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COVID-19 and Global Food Security

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THE CRAWFORD FUND

The Crawford Fund highlights benefits to Australia and developing countries of research for agriculture and development; supports Australians in training developing country scientists and farmers, and young Australians in their careers, studies and volunteering for food and nutrition security.

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Pre COVID-19 Context

- Approximately 815 million undernourished
- PLUS 1-2 billion over-nourished
- Pop. expected to reach 9 billion by 2050

Agriculture Uses:

- 40% of the terrestrial surface
- 70% of the fresh water
- Ag. is a significant driver of land clearing and land degradation, and damage to ecosystem services
- Contributes 17% of the world's greenhouse gases

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How may COVID-19 impact global hunger?

- Lack of access to water to promote WASH facilities
- Significant population numbers already in poor health due to undernutrition and obesity and its co-morbidities.
- Labour shortages.
- Trade and travel restrictions that impact harvesting and
- supply chains.
- Reduced purchasing power of the poor in the face of rising food prices.
- Trade restrictions that increase food prices, and
- Focus and funding being moved away from agriculture and food production because of mounting health funding requirements.

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Food, health and water are inextricably linked.

- Many of the world's poor do not have access to running water and soap, the first line of defence against COVID-19. Estimates suggest that:
  - 0.8 billion people around the world do not have safely-managed drinking water,
  - 2.4 billion go without safe sanitation services and,
  - 3.0 billion lack basic handwashing facilities.
- Furthermore, an estimated 896 million people use health care facilities with no water service and 1.5 billion use facilities with no sanitation service. These startling figures emphasise the need to maintain focus on water, sanitation and hygiene programs (WASH).

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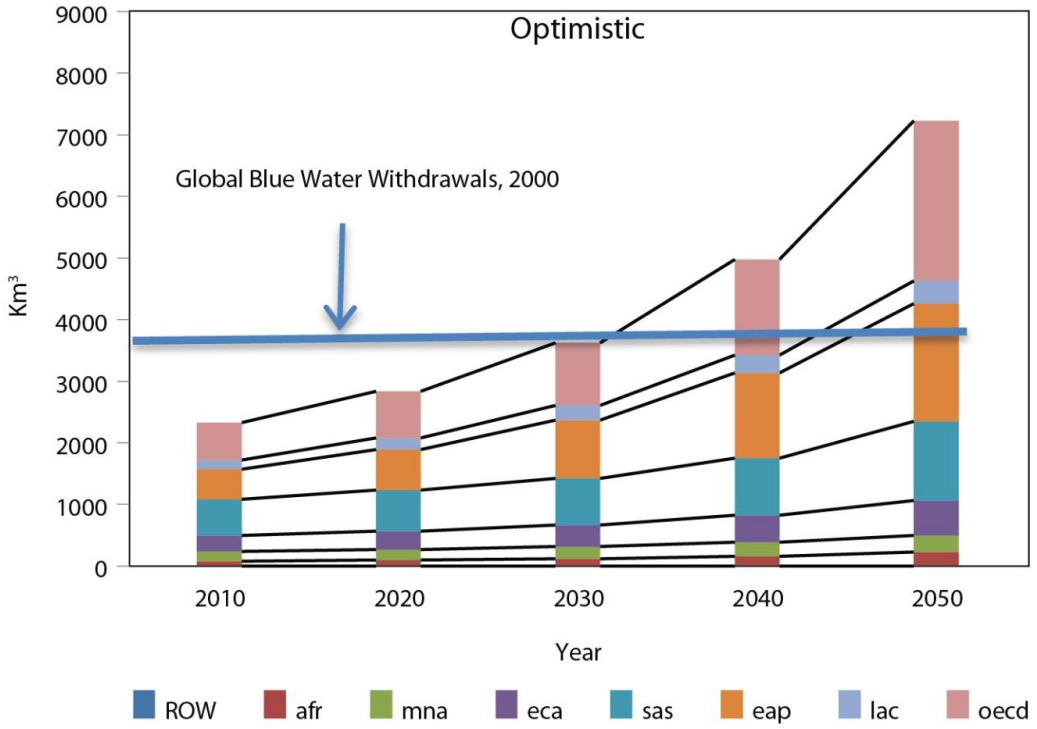
Forecast consumption vs 2000 water extractions

n.b. consumptive demand is less than water withdrawals due to irrigation inefficiency



