



Futures Thinking and Complexity in Policy Development and Strategic Management

Workshop with the Leadership & Management Programme for
Senior Management of NMHSs (Sep 2023)

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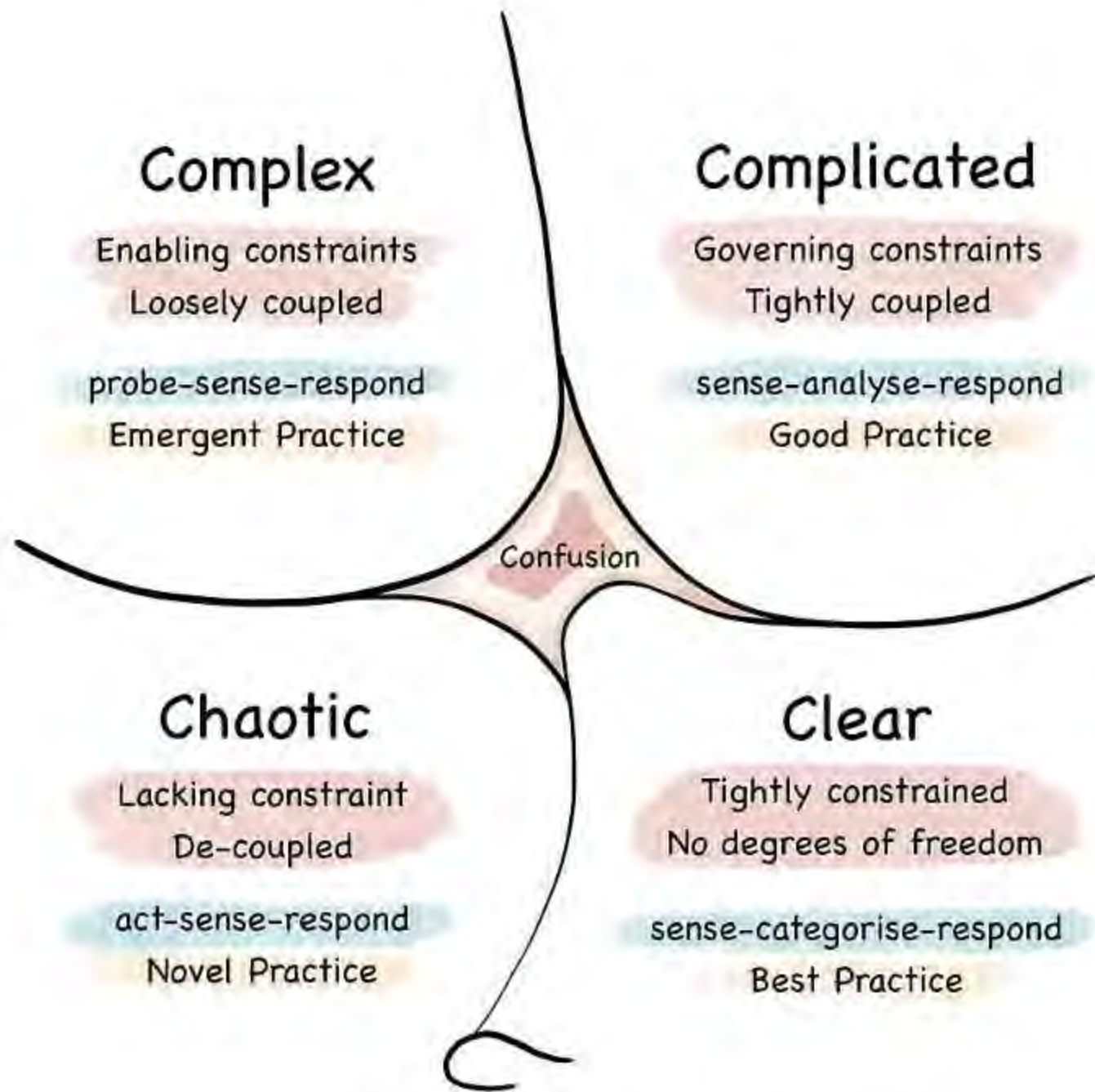
Scope

- The context: Polycrisis and Complexity
 - *Emerging issues, challenges and opportunities for NMHSs*
- Futures thinking: navigating the futureS through strategic foresight
 - *Fundamental methods*
 - *Scenarios*
- Takeaways – applying foresight for future readiness:
 - *anticipatory governance; organisational strategy + excellence*
 - *personal futures*



Questions for Delegates

1. *Over the past 5-10 years, what developments relevant to your organisation & wider public sector were surprising?*
2. *What prevailing mindsets and worldviews have been challenged, or seem out of date?*



“As we know, there are known knowns; there are things we know we know.

We also know there are known unknowns; that is to say we know there are some things we do not know.

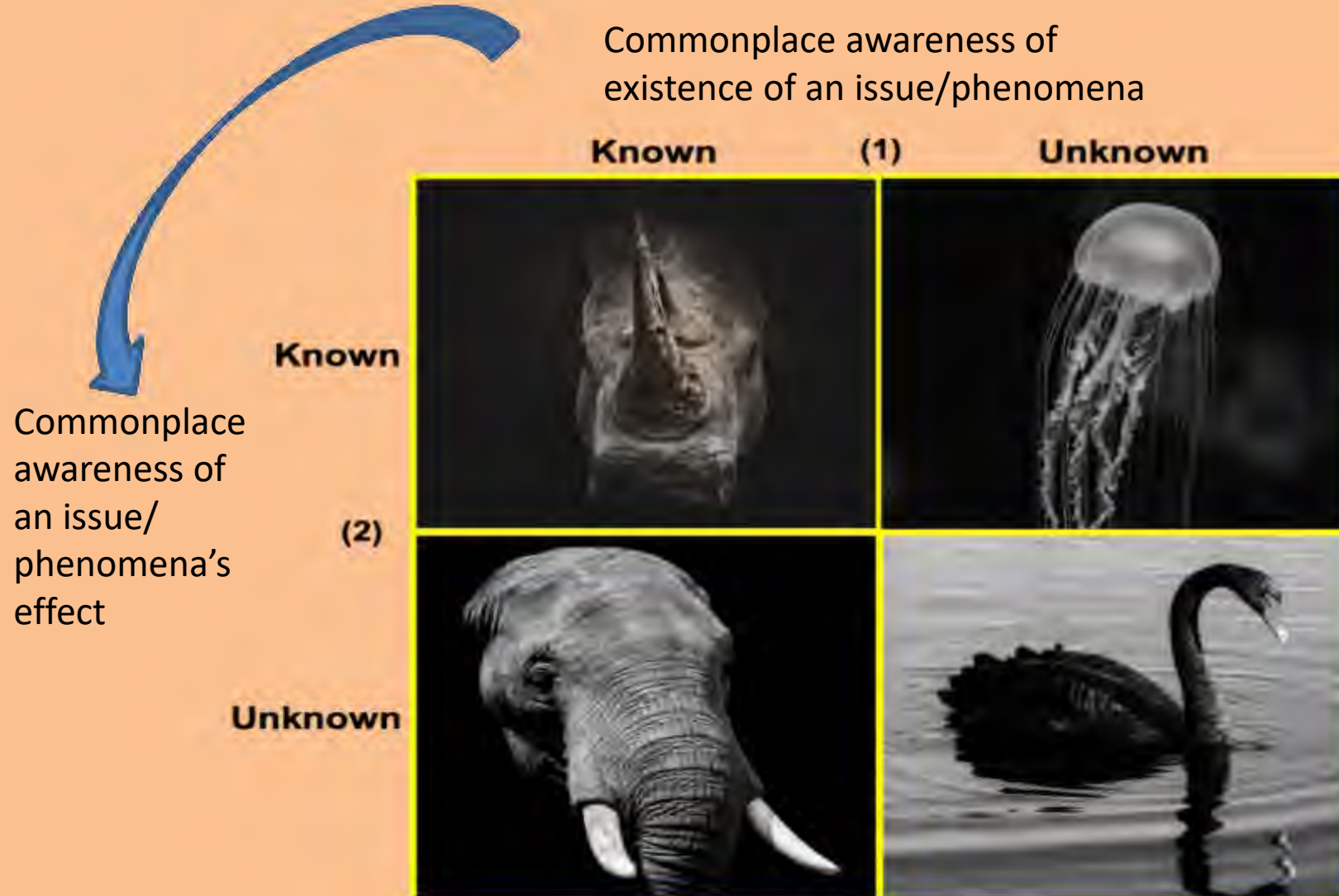
But there are also unknown unknowns – the ones we don’t know we don’t know.

