

Strategic Analysis Paper

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Hungry Neighbours? Indonesia's Food Strategy and Water Security Future

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Key Points

- Indonesia currently has a low level of food insecurity. Food supplies are theoretically adequate to feed the population, however inefficiencies in distribution systems across the archipelago restrict access to food products at prices affordable for the nation's poor.
- In October 2012, the Indonesian government instituted a 90 per cent self-sufficiency target as part of new National Food Laws to reduce Indonesia's reliance on food imports.
- The self-sufficiency strategy is at odds with the goal of improving long-term food security. The plan faces a range of challenges, including inflationary pressure, corruption and a lack of comparative advantage in some areas of agricultural production.
- Despite abundant supplies, a large portion of Indonesia's population lacks access to reliable water sources. Major infrastructure development is needed to ensure improved water security to 2025.

Summary

Through a combination of domestic agricultural production and food imports, Indonesia currently maintains food supply levels adequate to feed its population. Due to inefficiencies in distribution systems and persistent poverty a low level of food insecurity exists in the country, particularly amongst rural populations. In response to concerns about supply disruptions, Indonesia implemented a food self-sufficiency policy in October 2012, aiming to

meet 90 per cent of the country's food needs from domestic supply by 2014. The ambitious plan is an exercise in economic nationalism rather than a concerted effort to ensure the accessibility, affordability and availability of food supplies in the long term. Current production shortfalls, inadequate investment in agricultural development, inflation, a lack of comparative advantage and widespread corruption make it unlikely that Indonesia will achieve self-sufficiency in the allotted timeframe.

Water security is a significant national challenge. Indonesia receives high levels of rainfall, however poor water management and aged and inefficient infrastructure mean that only half of the population have access to an improved water source. Major government funding of infrastructure development is required for Indonesia to secure sustainable water supply for its population.

Analysis

Indonesia's Current and Future Food and Water Challenges

Indonesia's food security situation has improved considerably over recent decades and the prevalence of malnutrition has decreased significantly. Despite these achievements, 21 million Indonesians - nine per cent of the country's population - remain undernourished. This suggests that food supply is currently inadequate to meet demand for large sections of Indonesian society.

Although the country receives abundant rainfall, water security remains a significant national challenge. According to the World Bank, in 2010, under half of the population had access to a sustainable source of safe water and only 25% were connected to piped supplies. Consumption of 'unimproved water supply' in urban areas and deficiencies in water infrastructure in rural areas, lead to serious health issues amongst the population. The economic cost of waterborne diseases and the consequent reduction in labour productivity are substantial.

Indonesia is currently the world's 4th most populous nation, with over 250 million people. If the current annual population growth rate of 0.99 per cent continues, Indonesia's population will grow to over 280 million by 2025. This will place significant pressure on the country's already strained food system and water infrastructure.

The level of Indonesia's food and water demand in the period to 2025, will be determined by its demographic transition. It is currently experiencing rapid urbanisation (2.45% p.a.) and has a growing middle class. Strong economic growth has meant that the number of households earning over \$5000USD per annum rose from fewer than 3 million to 60 million between 2000 and 2007¹. Calorie intake per head is projected to increase to 2025, as rising incomes lead to increased consumption of protein, dairy, pre-packaged and high sugar foods. These trends largely mimic worldwide experience of populations undergoing sustained economic growth.

While incomes are rising dramatically, approximately 10-15% of Indonesians still live under the national poverty line of \$22USD per month and half of all households live only just above

the line. For these poor households, food remains a large part of household expenditure. Food and water demand to 2025 may well be characterised by a growing inequality between the demand profiles of the newly wealthy and the bulk of the population who remain in poverty.

On the whole, food and water demand will rise as the population grows and becomes wealthier. This will place pressure on both the existing food system and the struggling water infrastructure network, creating significant challenges for the country.