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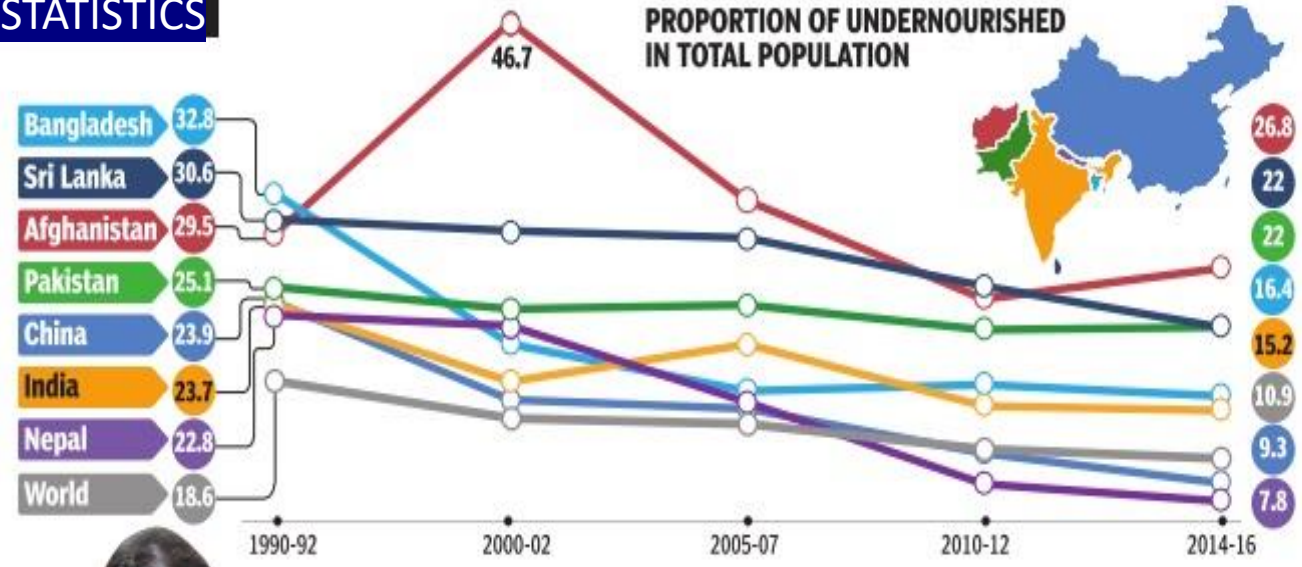
Undernutrition

STATISTICS



Number of people undernourished in India and its neighbourhood – (millions)

	1990–92	2014–16	Change
India	210.1	194.6	-15.5
China	289	133.8	-155.2
Pakistan	28.7	41.4	12.7
Bangladesh	36	26.3	-9.7
Afghanistan	3.8	8.6	4.8
Sri Lanka	5.4	4.7	-0.7
Nepal	4.2	2.2	-2.0
Total	577.2	411.6	-165.6
World	1010.6	794.6	-216.0

HUNGER ZONE

According to the UN's Food and Agriculture Organization, it is estimated that in 2015, there are **794.6 million undernourished people** in the world. More than half of them live in India and its neighbourhood. There are about **200 million undernourished people living in India.** China has the second largest population of people who don't get properly fed. Between 1990-92 and 2014-16, the undernourished population decreased by over 155 million in China, while **India could bring the number down by only 15.5 million.** This raises questions about whether India's growth has failed to trickle down to the bottom.

Source: **Food and Agriculture Organization of the UN**; Research: **Atul Thakur**; Graphic: **Anil Dinod**