-Donald Rumsfeld

*also unknown knowns!



The Futures Zoo





Red swan

Definition: A red swan is a probable event that could create a significant impact, but eventually does not happen. The term was invented by Gordon Woo, a “catastrophist” at Risk Management Solutions and the author of *Calculating Catastrophe*.

Examples: The Y2K Millennium bug; Mad Cow disease fatalities.

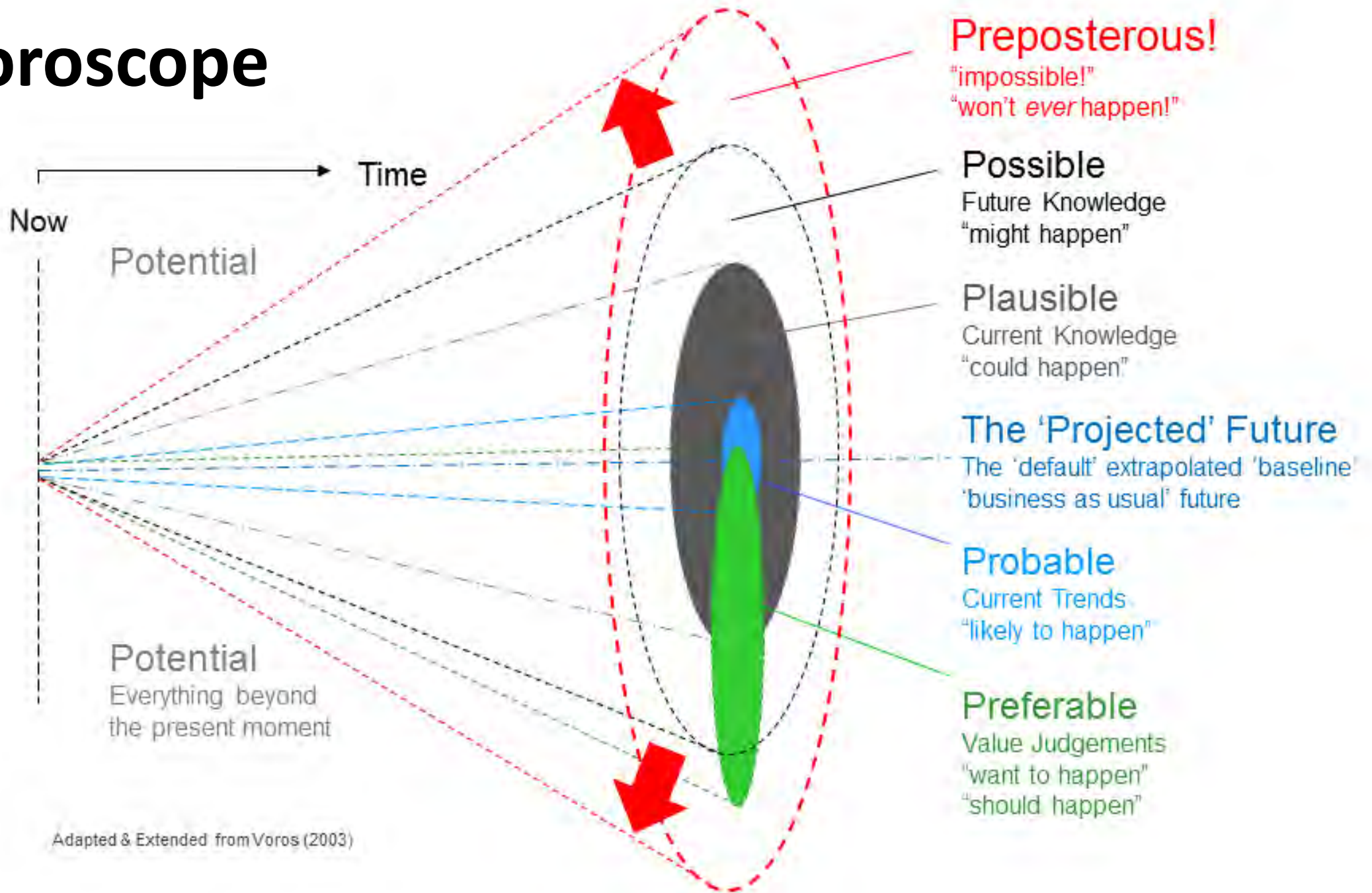


Boiling frog

Definition: A problem that happens or builds up so slowly that it is noticed only after it is too late.

Examples: Climate change (e.g., the weather getting warmer or drier every year); businesses not being alert to disruptive innovation from competitors; rifts in society, such as hostility towards people of different races, religions, etc.

The Voroscope



The Overton Window





The “Used Future”

<https://best-sci-fi-books.com/23-best-steampunk-books/>







1.5 DEGREES



“Postnormal Times”

“An in-between period where old orthodoxies are dying, new ones have yet to be born, and very few things seem to make sense”

