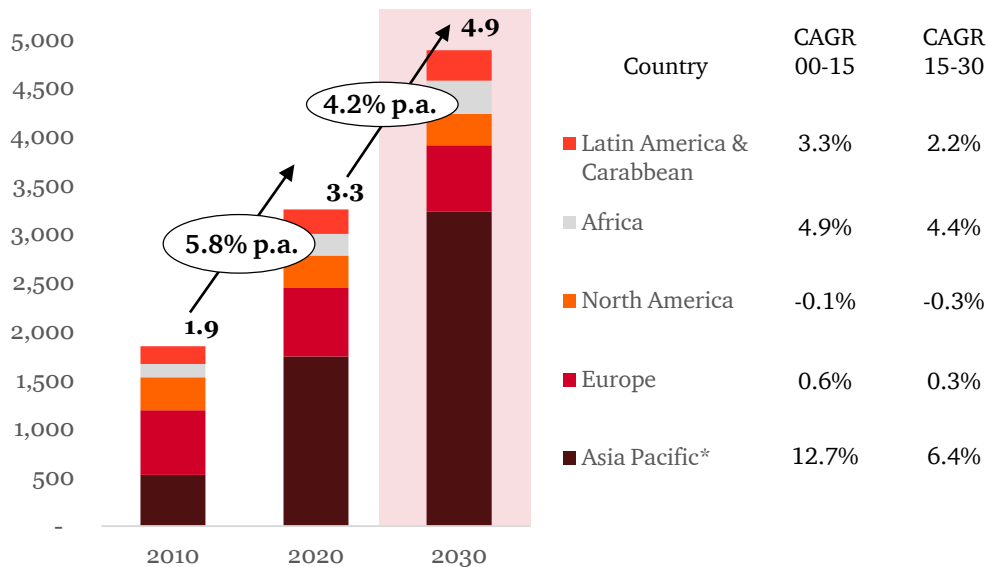
Increasing food demand vs. limited growth in supply

Expanding global population is rapidly driving up food demand

By 2050, the global population will be 35% larger than today – reaching almost 10 billion. Of even greater significance is the upsurge in the global middle class (Figure 1), with economic development shifting diets from simple grains towards more resource intensive animal proteins (Figure 2 & 3). As a result, global food production will need to double in order to meet new, growing demand. In addition increase in consumer food waste and demands for other uses such as biofuels (which can reduce land areas dedicated to food production) - would further exacerbate the issue.

