The Futures of Food Executive Report:
Drivers, Scenarios, and Solutions on the Horizon

Ed Niedbalski, Research Associate

Source: Shawn Tan, SIT Alumni

Drivers of Change

Drivers of change are repeated, lasting and consistent phenomena that we observe in the external environment in the present with the potential to change the future.

Blockchain Technology

Digital security technology has the potential to transform some aspects of the global food system in production and distribution models. From the monitoring of crop yields and ensuring efficiency in crop growth and tracing of crops from the field to the dinner table, and allowing for secure national and international logistics, blockchain has tremendous potential for shaping the food systems of the future. Blockchain is an emerging technology with numerous potential applications for added layers of security in numerous segments of the global economy and food systems.

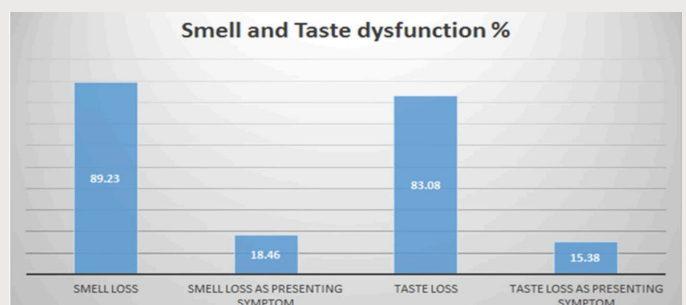### Purpose-led Value Chains for Food Security

Building in specific measures to ensure global food security within global food systems can predict and prevent shortages, supply crunches, and market and prices instability. Waste and inefficiency can be reduced and eliminated.

Alternative Meats/Proteins Replacement Sources Development

'Alt Meats' and 'Alt Proteins' are rapidly proliferating and quickly becoming competitively priced compared to conventional/comparable products. A more equal market share for replacement proteins products and for conventionally-sourced meats are likely to continue growing in the future.

'Poly Crisis' in Food Futures

Global austerity, rising prices for energy, fuel, fertilizers, military conflicts and geo-political instability in major grain/food exporting countries have compounded, creating greater instability and unpredictability in global food systems. 'Poly Crises' require 'Poly Solutions'. ■

Smell and Taste dysfunction %

SMELL LOSS 89.23 — SMELL LOSS AS PRESENTING SYMPTOM 18.46 — TASTE LOSS 83.08 — TASTE LOSS AS PRESENTING SYMPTOM 15.38

Source: https://ejo.springeropen.com/articles/10.1186/s43163-020-00050-0

Emerging Scenarios:
Problems & Solutions

A Brief Word About Scenarios: Scenario analysis seeks to create a range of 'possible', 'probable', 'plausible', 'preventable', 'preposterous' and 'preferred' visions of what might happen in the future; essentially, how could things 'look' in the future, in and under varying conditions and external factors. These scenarios can have both positive and negative consequences and connotations to them. 'Key Futures Images' are the mindseye manifestations of scenarios, the 'snapshot' of the futures-focused imagination, intended to give shape and depth to them, and can be viewed as how possible futures scenarios might 'look' under certain circumstances. The key is that each image will invoke useful thought about what might happen, and allow specific actions to be taken to shape the futures towards the 'preferred' and to prevent the worst.

Scenarios: Key Futures Images Presented and Discussed at the Food Futures Kickstarter

'Tasteless Futures' – A scenario in which a significant number of people have lost their ability to taste foods, possibly as a long-term Covid symptom, possibly arising as an effect of a newly-emergent Covid variant.

'3-D Printed Foods at Home' – A scenario where technological innovation can be scaled and improved to the point where food can be competitively priced to be 3-D printed at people's homes.

'Speculative Dining' – A scenario where dining and food can be 3-D printed, reshaped and changed in their formulation and presentation, as well as enhancing the high-end dining experience and incorporating the performative aspects of eating.