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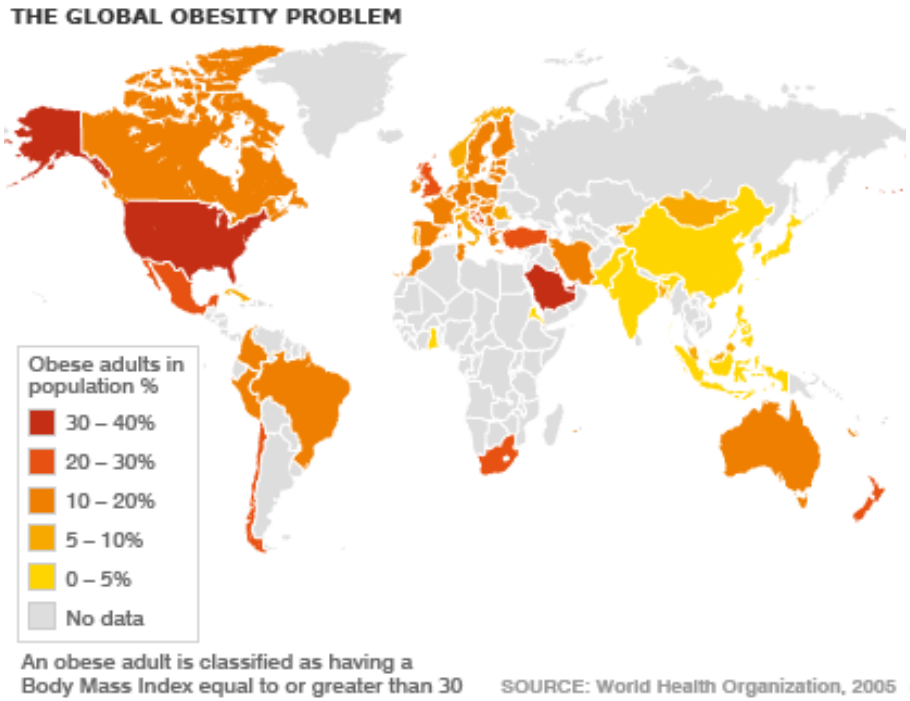
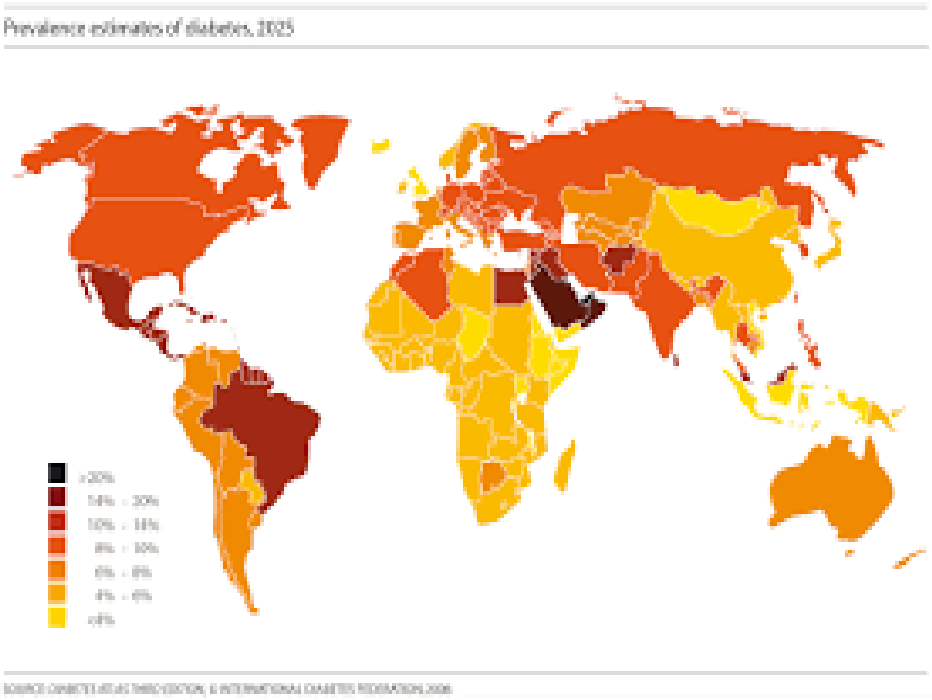
Overnutrition





Obesity

Diabetes

Labour shortages

Whilst many developed and emerging economies have relatively resilient food production and distribution systems, links to sophisticated international value chains and significant stockpiles of key staples, this is not often the case in developing countries.

In many cases food supply depends on recent and forthcoming harvests and is dependent on there being adequate healthy labour to deliver the food from the field to the market.

Shenggen Fan, ex IFPRI DG commented *COVID-19 is a health crisis. But it could also lead to a food security crisis if proper measures are not taken."*

These comments were based on observations of how devastating disease outbreaks such as the Ebola epidemic in Africa can be for fragile food systems.