Chaos, Complexity, Contradictions



-Ziauddin Sardar

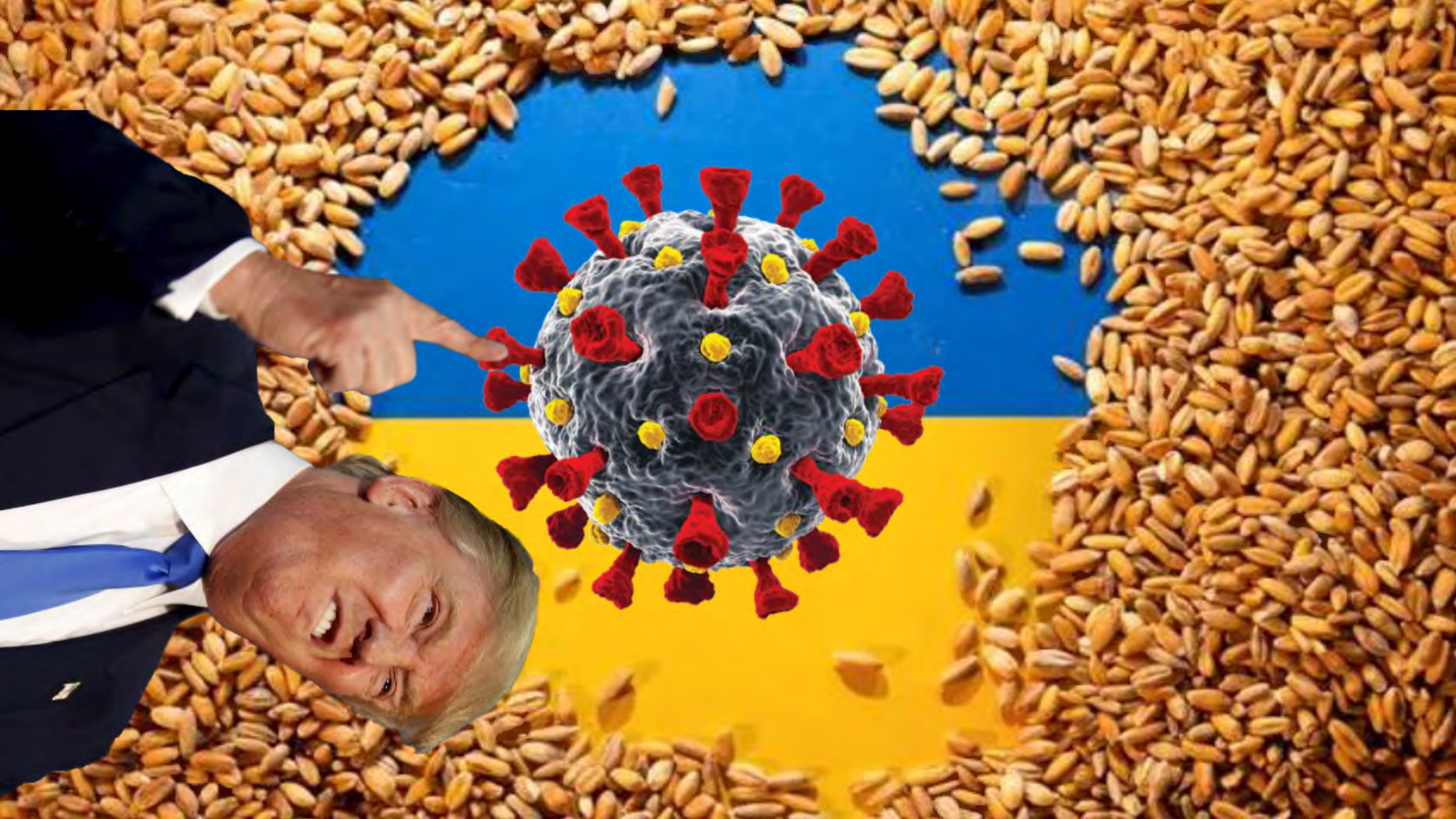
An Era of Radical Uncertainty?

Previous Assumptions

- Rise of China: new era of great-power competition, but range of other rising powers will balance & diffuse tensions
- Need to confront climate crisis would provide strong shared incentive for collaboration, with global institutions becoming more inclusive & central in managing distributed power (e.g. G20, WTO, WHO)
- US acceptance/support for global institutions would rise as its hegemonic power weakened, with sense of the need for wider set of partners to achieve its goals
- Democracies & liberal economic models would be resilient despite China's rise & Russia's authoritarian turn, due to superior accountability, free information, and growth of middle class
- Globalisation would continue, discourage conflict, smoothen progress

Discontinuities..





Learning

- Emerging markets see a world in which power is broadly distributed & no one can fully be depended upon, so no sense to join any single camp. New “cold war” will be partial, for most countries in the world will not be joining in?
- Globalisation far from dead. It can bring viruses, terrorism and nuclear fallout, but also vaccines, digitalization, innovation. *Factors shaping it are overwhelmingly political.*
- *World is complicated, not simple and binary. Range of possible futures for humanity is wider than we thought.*
- *Makes little sense to plan for all sorts of unknowable potential events. Instead, foster ability to learn + build adaptability into our systems*

What we don't know

- Nuclear use?
- Conflict in East Asia?
- Extent of deglobalization pressures on people/economic/IP flows, “rules-based order”, & global institutions
- Great power alignment combinations (& 3rd world alignments)

We are in an age of radical uncertainty! (aka “Polycrisis”) *How do we innovate, adapt, decision-make, execute for future-ready survival and success?*

Polycrisis

“A cluster of related global risks with compounding effects, such that the overall impact exceeds the sum of each part”. Such risks range from the cost-of-living crisis, which the WEF ranks as the most severe global risk within the next two years, to large-scale involuntary migration and erosion of social cohesion.

While business and government leaders have been dealing with risks such as geopolitical tension and natural disasters for centuries, others, like ecosystem collapse and the consequences of failing to mitigate climate change, feel more like uncharted territory.”

REUTERS


World Business Markets Sustainability Legal Breakingviews Technology

Climate Change

7 minute read March 13, 2023 10:52 PM GMT+8 - Last Updated 2 months ago

Food brands struggling to weather the 'polycrisis' unleashed by war and climate change

By Sarah LaBrecque



A woman walks through a submerged sorghum field after heavy rain in Koumari village, on the outskirts of Ndjamena, Chad. October 26, 2022. REUTERS/Mahamad Ramadan