'Ketchup Wars' in a Flavorless Future – A scenario where in a post-collapse future, food is bland and mostly flavorless, with spices, sauces, and condiments which add flavor to food are rare and have become highly prized commodity items.

Post-collapse Food Zones' – A scenario where general financial and/or societal collapse has led to the rise of self-contained (if not fully self-sufficient) 'food zones'; essentially, they are walled-off areas of cities, where the residents work collectively at pooling resources for their own food resources via vertical farming, secure food delivery via drones.

'Ghost Foods' – A scenario where there are numerous 'lost foods'--that is, foods which have been lost to the world due to climate change.

Source: https://songster.net/projects/ghostfood/

Source: Jawn Lim

'Cultural and Personal Ecosystems' –
A scenario where the concept of natural 'ecosystems' are expanded to encompass both cultural and personal aspects. This represents a combining of the social responsibilities of the individual pertaining to their culturally-derived understandings of natural ecosystems becoming internalized, as the overseeing and stewardship of the natural world should be the same level of care and responsibility as the individual takes over themselves.

'Food Citizenship' – The expansion of the concept and associated responsibilities of citizenship to include the ethical stewardship of food resources and production methods, to ensure the continued and hopefully sustainable future of global food systems.

'De-meatified Futures' – A scenario where meat products have become rare, scarce, uncommon, illegal, or otherwise difficult or near impossible to obtain.

'Black Market Back-alley Meat' –
A scenario in which 'real meat' has either become illegal, or too cost-prohibitive to be commercially produced and sold via the new conventional means of 3-D printing or meat replacement products. Meat is now secretly sold and consumed at 'speak-easy' type restaurants using legitimate business fronts for cover, becoming an illegal commodity item with appeal to those who choose to step outside the new rules.

Source: Shawn Tan, SIT Alumni

Possible solutions & guideline for action:

Reclaimed Water
Water which can be recycled and reused through the natural and artificial filtration systems from human waste, from agricultural systems, rainwater collection, sea water reclamation and desalination through newly designed water infrastructure.

Systemic problems need Systemic Solutions
Change in our relationship with food systems must come from rethinking and redesigning the entire system. From how and where food is produced, how (and how far) it is transported, and how and where it is marketed, purchased, and consumed, food systems must be reactive, adaptable, and dynamic, in order to achieve truly sustainable long-term outcomes.

Measuring the 'Urgent' vs. the 'Important'
Having a set of agreed-upon priorities for what systemic issues the world faces in ensuring food and food system security will be needed in moving towards appropriate actions, and in the needed order of those steps. Issues of 'urgent' concern and more immediate impact must be addressed first; the example of market export instability and dramatic prices increases in food due to the Russia-Ukraine conflict are of immediate urgency, as they pose the greatest immediate challenges and threats to food systems and food security; but issues of 'importance' may also contain ultimately greater long-term impacts of food system security. Rising sea levels and temperature increases are symptoms of long-term global climate change, which may likely have a more significant overall impact on the future of food system security. Balancing ways to address these duel issues will be essential for a secure food future for the world.

'Food Citizenship'
Food citizenship advocates that you 'own' your own ecosystem, and citizens should take an active role in how food is produced and consumed within their local context. Actively participating in the management and overall health of local

Source: Lim Teng Hui, SIT Alumni

and global food systems is an essential step towards achieving genuine sustainability and food security. A sense of responsible stewardship for land and resources can be publicly promoted at the level of civil society engagement to bring about a sense of participatory governance in the oversight of food systems.

'Going Green is going Local'

Long-term systemic sustainability for the Future of Food must start with focusing on the local. Producing and consuming local products, turning back towards traditional varieties of locally-derived crops and products, moving away from globalized commodity-based productions models destined for export is a major and vitally important step away from globalized commodity crops, and the re-embracing of locally-produced foods. This will dramatically shorten supply chains and greatly reduce transportation costs for significant staple crops that sustain global populations and ensure a secure food future. ■

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