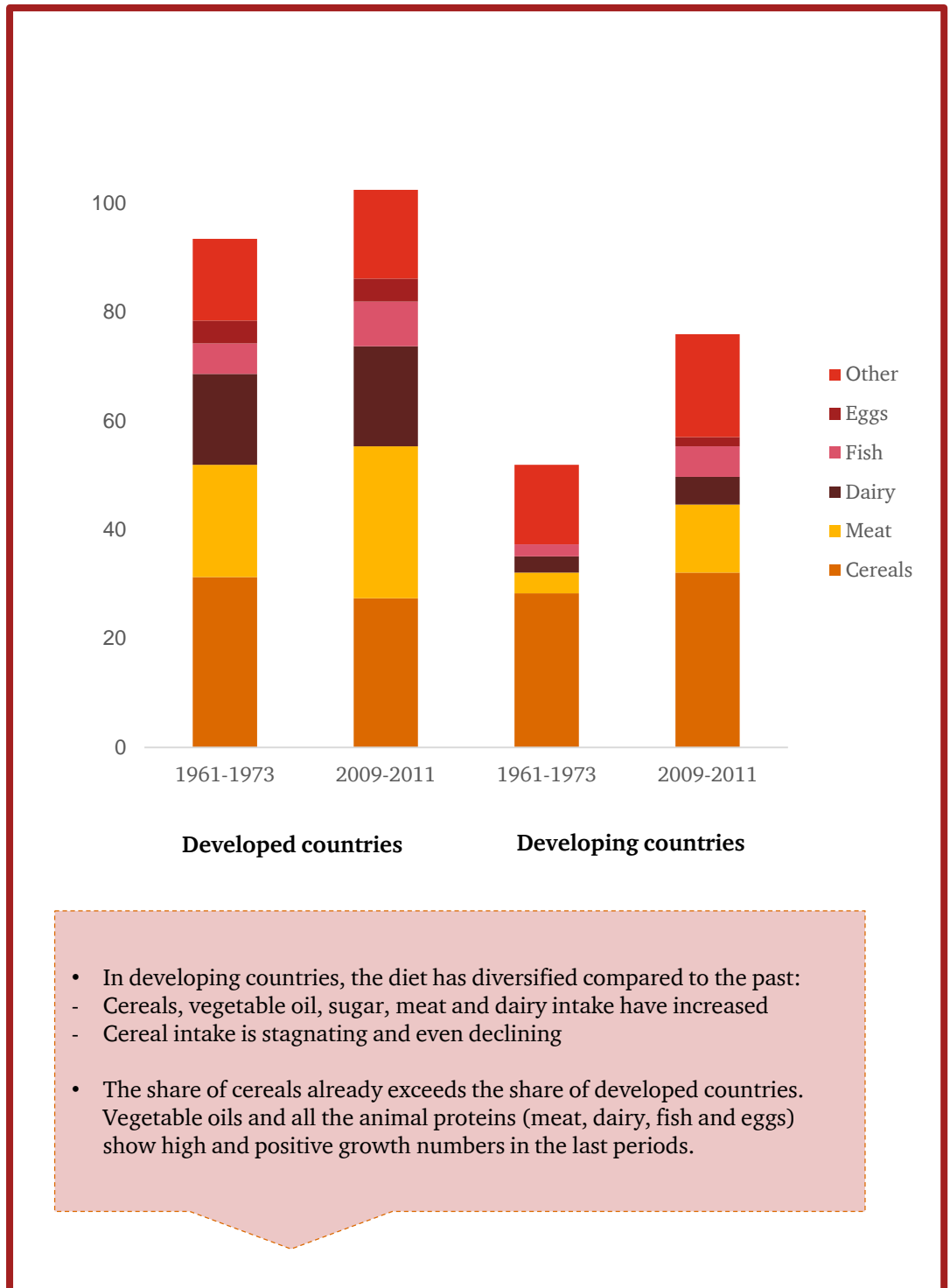


Figure 1: Size of the Middle Class, 2010-2030, Mn inhabitants



Source: OECD Development Centre 2010

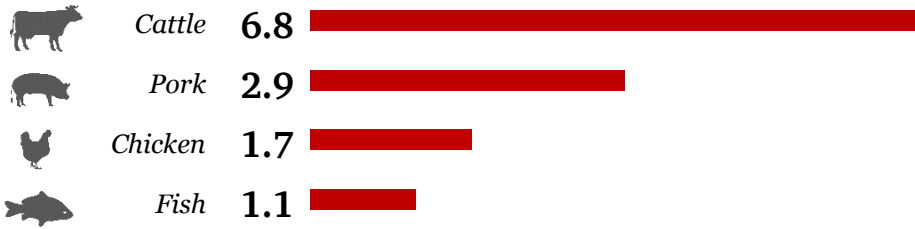
Figure 2: Changes in protein availability per capita of developed and developing countries