Summary



Crisis

Opportunity





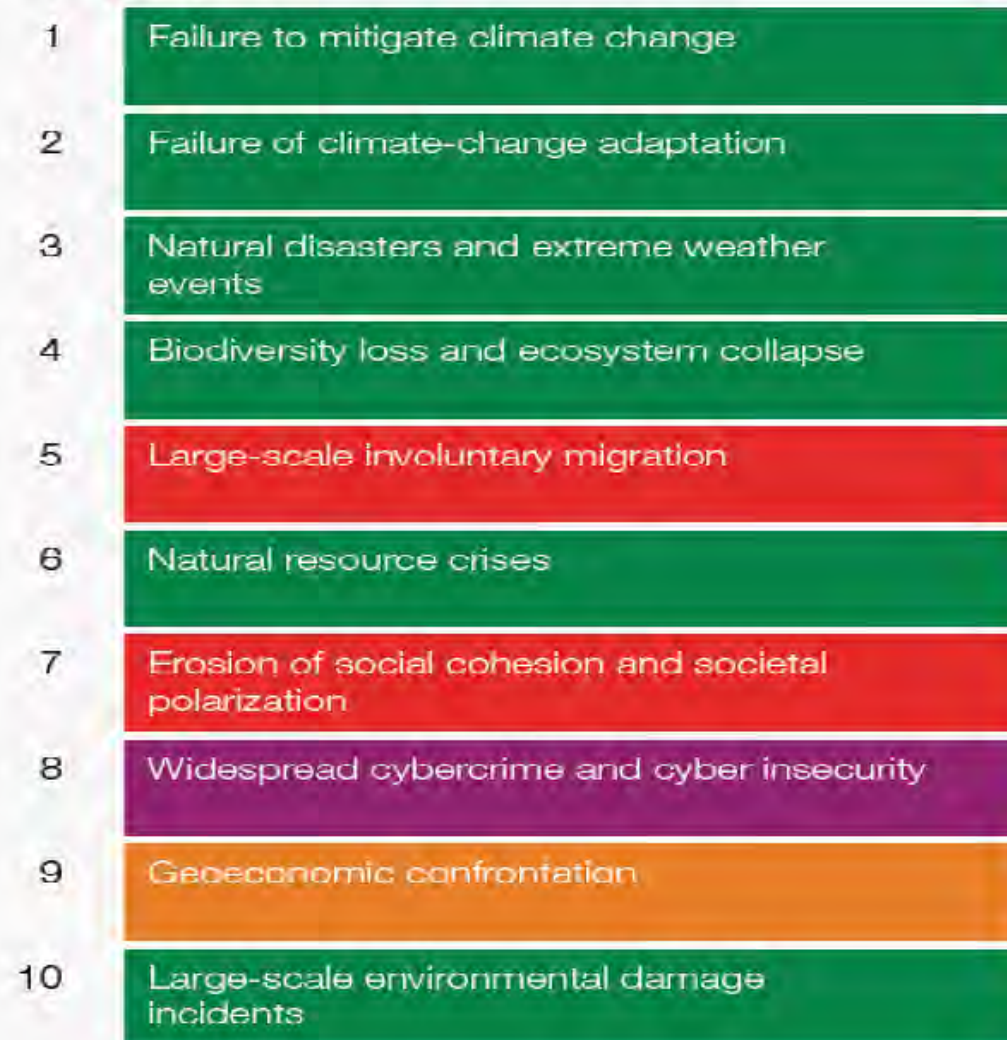
Global risks ranked by severity over the short and long term

"Please estimate the likely impact (severity) of the following risks over a 2-year and 10-year period"

