

ST.GALLEN SYMPOSIUM

Global Essay Competition 2024

Title: The Food Scarcity Conundrum: How to solve a man-made disaster

Essay:

In his 1993 essay, Chicago school economist, Thomas Sowell said that “The first lesson of economics is scarcity: There is never enough to satisfy everyone. The first lesson of politics (however) is to disregard the first lesson of economics.” The balance between economic scarcity and public policy to mitigate it will form the fulcrum on which our essay will hinge as we will try to delve into how definitions of scarcity have continued to change as mankind has embarked on ways to tackle them.

British economist, Lionel Robbins is recorded to have first defined Economics in his 1932 treatise in terms of the study of “scarce resources”, a definition which has since been repeated and popularised by economists like Mankiw. Although originally scarcity was a concept restricted to economic goods that could be exchanged in a transaction, that definition has today encompassed abstracted realms including but not limited to love, time, and maybe a last hug from your parents before you go on to study for higher education in a different town, state, or country!

Definition

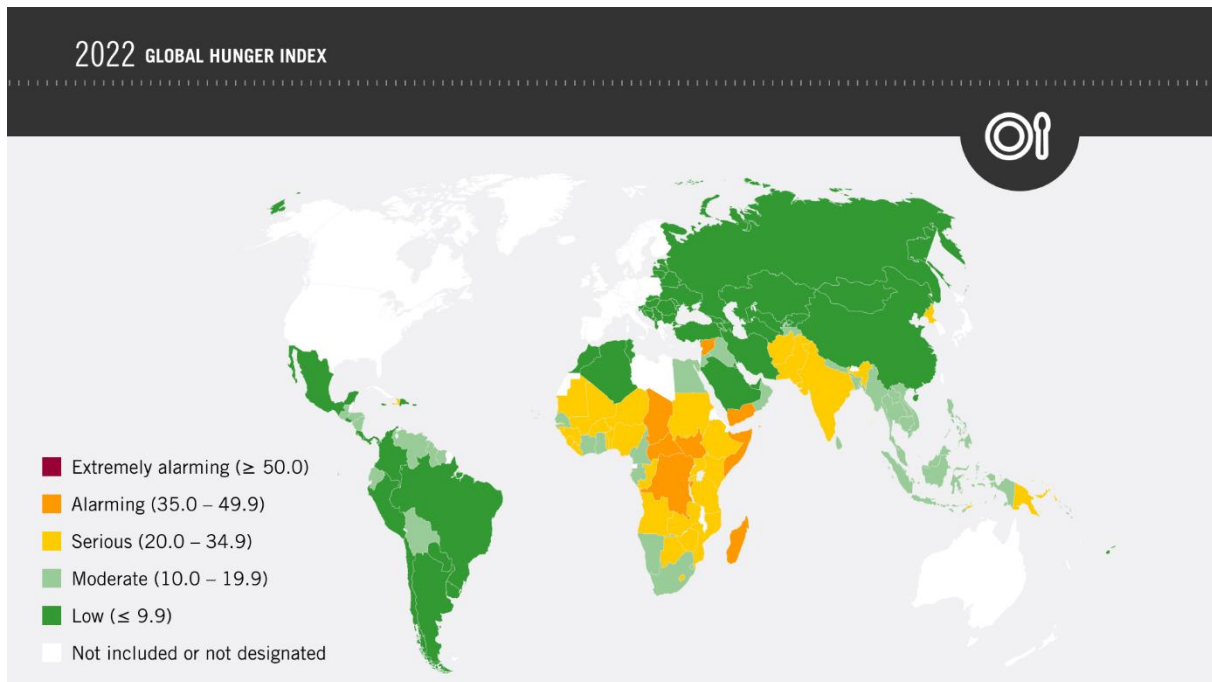
Modern policymakers have often wrangled with the concept of the finiteness of earthly resources and how best to go about preserving them for posterity: *Humanity's own will for its future generations*. Yet, this has been inexplicably hard to convince and has even led to political gamesmanship by opportune demagogues. Thus, before we take the plunge into positing a solution, let's look at the reasons for scarcity in the first place. Scarce resources can be classified today into naturally scarce, artificially scarce, or non-scarce respectively.