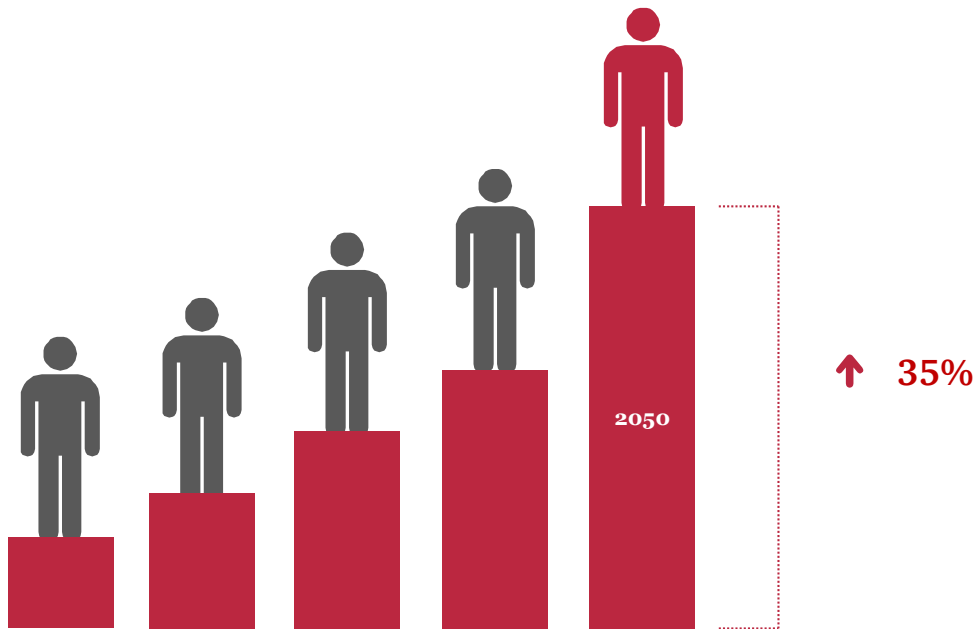
Source: FAO stat database

Figure 3: Forecast population and food consumption growth

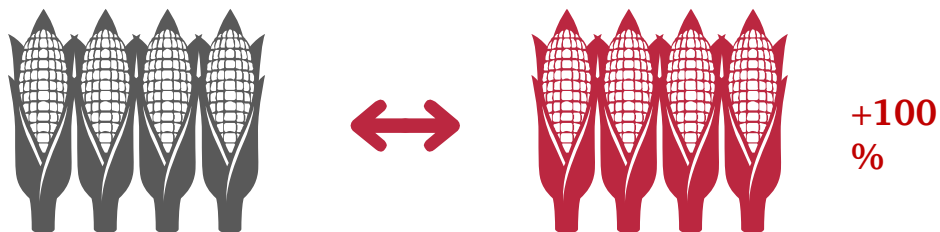
Pounds of feed needed to produce one pound of body mass



By 2050, the global population will be 35% higher.



To feed this population, crop production will need to double.



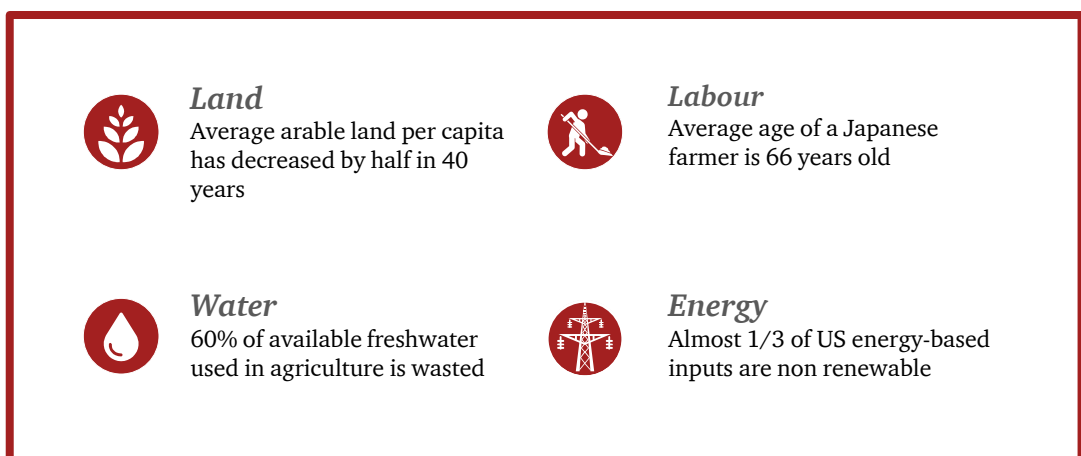
Source: FAO, National Statistical Offices, World Bank, IMF, PwC Analysis

Limited growth in supply

The severity of global food security and need to cope with rising demand is further heightened by the increasing scarcity of four crucial resources illustrated in Figure 4. Available cultivable land is diminishing. Meanwhile, rapid urbanisation - resulting in metropolis expansion and the concentration of non-agricultural jobs - is reducing the agricultural labour force required to maintain agricultural production. Furthermore, production is increasingly constrained by limited water and energy resources. In addition to the existing challenges, there has been rising cases of crop failure as a result of global climate change and weather volatility.