2 years



10 years



Risk categories

Economic

Environmental

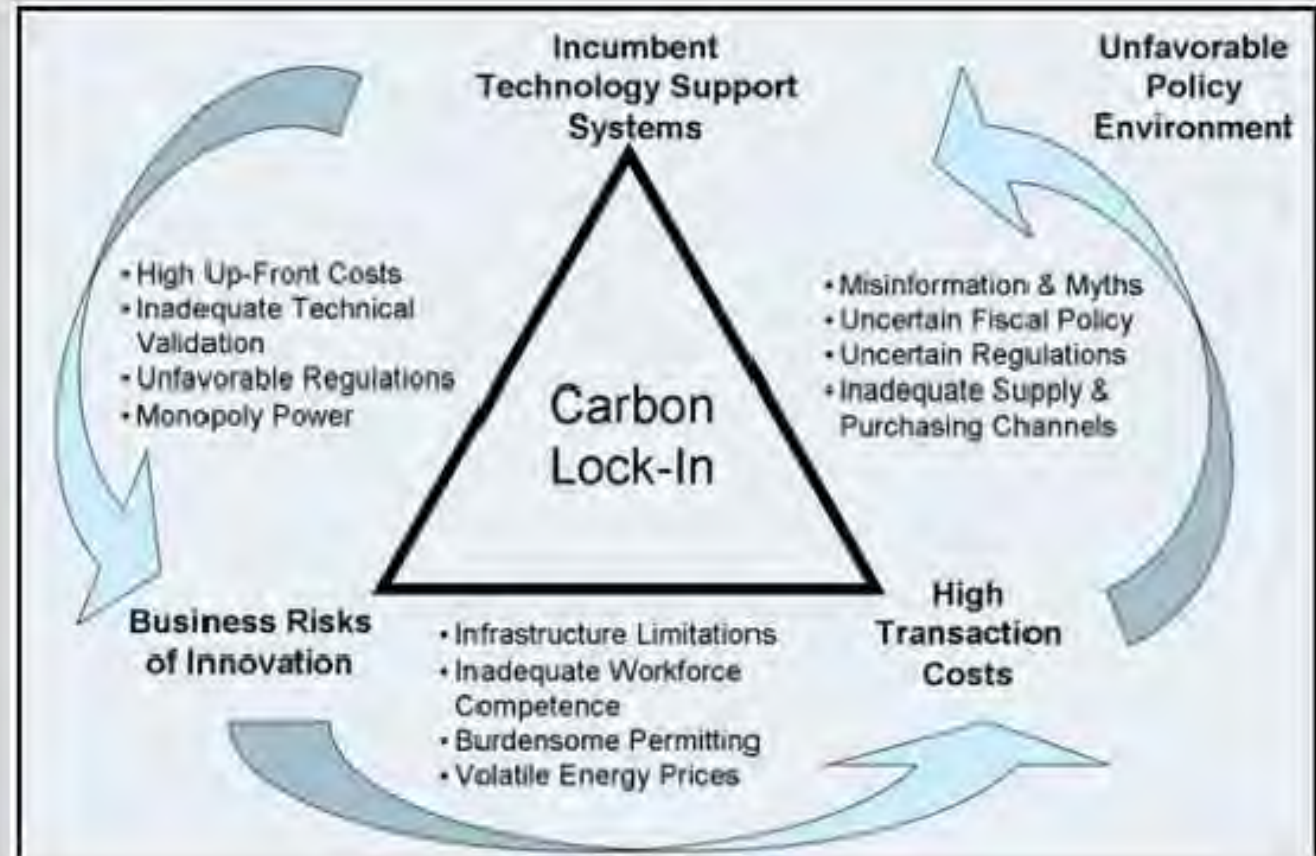
Geopolitical

Societal

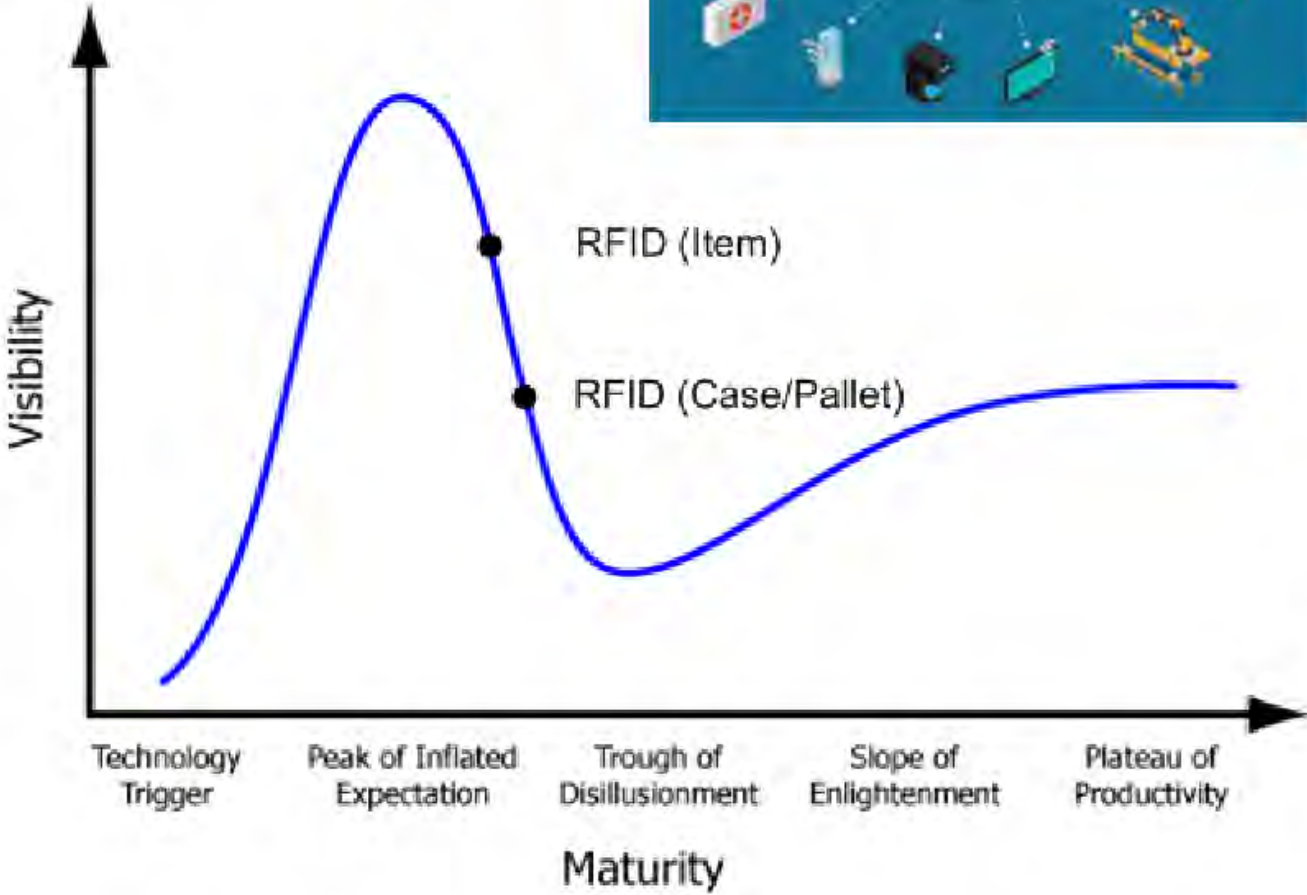
Technological

Source: WEF
Global Risk
Report 2023

Path Dependency

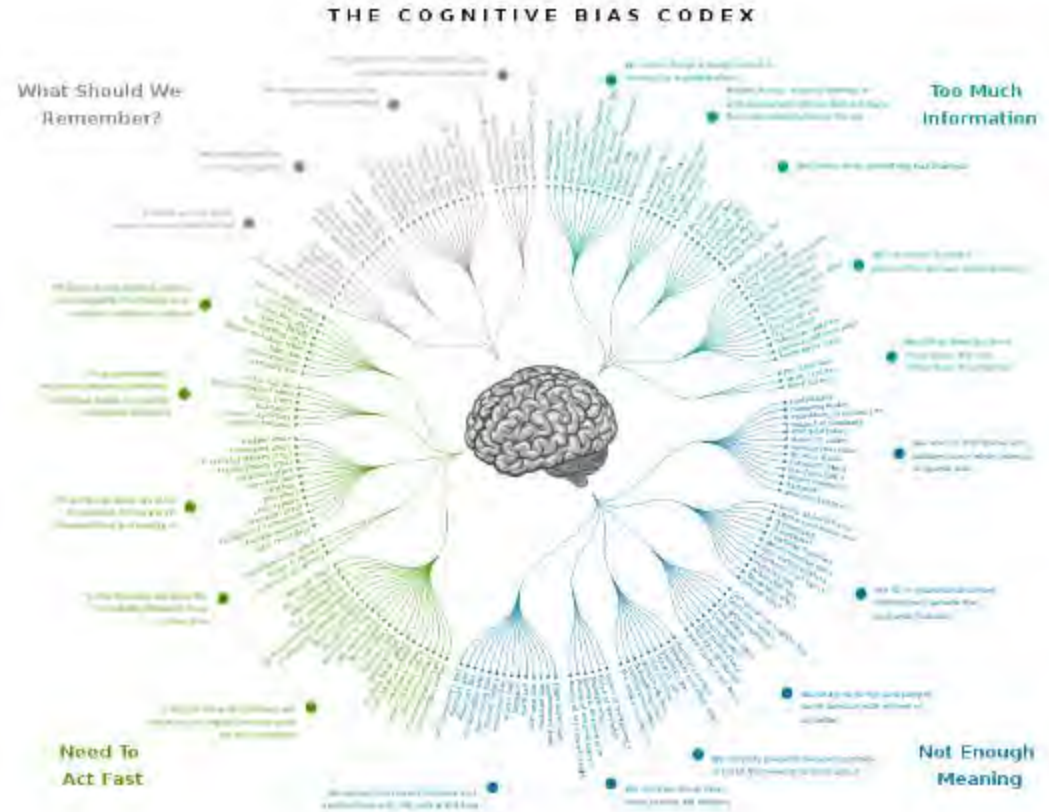


All Hype? "Pump & Dump"?



Cognitive Biases

- “fighting the last war”
- “where you stand is where you sit”
- Hubris?
- Deeply held worldviews & assumptions
- Cognitive brownout
- Over-reliance on heuristics (thinking short-cuts)
- Desiring comfort & familiarity (affiliation, blind obedience, bystander effect)



Foresight – A Definition

“Foresight brings together insights from different fields – economics, systems theory, engineering, sociology, and others. It explores a range of plausible alternative futures by identifying drivers that influence what could come next.

Foresight investigates change from a systems perspective that recognises that a system consists of parts, and that those parts and the overall system interact with each other. Foresight examines how the interactions take place and what they generate..

..It is important to understand that foresight does not give us the power to predict the future or perceive all that could happen. It is not the same as forecasting, which is mainly based on linear extrapolation from historical data, evidence and probability.

While forecasting draws on what we have learned from the past, foresight adopts a nonlinear, forward-looking view of change. It illuminates directions and possibilities, giving us a chance to consider options. In a sense, Foresight helps us learn from the future (or, more precisely, alternative plausible futures).”

Strategic Foresight – What/Why

A set of tools and approaches for anticipating changes and discontinuities (often *beyond our technical and jurisdictional domains*) that will shape the future in our areas of concern..