Air for example is non-scarce. Nobody buys it and everybody has access to it. (Although with the onset of pollution in newly industrialising emerging economies, there might be a market opening up which hitherto might have seemed implausible). Naturally scarce resources would be rare earths which make up an important component in the hotly contested semiconductor industry today or even cutting-edge medication or vaccines or endangered animals like king crabs which have been hunted as a delicacy. Taken to its extreme, it can result in extinctions like that of the dodo. However, the Rolex that one buys or the diamonds that one might gift one's fiancé are artificially scarce. Production for these goods is either monopolised or with a significantly high degree of HHI concentration depending on how much elasticity of demand favours that sector. The solution thus seems to be staring us in the face: pivot to other products (like renewables) for naturally scarce resources and institute regulations to encourage innovation and competition in the markets. An absolute tragedy is when a naturally abundant resource is made artificially scarce with devastating consequences. Insulin might be scarce in the US but is relatively non-scarce in New Delhi. The price difference in these markets is so high that it's cheaper to fly a thousand kilometres both ways than to go to a hospital in New Jersey. Thus, we see that solutions aren't exactly as direct as they might tempt us to believe.

Why Food Scarcity?

For the ambits of the essay, we take up the resource of food. Why food? Because it strikes the heart of the problem of scarcity plaguing society today. It's not that we don't have enough. We produce more than enough. According to FAO (UN's Food and Agricultural Organisation), we produce about 9 billion metric tonnes of food annually including livestock/dairy/crops and aquatic products, enough to feed our close to 8 billion population

multiple times over. Yet there are still about 800 million who suffer from chronic hunger annually. A brief perusal of The Global Hunger Index (GHI), published annually by the International Food Policy Research Institute (IFPRI) reveals that this is a largely endemic issue affecting much of Africa and the Indian subcontinent even today. (see attached map)



2022 Global Hunger Index by Severity Severity Scale

Famines in democracy

One might be mistaken in quoting Gandhi: "There is enough for everybody's need and not for anybody's greed." The problem isn't as much as the production of resources although it is a critical problem too. Post Norman Borlaug's much-vaunted Green Revolution in India in the 1960s and 1970s, chronic hunger has reduced sharply and India has gone from a net importer to a net exporter of food. The nuance lies in distribution.

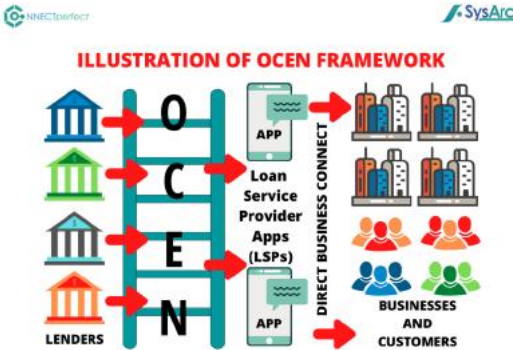
Two researchers: Eldar Shafir (professor of psychology and public affairs at Princeton University) and Sendhil Mullainathan (professor of economics at Harvard University) conducted several experiments to study the effect of scarcity documenting them in their book: *Scarcity*. In a now-famous experiment, a test and control group were made to sit for routine IQ tests after subjecting them to choose and make consequential decisions based on a situation where they had to undergo economic scarcity. In this particular case, they were asked to handle a situation where they had sufficient financial difficulty as well as a case with no difficulty before attempting the test. Those who faced economic hardships (hypothetically) did poorer in the test than those without revealing how tied food security and safety net against scarcity are in everyday life.

"No famine has ever taken place in the history of the world in a functioning democracy," wrote Nobel Prize-winning Indian economist Amartya Sen in "Democracy as Freedom" (Anchor, 1999). It's not that starvation disappeared. Incidents of mass hunger were still widespread in the eastern states of Odisha and some central Indian states well into the 1980s. Vandana Shiva, an ecological activist noted in an interview with the New York Times in 2003 that the key though was that incidents weren't widespread enough to be classified as

a famine despite being plagued by famines under the British Raj. Today as democratic institutions are threatened with many possibly wondering about an inflection point in acceptable political structures, this should still serve as a reminder of some of the positives that we seemed to have forgotten of late. Sen noted that democratic governments are still accountable to the people and have to face elections every five years or so and thus man-made catastrophes are largely averted. We are thus not proposing full-on government intervention but government assistance in aiding pathbreaking innovation which could solve this permanently for the better.