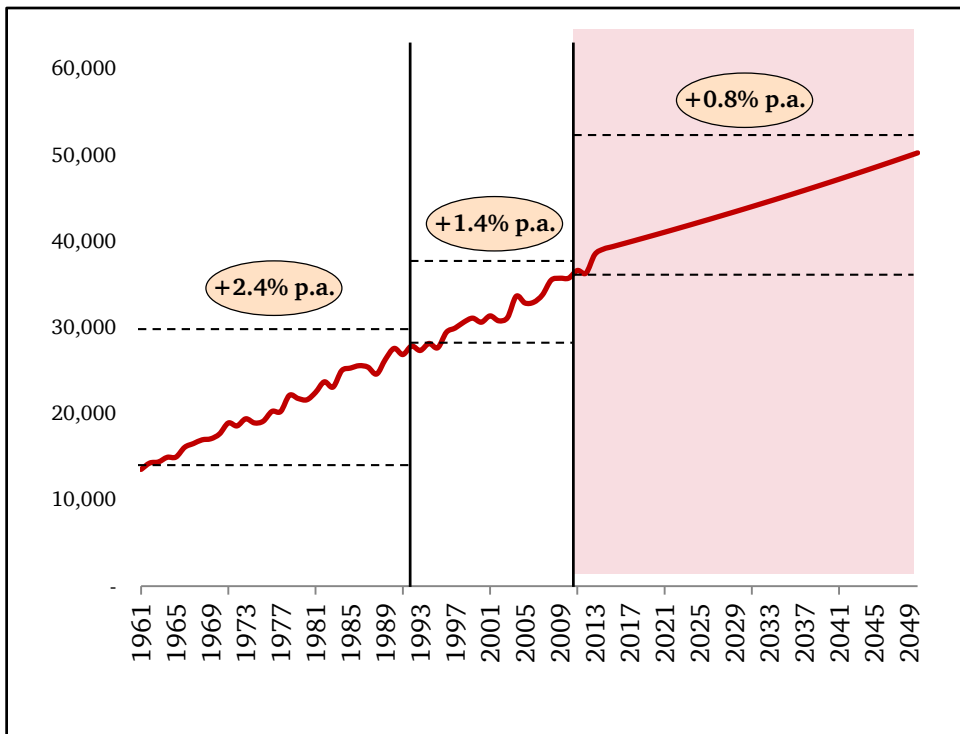
Figure 4: scarcity of resources, in 2016



Source: FAO, National Statistical Offices, World Bank, IMF, PwC Analysis



Figure 5: Total cereals yield increase in the world, for 1961-2050



Source: FAO stats

The burning issue

The necessary improvements in supply will not be achieved under the current status quo. Considering that the projected total crop yield growth between the present and 2049 is expected to be around only a third of what was achieved in the 1960s (Figure 5), the growth of demand from the global population will out pace that of food production.

This indicates that a way must be found to produce more food from less resources, or we will face future where there will not be enough to feed the global population.