- ..**Early warning for first mover advantage**
- ..to **challenge assumptions & uncover blindspots** of decisionmakers & spark reexamination of worldviews
- ..to support **future-ready forward plans & strategies** and “windtunnel” their consequences
- ..and **rally stakeholders**, internal and external, to co-envision futures & co-create an aligned approach, sense of vision/mission, culture and values
- Instrumentally, a good tool to **advance agendas & seed perspectives** subtly & persuasively, drawing stakeholders into a compelling narrative



Anticipatory Governance

“A system of governing that is made up of processes & institutions that rely on foresight & predictions to decrease risk & develop efficient methods to address events in their early conception or prevent them altogether” (*Wikipedia*)

“Best practices grounded in a systematic approach to applied foresight, to support future-ready whole-of-government & -nation visions, objectives, strategies programmes, mindsets, and capabilities.” (*Luke*)

Anticipatory Governance

Doctrine

**Establishment,
Structure, Process**

Mandate

**Autonomy of
thought / action**

**Internal & Client
Vision & Narrative**

Culture

**Plugins: Public,
Private, People
Sector,
International**

Capabilities

**Whole-of-Govt,
Thematic, Sectoral**

**Whole-of-Nation
& Beyond**

**Process Loop:
Policies,
Programmes,
Plans, Strategies**

Metrics & Review

Informal Survey on State of Future-Readiness – Results Summary

1. To my awareness, my country's public service has capabilities and programmes which develop perspectives (<i>e.g. emerging issues, scenarios and action/reflection takeaways</i>) addressing:	Average (scale of 1-5)
a. the future of the public service as a whole (e.g. emerging challenges/opportunities and transformations in the roles/expectations of governance)	3.03
b. the future of specific ministries/agencies mission domains	2.87
c. the future prospects and situation of my country as a whole	3.23
d. economic futures for my country	3.23
e. social/cultural/identity futures for my country	3.00
f. climate and environmental futures for my country	2.97
g. health/wellbeing/happiness futures for my country	2.90
h. the future of my region and related implications for my country	2.93
(Scale of 1-5: 1 – not at all; to 5 – regular and robust coverage and deliverables)	

<p>2. In my opinion, greater futures literacy (<i>i.e. awareness of methods and sense of empowerment to thinking through and preparing for uncertain futures</i>) and future-readiness (<i>i.e. appreciation of emerging issues/scenarios and translation into appropriate and effective strategies and initiatives</i>) are needed:</p>	<p>Average (scale of 1-5)</p>
<p>a. In my public service, as a whole</p>	<p>4.17</p>
<p>b. In my country's business community</p>	<p>4.00</p>
<p>c. Across social groups and civil society in my country</p>	<p>3.80</p>
<p>(Scale of 1-5: 1 – not needed at all; to 5 – very much needed)</p>	

3. What are some issues or themes that are critical uncertainties about the future (high importance, multiple possible trajectories/outcomes) which you think are not well understood or prepared for? [Response summary, with editorial polishing & similar responses combined]

- I. Climate emergency / ecology / earth systems
 - A. Water usage
 - B. Green agenda
 - C. National adaptation approaches
 - D. Frequency of natural disasters – earthquake, volcano, tsunami, hurricanes, floods
 - E. Carbon trading
 - F. Sharing of best practice

- II. Governance & national security futures
 - A. forward-looking national development philosophy / vision (e.g. inclusiveness, meritocracy)
 - B. public service futures / public sector reform / public sector size
 - C. conflict
 - D. oversight and monitoring for good governance; control of corruption
 - E. organised crime – narcotics, smuggling, etc.
 - F. control of immigration
 - G. national cohesion, social cohesion
 - H. divides due to religion, race, domestic regionalism, inequality
 - I. conflicts over limited natural resources
 - J. e-governance
 - K. cybersecurity
 - L. dynamics between political leadership and professional bureaucracy
 - M. gauging public sentiments and harnessing stakeholder perspectives
 - N. future of leadership
 - O. foresight

- III. Economic development futures
 - A. Future of employment/jobs
 - B. Economic diversification
 - C. industry development and transformation
 - D. Inequality/inequity
 - E. Digital trade
 - F. Infrastructure futures
 - G. Industry development related to green transition raw materials

- IV. Food security
 - A. Local production potential vs imports
 - B. GMOs / bioengineering in the food system
 - C. Harnessing unutilised land with agri potential
 - D. Enhancing value-add
 - E. Integrating IT “smart farming”
 - F. Sustainable / ESG foods

- V. Demographic futures; National health, wellbeing, happiness futures
 - A. Population growth trends
 - B. Out-migration (brain drain, economic migrants with families left behind)
 - C. In-migration and resistance to it
 - D. Fertility, Ageing and life expectancy
 - E. mental health across different demographics – children, youth, parents, adults, aged; root causes

- VI. Education
 - A. More focus and investment in education
 - B. Neuroatypical learners
 - C. Bullying

- VII. International dimension
 - A. Conflict
 - B. Nuclear risk
 - C. Great power relations and ripple-effects
 - D. relations of developing countries with international donor organisations

- VIII. Energy & Tech futures
 - A. R&D
 - B. AI
 - C. Space exploration
 - D. Digitalisation
 - E. Energy policy transformation
 - F. Renewable/Clean energy
 - G. Boosting fossil fuel discovery (!)

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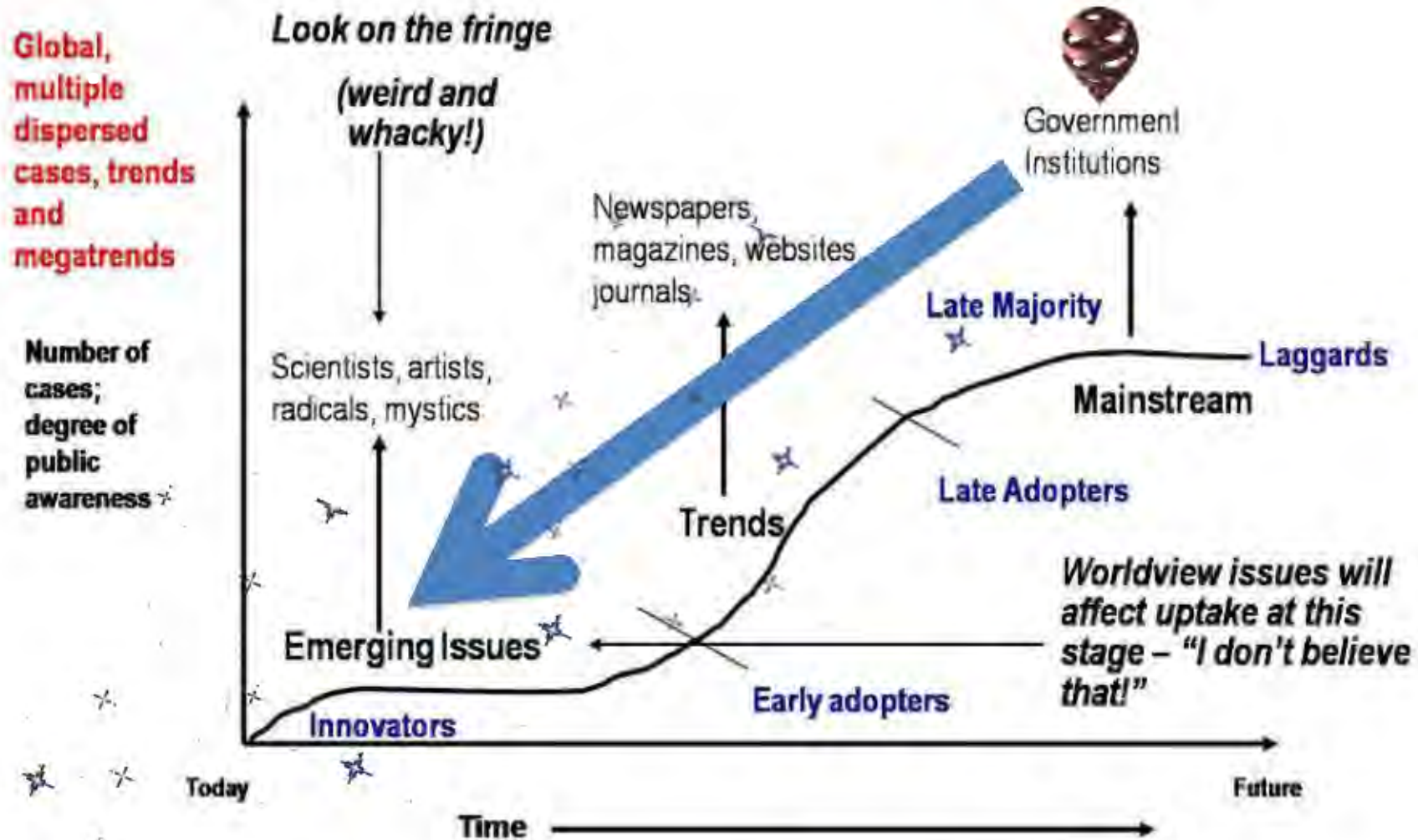
“The future is already here. It’s just not evenly distributed yet”