Water Security

Water Demand

Water demand in Indonesia is currently being driven by economic growth and rural-urban migration. Burgeoning urban populations in cities such as Jakarta and Surabaya are placing strain on municipal water sources. Meanwhile, Indonesia's diversifying economy is producing increasing demand for water from the industrial sector, which will compete with demand from the agricultural sector. The expectation is that industry will be allocated a greater share of water resources in the future. Currently, the agricultural sector uses the bulk of water resources; over 80 per cent of total water usage is used for irrigation. Damaged irrigation networks across the country limit the efficiency of water usage in the sector; as a result, recent rice crops failed to achieve self-sufficiency for 2013. The Indonesian national government's plans to increase food production will also increase demand pressures on water management systems.

Water Supply

Indonesia's ground and surface water catchment levels are low, given the country's high rainfall. Mismanagement of high volume flow results in run-off waste, which causes sedimentation build-up that shortens the life-span of water catchment reservoirs. Fourteen per cent of drainage basins are in a critical condition, predominantly in Java, Sumatra and Kalimantan. Fluctuating supplies through drought and flood seasons also create issues of water imbalance. Flash flooding can produce un-captured surpluses in some areas, while others experience drought-induced scarcity. Indonesia's river basins are the life source of the country, but a survey by the Ministry of Environment in 2008 found that the majority of the country's major rivers are heavily polluted. Water pollution is largely due to the high levels of municipal and industrial waste discharged into open water systems.

The allocation and management of Indonesia's water resources are jointly overseen by the Department of Public Works and the Department of Mining and Energy. The co-ordination of water management between these two departments creates a complex framework of regulations for commercial and agricultural interests. Water allocation and operation had been decentralised to 465 districts in 2009. This has resulted in the neglect of water supply management; the World Bank asserts that local governments, between 2001 and 2008, typically invested only 2% of their budgets in this area.

Indonesia faces large challenges in securing municipal water supplies. Access to water is gradually improving in rural areas, but access to clean water in urban areas is an ever-increasing problem. Most Indonesians still have to arrange their own water supplies. Many

urban dwellers are forced to buy water from vendors at inflated prices. Those that cannot afford it are forced to use polluted sources, such as tainted well water and poor quality river water, creating considerable health risks. Around 32.5 per cent of households rely on low quality drinking water.

Overexploitation of groundwater resources is resulting in critical issues of contamination and salinisation of aquifers. The private companies overseeing the allocation of water resources in Jakarta only supply 40 per cent of demand, forcing commercial businesses and residents to create and rely on illegal wells. This means that groundwater extraction is widely unregulated. Overexploitation of water resources is a significant problem in Indonesia, as attitudes across the country, from rural villages to industry, remain impervious to the importance of water conservation.

Water Security to 2025

Agricultural water supplies are likely to decrease in the period to 2025, under pressure from the growing manufacturing sector. This will reduce the water available for irrigation. The government will need to focus on upgrading irrigation infrastructure, to reduce wastage and maximise supply. The Agriculture Ministry estimates that the government needs at least US\$2.04 Billion to fix irrigation systems; around 28% of that funding has already been allocated in Indonesia for the next four years.

Since the Asian Financial Crisis, the Indonesian government has neglected water infrastructure and pollution issues. Consequently, the current water network is in need of urgent development and repair. Estimates put the cost of cleaning up the pollution between now and 2025 at US\$3.3 billion. External bodies, such as the Asian Development Bank, have pledged support in some areas of the clean-up, but government funding is unlikely to be enough to bridge the gap to the sum needed for a comprehensive river clean-up. In the past, Indonesia has relied heavily on international donations and loans from international bodies, such as the ADB and the Japan Bank for International Co-operation (JBIC) to fund large-scale water infrastructure projects. **Unless major government funding is authorised for key infrastructure developments, Indonesia's water supply situation will remain insecure. Increasing groundwater depletion, urban overcrowding and persisting lax attitudes towards water pollution and conservation, all increase the need for immediate widespread development and education.**

Food Security

Food Demand

Currently, the food demands of many of Indonesia's poor go unmet and malnutrition remains a significant health concern. At the same time, economic growth and rising incomes among the growing middle class are causing shifts in consumption patterns and an emerging trend of obesity. While food demands from the middle class increase, the average calorie intake has not risen and large sections of the population still battle to meet their dietary needs. The country is experiencing a dual nutritional burden, whereby the persistence of undernutrition, particularly among children, runs parallel to a rapid rise in obesity, which is most prevalent among the adult population.