Case: The India Stack: one-of-a-kind partnership between government and startups

Things might be about to change though for the better via India’s pioneering government credit facilitating protocol: OCEN (Open Credit Enablement Network). OCEN aims to solve challenges around cash flow-based lending by identifying the touchpoints for delivering financial products to individuals and FPOs that extend beyond traditional lenders. OCEN represents a credit-protocol framework comprising a collection of APIs. It enables the provision of collateral-free loans to Micro, Small, and Medium Enterprises (MSMEs) based on their outstanding invoices, specifically through the GeM Sahay app. GeM, which stands for Government e-Marketplace, serves as the platform for government departments and organizations to procure goods and services. The Sahay app was introduced in 2021 through a collaboration between GeM and iSpirt (which also led the India Stack genesis with UPI and Aadhar and counts Nilekani as one of its gurus).¹ These are part of a government of India-supported initiative to build an Agristack encouraging startups to reach marginal landholders who were generally shunned.



A few startups have decided to leverage the OCEN network to pre-guarantee loans taken by marginal farmers in a bid to boost rural incomes and address the key issue around Agri-finance by talking to the final stakeholder directly. A few of them, such as Human Ventures, try guaranteeing the loan sought by marginal farmers by using the OCEN network of creditors. The loans thus guaranteed are used to fund seeds and fertilizers. Another startup called Spice Money is trying to facilitate end-user credit for dairy farmers leveraging the OCEN network. In a separate collaboration with Tanya Fintech, Spice Money has tried to create an entire digital ecosystem that digitally connects Village Dairy Entrepreneurs (VDEs), dairy farmers, and NBFCs (Non-Banking Financial Companies), providing them with the means to access credit and expand their businesses.² Today Spice is India’s leading rural fintech company with over 700,000 *Adhikaris* (entrepreneurs) offering a range of financial

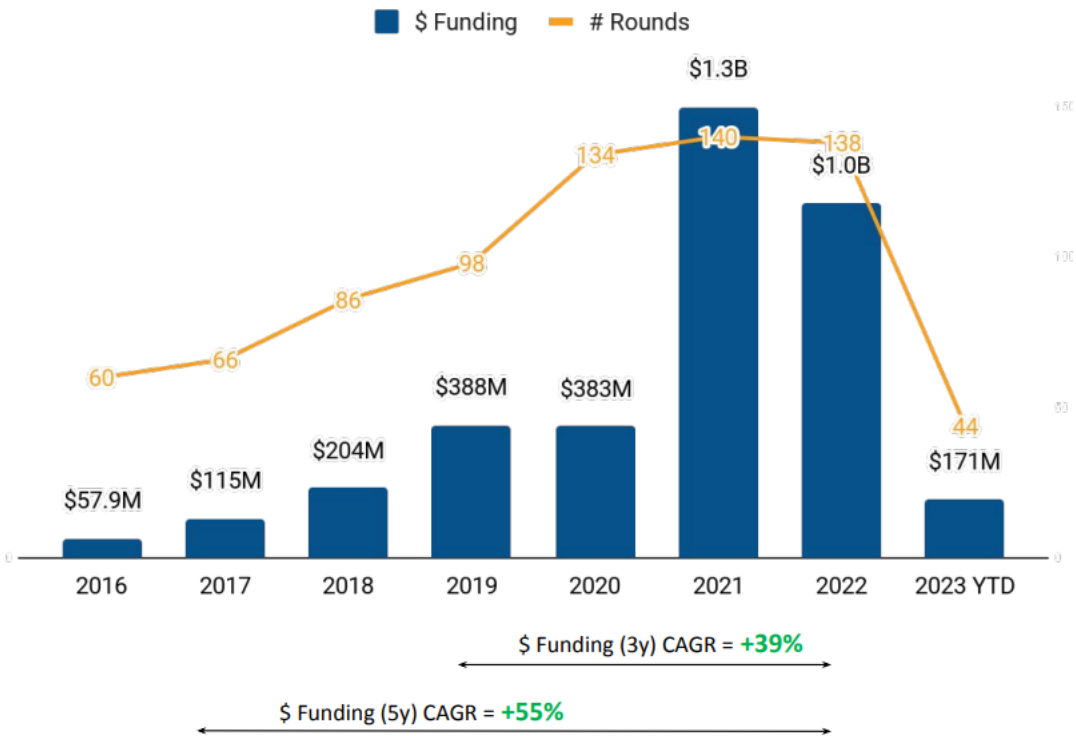
¹ <https://the-ken.com/story/same-borrowers-same-lenders-same-problems-but-indias-two-public-credit-platforms-wont-join-hands-to-fix-them/?searchTerm=ocen>

² <https://www.taryafintech.com/vikasni-spice-money-and-tarya-fintechs-collaborative-venture/>

services. These services include cash deposits, cash withdrawals, Aadhar-enabled payment systems, insurance, and loan services among others.