– William Gibson

Horizon Scanning



Where we want to be/see



Adapted from the work of Graham Molitor, Wendy Schultz and Everett Rogers

PESTEL Framework

- **P**olitics
- **E**conomics
- **S**ocial
- **T**echnological
- **E**nvironmental
- **L**egal & **R**egulatory

EMERGING STRATEGIC ISSUES (ESIs)

- ✓ Pose significant impact to your domain ecosystem and mission/vision (discontinuities, changed strategic landscape, challenges / opportunities)
- ✓ Implications not sufficiently understood / addressed; potential for governments to be surprised
- ✓ We have some means to shape the issue and its impact

Emerging issue: Greenwashing



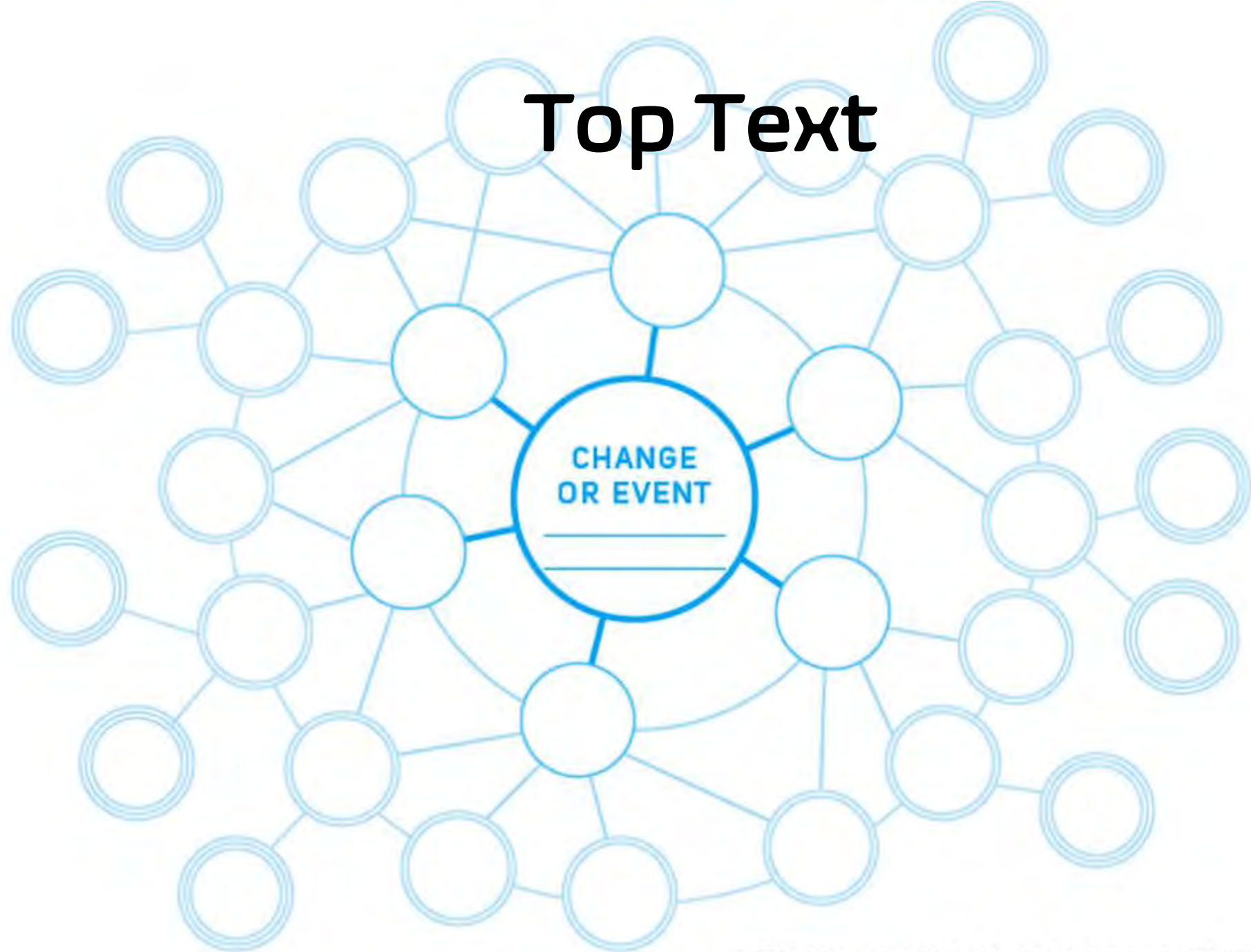
Futures Wheels



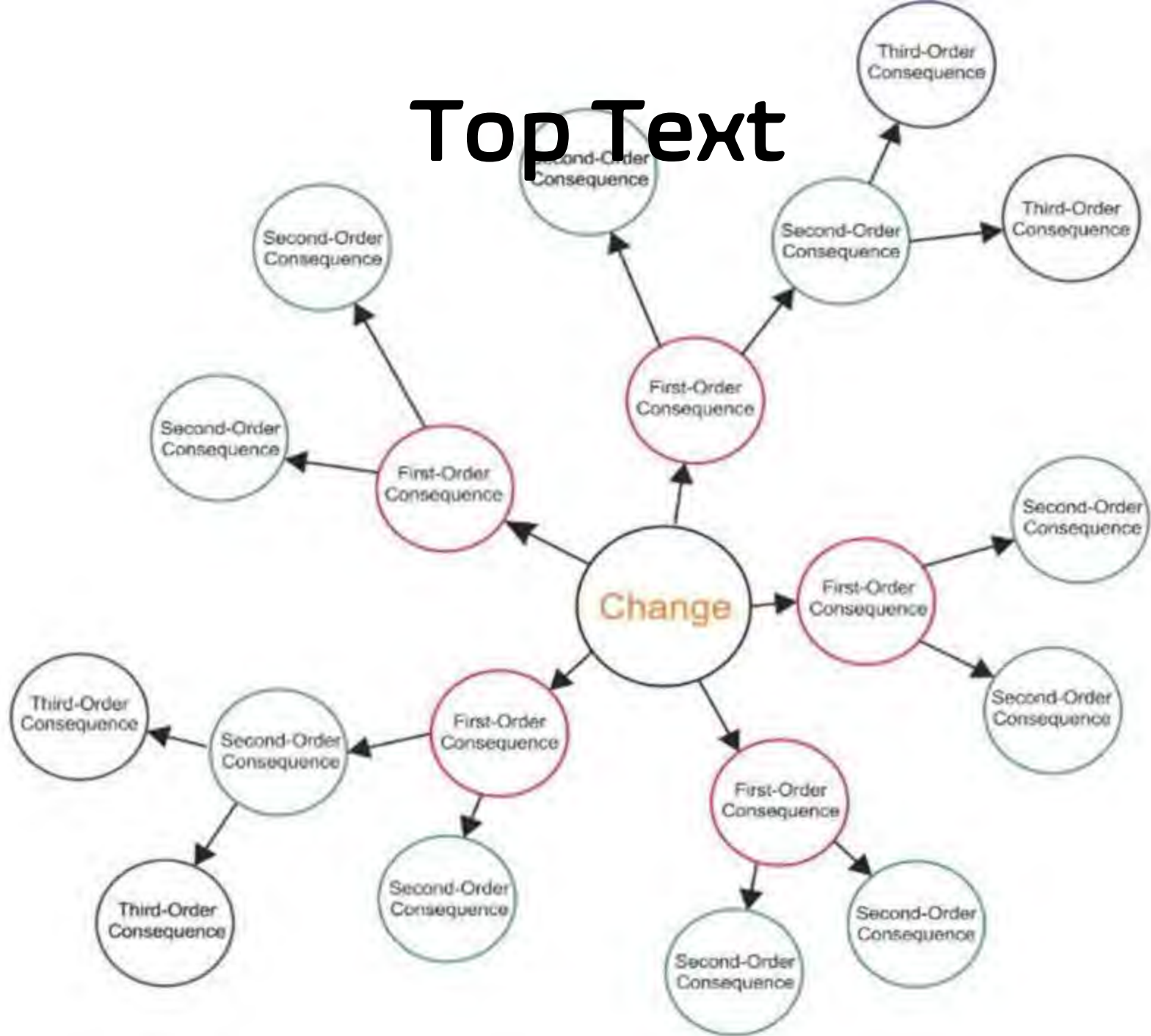
Purpose of Futures Wheels

- Organise thoughts & look at waves of consequences from a trigger trend or event
- Visualise interrelationships
- Flag unexpected & significant effects (opportunities, threats)
- Convenient group facilitation tool
- Helps you refine understanding of implications of trends/emerging issues and actions
- Think from perspective of whole system – different actors, & international dimension

Top Text

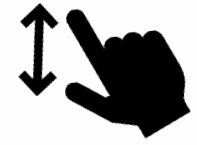


Top Text