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The impact of Ebola: a useful indicator

- When the Ebola epidemic hit Guinea, Liberia and Sierra Leone in 2014, rice prices in those countries increased by more than 30 percent and the price of cassava, a staple in Liberia, skyrocketed by 150 percent.
- While we have heard of issues in Australia around availability of visa holders for our agri-labour requirements, the impacts of insufficient labour availability overseas, either through ill-health or the feminisation of farm labour, can be the cause of hunger and severe malnutrition.
- COVID-19 is having a big impact on US meat processing plants currently!
- Such price and food availability shocks certainly hit the poor and impact both food security and nutrition in populations already living on the margin.
- And as a longer-term impact, the correlation between food security and national security is a direct one, as recent history shows.

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Trade and supply chain issues

- Poorer countries are particularly prone to food security shocks arising from drought, economic perturbations, such as the global food price crisis of 2008, agricultural pest and disease outbreaks and human health epidemics.
- Drought, exacerbated by climate change often has widespread impact in developed and developing economies. However, in some of the latter, there are good correlations between rainfall and national GDP, which demonstrate the importance of the agricultural sector to the overall economy.
- We only have to look back 12 years or so to see what happened when a range of factors conspired to raise global commodity prices with resultant regional food scarcities, food riots and knee-jerk policy responses that further curtailed trade in key commodities.

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Trade and supply chain issues (cont)

- Agricultural pests and diseases including cereal rusts, animal diseases like African Swine Fever, and the current East African locust outbreak *According to the UN, an average swarm, which contains up to 40 million insects, can travel up to 150 km in a single day and can devour enough food to feed 34 million people within that time*), can also easily shock smaller countries and threaten their food security and nutrition.
- A key issue with the Ebola outbreak was not only associated with the availability of labour, but also with borders and trade routes closing because of fear of the disease. This severely limited access to seeds, fertilisers and insecticides and overall movement of food. Fan pointed out that all of these resulted in 40% of the land not being cultivated as the epidemic progressed.
- So, it is conceivably possible that if COVID -19 takes hold in many African and South Asian countries, and particularly in their rural communities, the impacts on food and nutrition security could be significant.

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Trade Restrictions

On Wednesday 25 March 2020, the Government of Vietnam took a first step in banning its rice exports. In a statement, Prime Minister Nguyen Xuan Phuc advised he had directed the ministries of trade, finance and agriculture to review the country's rice stocks, with a view to determine if domestic supplies were sufficient during the coronavirus outbreak. In the meantime, exports would not proceed."

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Prices

- In Australia, we are yet to ascertain whether restrictions on movement will have a major impact on fruit and vegetable harvesting, but there is anecdotal evidence from China that restrictions on people movement may have lifted commodity prices and African Swine Fever impacts have seen the price of pork increase by over 135%.
- However, these kinds of restrictions can lead to shortages and price rises, which if replicated in poorer communities in developing countries may have profound impacts on food and nutritional security.
- As the Syngenta Foundation points out, people already with poor nutrition and health will also be more severely affected by COVID-19.

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Poverty and purchasing power

- If the world stays in economic recession, or even enters a depression post the current pandemic, the purchasing power of the poor in the developing world will inevitably decline because of job losses and other factors including national revenue losses due to lower oil and commodity prices.
- This will inevitably impact nutrition and food security for the world's 815m already undernourished.

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A ray of light!

- The FAO points out that *"The estimate of wheat production in 2019 has been kept nearly unchanged from the previous month at 763 million tonnes, 4.2 percent higher than in 2018 and the second highest on record.*
- *Global rice production in 2019 is largely unchanged, month-on-month, at 512 million tonnes (milled basis), down 0.5 percent from the 2018 all-time record high."*
- Thus, whilst we can hope that in the longer term we may not be facing a global food supply crisis, distribution of food could become a challenge if there is widespread ill-health affecting supply lines, or if traditional exporting countries impose bans.

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Implications for agriculture, food and health

- COVID-19 follows SARS. MERS and Swine Flu – we can expect future similar disease outbreaks.
- To a considerable degree human health and environmental health are closely linked.
- Our environment is under high stress from deforestation, overpopulation, climate change and urbanisation.

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Needed Government Responses

- Biosecurity needs to be ramped up globally.
- Sustainable intensification has to be the way forward for agriculture.
- Natural environments need to remain to provide the basis of ecosystem services (e.g. pollinators, clean and plentiful fresh water, habitat for fish nurseries etc.).
- Human health outcomes have to be seen as contingent on environment, food supply and nutrition.
- We need a new generation of scientists who understand the linkages between food, environment and health.

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The solution lies in sustainability science!

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