Pressing need to act now

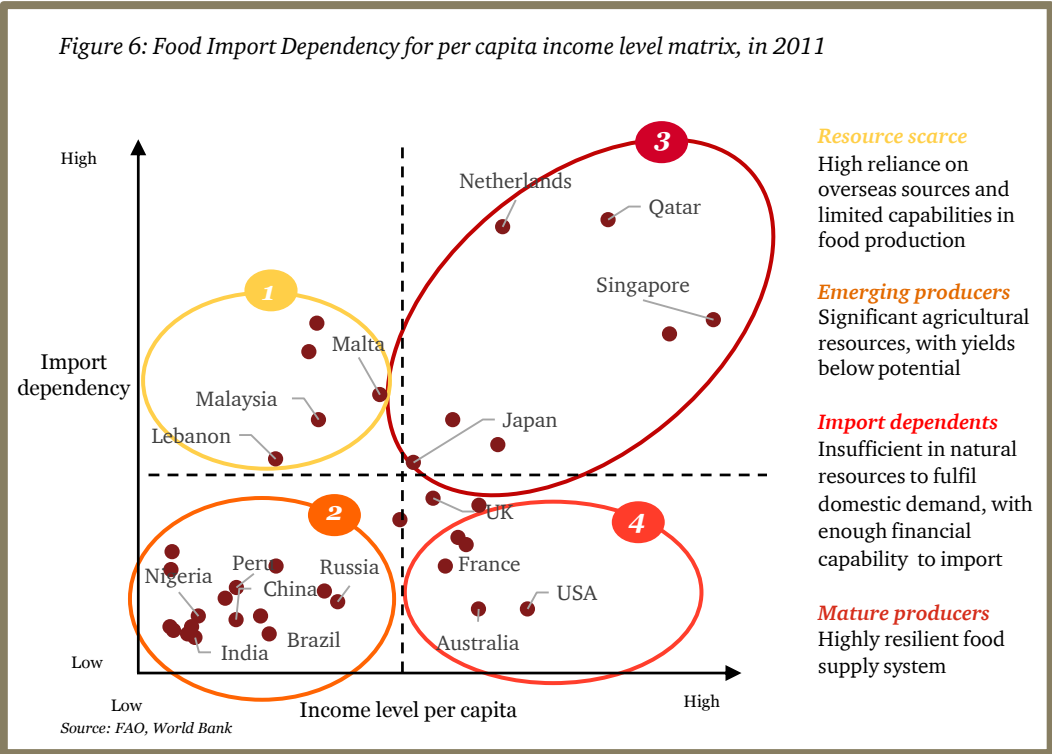
Starting with mapping out a food security strategy

Feeding a population of millions of inhabitants is a tricky challenge for a country that requires to take on numerous actions and deal with various actors. To handle this efficiently, governments must consider starting by identifying their short, mid and long term objectives, and, based on their capabilities and exposures, start building a food security strategy to achieve them.

Among the underlying factors policymakers need to consider when mapping out a food security strategy include:

1. Identify your focus

An effective food security strategy begins with identifying the potential risks and their level of exposure, keeping in mind that all approaches as well as solutions need to be tailored to characteristics of an economy, which at large can be grouped into four categories (see Figure 6):



Note: Import Dependency is calculated by Import and Domestic Supply data on FAO. Singapore import dependency is an estimate based on government statements

Resource scarce economies face the most pressing threat given their high reliance on overseas food sources, coupled with limited capabilities in food production. Support for smallholder farmers, as well as increased investments in infrastructure (such as working cold supply chains or adequate storage to combat huge levels of production waste), and distribution of low-cost production technologies are key to managing food security in these markets over the long term.

Emerging producers have significant agricultural resources (including land and labour), but crop yields are often well below their potential. The transfer of best-practice techniques and technologies can deliver large increases in production and lower volatility, thereby promoting resilience in the national food supply, saving valuable overseas currency and playing a critical role in resolving the overall global food security challenge.

Import dependent economies such as Saudi Arabia and Singapore cannot serve domestic demand through local production. However, this does not imply the absence of food security. Singapore tends to score well in food security indexes, which is achieved by:

- Building the infrastructure and relationships necessary to make Singapore a preferred trade partner
- Diversifying its food import sources
- Supporting specialised local production in key segments
- Investing in and leveraging advanced and efficient technology solutions
- Establishing and seeing through coordinated cross-government plans (ensuring effective execution and management)

Mature producers such as the US, Australia and Europe already have a resilient food supply system, and view food security as a matter of critical national importance. The key concerns for these markets lie not so much in failure of food production but in other risks such as contamination, food waste, food health and safety issues arising from more complex food production processes in the supply chain.