Other innovations

According to an FT report, lenders remain leery of microfinance to marginal farmers for reasons ranging from rising central bank interest rates, weather patterns, and the high cost of administration of marginal loans. These may be changing though as Artificial Intelligence and Machine learning are helping replace the “boots on the ground” approach.³ The biggest change here is that satellite imageries are no longer merely used to discover the present but also to predict future yields. Sesonomic, a Norwegian software company is liaising with the European Space Agency (ESA) and a Ugandan microfinance startup, Opportunity International using advanced data analytics to assign credit scores to prospective borrowers based on projected yield and past credit history. Since most marginal farmers might lack a past credit history, Opportunity International also runs behavioral analytics while on the spot cutting approval times from 60 days to under 4.



Total funding \$4.2B. YoY Equity funding tracked. (Tracxn Data)

Viability

In 2002, “C K Prahalad and Stuart Hart, professors at the University of Michigan and North Carolina, respectively, made a revolutionary and counter-intuitive argument to business leaders—the world’s poorest people were potentially a massive, untapped, and profitable market. If companies built the right products and services, they could usher in prosperity for the poor, while also boosting their bottom line”.⁴

³ <https://www.ft.com/content/59a98dec-f960-4b29-9686-1563442ad055>

⁴ <https://the-ken.com/the-nutgraf/fortune-at-the-top-of-the-pyramid/>

In their article⁵, Prahalad and Stuart advocated for engaging the bottom part of the pyramid (Tier 4) for a greater return based on total purchasing power. Today, we know they were wrong. The problem with current Agritech Microfinance startups is that they violate both principles highlighted by Erik Simanis, in a 2012 article published in the Harvard Business Review.⁶: they had to either leverage an existing infrastructure that serves wealthier customers to offer a product or service to poor consumers; or the consumers should already know how to buy and use the offering. Udaan, Khatabook, Meesho,⁷ and even Jio among others have pivoted from their business model targeting the lowest segment of India's consumer market.

Solution

Agritech startups must thus focus on offering premium services packaged for large FPOs to achieve viability and suitable funding especially given the current market downturn. There also remains the argument that while scalability might be an issue for some of the upcoming startups, there remains the promising possibility of leveraging new technologies to build an ecosystem that would eventually 'trickle down' to the marginal farmers as well as data shows directly targeting marginal farmers might not be as viable. To reach the final frontier, startups should leverage partnerships with governments as together they can strive to end the menace of food scarcity permanently as we glide towards a post-scarcity world.

Conclusion: the principle of conversion of scarcity

In T.S. Eliot's *The Wasteland*, the hallmark of modernist creativity we see that the *urbs aeterna* is collapsing due to decadence and scarcity of resources. Post-scarcity is a lionized myth that has been used as a MacGuffin to further human progress and oftentimes with excellent results. In fact, it wouldn't be too presumptuous to claim that much of present human progress is built on the bedrock of noble intentions. However, if we delve deeper, economists will shake their heads in disapproval at any concept of *post-scarcity* as it would fly in the face of over a century of economics. More and more economists today agree that post-scarcity much like Peter Pan's Neverland is an aspirational utopia. However, just as Plato in his theory of forms elucidated that an *Ideal* or *Form* might be a truer version of reality than the object or theory in this case, and more importantly an ideal might not even exist for people to strive towards it. And no matter what resources hit post-scarcity (as we hope all essential resources do), time will always be scarce and possibly our unit of currency. We began by quoting Sowell. We will end by proposing a marriage between innovative startups and astute democratic government policy. After all, scarcity is never completely eliminated but transferred. Food scarcity resolution may lead to privacy scarcity as the government now has access to all data. Other resolutions of essential resource scarcity can in turn lead to employment scarcity as routine jobs are automated. Our goal thus as members of the Human Race would be to ensure the most basic of our needs are never scarce, even if "diamonds are not forever"!

⁵ <https://www.strategy-business.com/article/11518>

⁶ <https://hbr.org/2012/06/reality-check-at-the-bottom-of-the-pyramid>

⁷ <https://economictimes.indiatimes.com/tech/startups/meesho-losses-surge-more-than-6x-to-rs-3247-crore-in-fy22-as-advertising-and-other-expenses-rise/articleshow/96706261.cms>

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