The 2012 Global Hunger Index revealed that nearly a fifth of Indonesian children under the age of five are underweight and many suffer from micronutrient deficiencies. Indonesia's poor devote up to 80 per cent of household expenditure to foodⁱⁱ. This leaves them vulnerable to food price inflation and frequently incapable of meeting their food requirements. Concurrently, health issues related to over-nutrition and obesity are on the rise.

Indonesia's changing food demands mirror the nutritional transition occurring in much of the developing world. There is increasing demand for foodstuffs such as protein, dairy, and pre-packaged foods, as opposed to traditional sources of intake, such as rice and cassava. Demand for beef and wheat products has risen substantially. This is largely to do with the growth of Indonesia's retail market. Many Indonesians are now turning to Western fast food options. These transformations in the Indonesian diet will undoubtedly shape food demand in the period to 2025.

Food Supply

Indonesia's food supply is currently secured through a combination of wide-spread, small-scale agricultural production and food imports. Its food security is dependent on interacting subsystems of availability, distribution and consumption. Recent pushes for food self-sufficiency, signify the intentions of the national government to curb years of rising levels of agricultural imports and increase the domestic supply for food security purposes.

Indonesia's geographical composition as an archipelago nation, comprising 17,000 different islands, poses challenges to national food distribution. Java is the main centre for agricultural production and processing; more isolated parts of Indonesia often face higher food prices because of distribution costs. **While food supply levels are more than adequate to feed the Indonesian population, inefficiencies in distribution systems across the archipelago make it difficult to meet demand at prices accessible to all Indonesians.**

Supply chains moving perishable food products to market are inefficient. Thirty-five to forty per cent of fresh fruit and vegetables spoil before reaching the market stall. Poor post-harvest handling and storage practices, along with a lack of cold chain distribution options, are responsible for this. Distribution of fresh domestic produce remains a costly and slow process for many farmers, due to the inadequacies of key infrastructure, such as roads, ports and rail lines. Costly toll roads are the dominant mode of distribution; rail would provide a cheaper alternative, but is not a readily available option for distributors. Many farmers choose to distribute and sell their produce themselves, rather than through dedicated wholesalers and distributors, as they feel it is more cost effective to do so. **Indonesia's prospects for expanding its production base in an effort to achieve food self-sufficiency, and ultimately food security, are hindered by pre-existing weaknesses in food distribution networks.**

Self-Sufficiency Plan

In October 2012, the Indonesian government instigated a food self-sufficiency policy through the passing of the National Food Law. The government set a target of meeting 90 per cent of the country's food needs from domestic production by 2014. This push to expand the yields from agriculture and horticulture across Indonesia, came when the annual growth rate in the

agricultural sector, 3.3 per cent in 2011, was about half the rate of growth of real GDP in the same year.

The law established the Agency of Food Security within the Agricultural Ministry, to strengthen co-ordination between government agencies, work to diversify food crops, manage food stocks and handle the flow of exports and imports of food commodities.

The strategic planning of the Agricultural Ministry between 2010 and 2014 has four goals:

1. To achieve sustainable food self-sufficiency
2. To increase food diversification
3. To increase added value, exports and competitiveness
4. To improve farmers' welfare

The law provided government with the basis to regulate food planning, availability, affordability and safety. Two key points in the food laws have particular relevance: sources of food production are to be from domestic production and national reserves; supply is to be fulfilled by imports only if needed; and exports may only be carried out once the needs of domestic food consumption are satisfied. The Indonesian government thus holds significant control over the imports and exports in the food supply chain, as opposed to allowing for a free-market structure.