"Enhancing trust in food is a growing concern in a climate where public confidence has been rocked by food safety failures.. Governments and food companies.. are being challenged as never before as basic fundamentals of trade and food supply are transformed"

*- Craig Armitage, PWC Global
Leader of Food Supply and Integrity
Services*

2. Ensure a balance

There is no silver bullet to deliver food security. Excessive reliance on a single policy tool can lead to market distortions and may prove ineffective be if unexpected risks materialise. Rather, the strategy should embrace a wide range of policy tools such that if one area/threshold is jeopardised, other measures are in place to ensure that the ‘ball’ is not dropped.

A critical task for policymakers is to balance the efficient markets necessary for promoting a well functioning domestic food sector with the a degree of stability as well as flexibility required to satisfy security concerns. Singapore for example maintains a free and unregulated market for basic commodities such as rice; but keeps a careful eye on stock in the system, in order to be protected in times of crisis.



3. Enhance international collaboration

A robust food security strategy cannot afford to be inward-looking. No country today fully serves its own food requirements. Even in net exporting countries, a typical consumer check-out basket will include globally sourced products. As food crises tend to be locally concentrated, an enhanced/diversified food trade network can help increase food shock resilience and avoid tendency of resorting to beggar-thy-neighbor policies during difficult times.

Eliminating the most evident pain points within the international supply chain can have immediate and real improvements to food security. This has been a focus for APEC’s work, especially alongside the APEC Business Advisory Council – and is already demonstrating results, such as reducing trade times, and increasing percentage of shipments meeting quality criteria (APEC Policy Support Unit).



"Whilst traditional border protective measures such as customs duties and quotas are reducing, non-tariff barriers such as international trade regulation and documentation requirements are on the rise, no less so for businesses moving food products. They can face a bewildering array of customs and port inspections, regulatory restrictions and bureaucratic requirements, ranging from simple product standard certificates, to pre-shipment inspections and certifications of authenticity. These add - often unpredictable - costs and - even more critical for perishable goods - supply chain delays".

- Frank Debets, PwC World Trade Management Services Managing Partner

4. Intra-government cooperation

Food security concerns cut across a wide range of ministerial and government portfolios – from economic and education policy to trade and infrastructure investment, R&D support and food regulatory bodies. In our experience, it is critical to engage each of these departments and for them to act in a coordinated manner. At the same time, a food security unit with clear roles and responsibilities as well as authority is required to coordinate and ensure that recommendations are implemented. Countries such as the UAE have done this well by establishing a Food Security Committee to drive initiatives on the issue.

5. Engaging all stakeholders

Finally, an effective food security strategy must engage all stakeholders, especially the private sector, which can serve as a powerful engine in driving the roll-out of new technologies, best-practice expertise, as well as in identifying weak points in the supply chain to be remedied.

Our work with leading food businesses shows that resilience of supply is becoming an ever more important competitive axis, in addition to cost efficiency and market positioning.

Similarly leading investors – whether venture capital, private equity or sovereign funds – are showing an increasing focus on the agribusiness space, recognising the potential for innovative businesses to address key food security challenges.



Moving forward

During times of uncertainty, governments are usually the first to lead the move in addressing nation-wide/global issues, such as food scarcity. As food security challenges differ from economy to economy, a long-term strategy addressing issues distinctive to each market must be mapped out.

In addition to this, governments must find a balanced approach, such as developing free-trade agreements and helping agribusinesses invest in infrastructure, to provide stakeholders the support needed for them to align their businesses and/or operations to the greater goal.

Having the right team, task force and/or council overseeing the overall direction in mitigating food scarcity and is a first step forward. To further accelerate developments, it will be integral to invest in strategic infrastructure, leverage on technology solutions, increase public-private-partnership opportunities moving forward and at the same time makes sure that solutions are sustainable in the long-term.



Get in touch



About the Author

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