Food pricing and supply in Indonesia is a politically sensitive issue. The National Food Law is an effort to prevent domestic social unrest, by assuring an adequate domestic food supply through import regulations and increasing domestic production. The policy is a response to concerns about external factors adversely impacting national food security. The global food price crises of 2007-2008, 2010 and 2011 caused domestic food prices to rise sharply in Indonesia, spurring rioting. Furthermore, Australia's ban on live cattle trade from 30 May to 8 June in 2011, demonstrated the potential ill-effects of supply stoppages. Indonesia's self-sufficiency targets may also be seen as preparation for the implementation of the Association of South East Asian Nations (ASEAN) Free Trade Area in 2015, which will pose challenges to domestic farmers as they face competition from regional producers.

Challenges to National Food Self-sufficiency

Indonesia's food self-sufficiency plan is currently at odds with its goals of maintaining and improving food security due to inadequate domestic production levels. Despite their good intentions, the self-sufficiency plan and National Food Law stand out as exercises in economic nationalism, rather than a concerted effort to ensure the accessibility, affordability and availability of food for the Indonesian population.

Inflation

The 2012 OECD Review of Indonesia's Agricultural policies, warned that relying almost solely on domestic production may make Indonesia vulnerable to fluctuations in supply. Stringent import quotas in key food commodities have affected Indonesians through price fluctuations. The supply of key food products, such as beef, soybeans, chillies and garlic, in the Indonesian market has fallen, resulting in significant price inflation. The price of soybean products, for example, has risen by 15 per cent in 2013 due to supply issues. This forced the

hand of Indonesia's *Bulog* (State Logistics Agency), which implemented a price ceiling for soybean producers. The recent pricing pressures on beef, caused by insufficient import quotas, have also forced the government to announce the imminent implementation of price stabilisation measures and relaxed import restrictions; measures that are contrary to its initial self-sufficiency policies.

Inflation is one of the most politically sensitive issues in Indonesia, particularly when it involves volatile food prices. When reductions in fuel subsidies were announced in July this year, there was a widespread outcry and an outbreak of rioting, because of the impact on food prices.

Comparative advantage

Self-sufficiency is an economically inefficient goal for a number of crops, including chillies and potatoes, where Indonesia lacks comparative advantage or subsidy assistance compared with neighboring South-East Asian producers. Despite its goal to become a net exporter of rice, Indonesia lacks a comparative advantage in the production of rice and will face strong competition from ASEAN nations such as Vietnam and Thailand. Ninety per cent of Indonesia's rice is produced by smallholder farmers and the lack of large-scale production, combined with difficulties in establishing efficient supply chains, mean that Indonesian rice farmers lack comparative advantage on the world market.

Corruption

Allegations of internal corruption between importers and the Indonesian Agricultural Ministry highlight the scepticism about the floundering import quota system. In February 2013, an Indonesian government advisory panel found that import quotas encourage bribes and price spikes; it urged that they should be replaced by import tariffs. The Chairman of the fourth-largest party, the Prosperous Justice Party, part of President Yudhoyono's ruling coalition, was arrested for accepting bribes from local importers to ensure that they received larger beef quotas. Allegations have also been directed towards garlic importers, because of price hikes of up to seven times the original price to US\$6.65 per kilo. Former Trade Minister Gita Wirjawan has been forced to deny involvement in the 'garlic cartel', which is accused of working together to fix prices and manage domestic supply. Corruption reduction has been identified by Yudhoyono's administration as a key focus; however, it appears that corruption continues to permeate government interactions with the agribusiness sector, invoking scepticism over the management of food import restrictions.

Food Security to 2025

Indonesia's ability to ensure that its population will be food secure until 2025, in accordance with current self-sufficiency policies, relies on its ability to raise agricultural productivity. The difficulty in raising production to meet current and future demand lies in the unreliability of water resources, poor irrigation systems, and the diversion of food producing land to palm-oil production.

Years of minimal spending on agricultural research and development have produced challenges that will hinder the sector's ability to achieve the lofty production targets. Indonesian envoys and government entities have sought to interest agribusiness interests in

the Arabian Gulf and Australia in investing heavily in Indonesian agriculture. Foreign interests are often uninterested in making such investments, however, due to the lack of sufficient supporting infrastructure. Legal protection for foreign businesses is weak and strict ownership laws create further barriers to the much needed investment. Allegations of corruption within the agriculture ministry also curb the willingness of foreign entities to inject capital into the Indonesian agricultural sector.

The prospects for raising agricultural production are hindered by these limitations in the agricultural budget and the difficulties attracting foreign investment. According to the World Bank, Indonesia allocates over half of public agricultural spending to seed, credit, fertiliser and rice subsidies. Current government spending on subsidies leaves little room for infrastructure development and research.

Even as economic growth continues to spread through some sections of Indonesian society, the prospects for the future food security of many poor urban and rural communities remain uncertain.

Assessment and Implications

Indonesia faces significant challenges if it is to ensure water and food security for its population by 2025. The lack of accessible clean water, in both rural and urban areas, remains an immense obstacle. Indonesia's high rainfall suggests that the country's future water security relies predominantly on improving the accessibility and affordability of water, but the cost of upgrading its inadequate water infrastructure is extremely high and unlikely to be met. Environmental issues, such as erosion, land subsidence and the depletion of groundwater resources, also present challenges for effective water management. The growth of both industry and agricultural production will place further strain on the availability of clean water for Indonesia's population and current irrigation problems will limit the immediate potential for increasing growth in the agricultural sector.

Indonesia's push for food self-sufficiency is also unlikely to be successful and could undermine its goal of achieving greater food security. While market intervention by the Indonesian government, including price caps and the release of food reserves, can provide short term relief to food price inflation, agricultural output must increase if self-sufficiency is to be a viable long term policy. The sector's limited technological development, its reliance on smallholder farmers who have weak connections to food supply chains and the diversion of funding towards subsidies, rather than much needed investment, make achievement of the required increases in domestic production unlikely. Furthermore, pre-existing distribution and infrastructure inadequacies could be exacerbated by increased production and lead to supply chain disruptions and price volatility.

Inflationary pressures on food and water are a domestic security concern for Indonesia, as shown by the riots sparked by the fuel subsidy cuts in July this year. The current balancing act of Indonesia's protectionist self-sufficiency policy, with short-term actions to maintain price stabilisation (to maintain and improve food security) is unsustainable. It seems highly unlikely that production targets will be reached in 2014-15 because of these factors. Similarly, self-sufficiency is unlikely to be reached in the foreseeable future.

The United States issued a WTO challenge against Indonesia on 10 January this year, claiming that Indonesia's opaque and complex import licensing system '...has become a serious impediment to US agricultural exports entering Indonesia'. A successful challenge may create barriers to the continuation of current import quotas. Initial consultations failed to resolve the matter and a panel was formed on 24 April to hear the dispute. The US has a notable chance of success, but the formal challenge may take twelve months before it is resolved. In fact, some WTO challenges can take years. If the US challenge in the WTO is successful, it may force Indonesia to reassess its national food legislation.

The emergence of an ASEAN Free Trade Area, aimed at creating a tariff free area by December 2015, will create both challenges and opportunities for Indonesia. Agricultural Minister Suswono asserts that Indonesia will only succeed after 2015 by improving its competitiveness in regional and international markets. Consequently, rapid improvements are needed in production rates and distribution efficiency, to shield Indonesia from an influx of foreign food products (if import quotas are lifted permanently) and avoid excessive strain on domestic exporters.

Next year's presidential election will bring a new leader, a new administration and possibly a re-assessment of current agricultural policies.

Implications for Australia

The forecast issues for Indonesian food and water security and the status of efforts to achieve self-sufficiency, will largely be domestic issues for the Indonesian government to navigate. Indonesia is, however, the largest recipient of Australian foreign aid, DFAT (previously AusAID) provided \$541.6 million in aid in 2012-13, growing to \$646.8 million in 2013-14. A large portion of Australia's past aid focus in Indonesia has been on improving the water security of Indonesia's poor. Extending Australia's role to education on health, sanitation and water conservation, in conjunction with the Indonesian government, could be highly beneficial in tackling the persisting cultural attitudes that are largely responsible for a variety of water security and health issues across Indonesia.

Indonesia is currently Australia's fourth-largest agricultural export market. Its share of total Australian food exports reached 7.4 per cent in 2011-12, compared with 4 per cent in 2001-2002. Negotiations on a Comprehensive Economic Partnership Agreement between Indonesia and Australia commenced in September 2012. Australia is using these negotiations, in part, as an effort to reduce import barriers, such as those in agricultural trade. Indonesia has promised to lower or eliminate import duties on 8,742 Australian and New Zealand commodities between 2011 and 2013.

Indonesia's increasing consumption of wheat-based products could be a significant benefit for Australian wheat exporters. Indonesia is the largest wheat importer in the South East Asian region and currently 50-55 per cent of those imports come from Australia. Indonesia's increasing demand creates the potential for substantial increases in wheat export volumes from Australian producers.

Indonesia's achievement of self-sufficiency in beef seems unlikely, due to figures leaked from the bureau of statistics that show Indonesian cattle numbers have fallen by 3.4 million, or around 20 per cent, since 2011. This shortfall is largely due to the selling-off of breeding stock by Indonesian farmers when prices spiked immediately after the Australian live cattle ban. Despite Indonesia's need for supplies of Australian cattle, the chances of raising Australian beef exports to Indonesia substantially will rely on the results of fresh inter-government dialogue.

New Australian Prime Minister, Tony Abbott, has announced his commitment to Kevin Rudd's pledge of \$60 million to support increased bilateral agricultural co-operation and investment with Indonesia, dubbed the 'Red Meat Cattle Partnership'. This commitment was confirmed during the Prime Minister's recent visit to Jakarta, where he was joined by some of Australia's biggest agribusiness chiefs. An increase of 53,000 in Australian live cattle exports to Indonesia has already been announced by Jakarta, while recent reports have suggested that a further increase of 46,000 for the December quarter will be announced shortly. These measures will serve to bridge the gap of 50 per cent in lost beef exports due to the live export ban. The Indonesian Ministry of Trade has recently signaled the possible abolition of beef import quotas, which may pave the way for Australian cattle exports to Indonesia to return to previous levels.

Indonesia will continue to encourage Australian beef and other Australian agribusinesses to provide training, research and development. Agricultural research and development thus has the potential to be a key export to Indonesia for Australia. Recent statements by Indonesian Agriculture Minister Suswono, suggest frustration about Australia's inaction on its commitment of agricultural investment in Indonesia. Suswono stated, '...promises have not been kept. It seems as if Australia only wishes to use Indonesia as a market'. Australian business interests often argue that Indonesia does not offer the necessary support infrastructure for investment. These comments highlight the current uncertainty in the future of Australian-Indonesian trade relations in the agricultural sector.

Indonesian government-backed companies have also sought to gain financial stakes in many of the struggling cattle stations in Northern Australia to secure their beef supply, this includes the recent purchases of two major cattle stations. Indonesia's largest live cattle importer from Australia - The Santori Company – has recently purchased a majority stake in these Northern Territory properties. This move comes after the Indonesian government last month signaled its intention to buy 1.5 million hectares of pastoral land in Northern Australia to run Indonesian cattle herds. Thus, it is clear that bi-partisan efforts are being made to secure Indonesia's beef supply, which is likely to strengthen the, occasionally tumultuous, relationship between the two nations.

Any opinions or views expressed in this paper are those of the individual author, unless stated to be those of Future Directions International.

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