Mixed Group Activity – Futures Wheels, e.g. on the following topics:



1. Unprecedented heating – sudden glacial melt
2. Lethal Avian Influenza Pandemic strikes much of Asia. Millions of People (and Chickens) die.
3. Wealthy hi-tech cities become highly self-sufficient



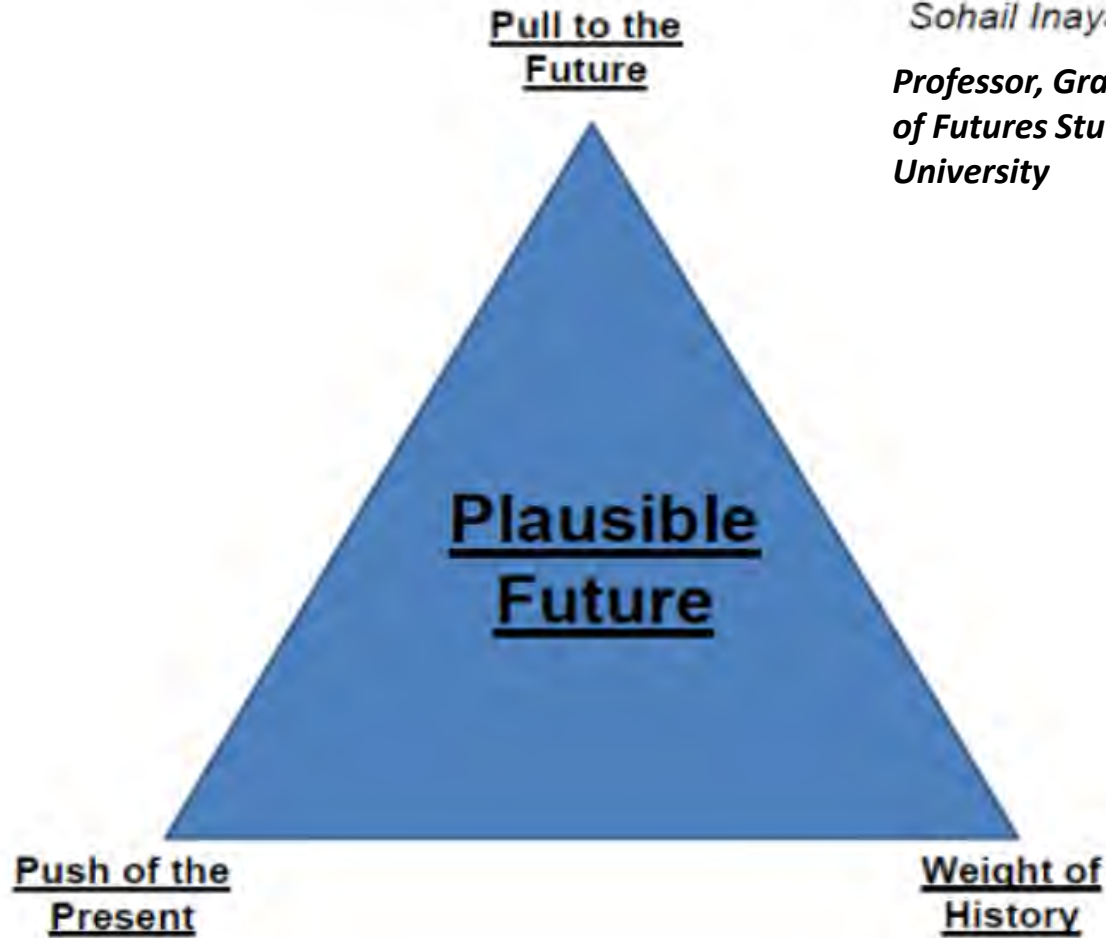
Futures Triangles – the “Physics” of the future

- Understand landscape of forces and issues shaping the future of an issue or concern
- “Competition” between Past, Present, & Future dynamics shape new developments.
- Structured group brainstorming tool to draw in diverse stakeholders
- Map situation to plan transformation (can consider wheels, ESIs shaping → triangle elements)
- Prelude to thinking about Driving Forces, the “raw materials” for Scenarios

Futures Triangle

*Developed by:
Sohail Inayatullah,*

*Professor, Graduate Institute
of Futures Studies, Tamkang
University*



Futures Triangle

Weight of History

- What is holding us back, or getting in our way?
- What are the barriers to change?
- What are the deep structures that resist change?

Push of the Present

- What trends are pushing us towards particular futures?
- What quantitative drivers and trends are changing the future?

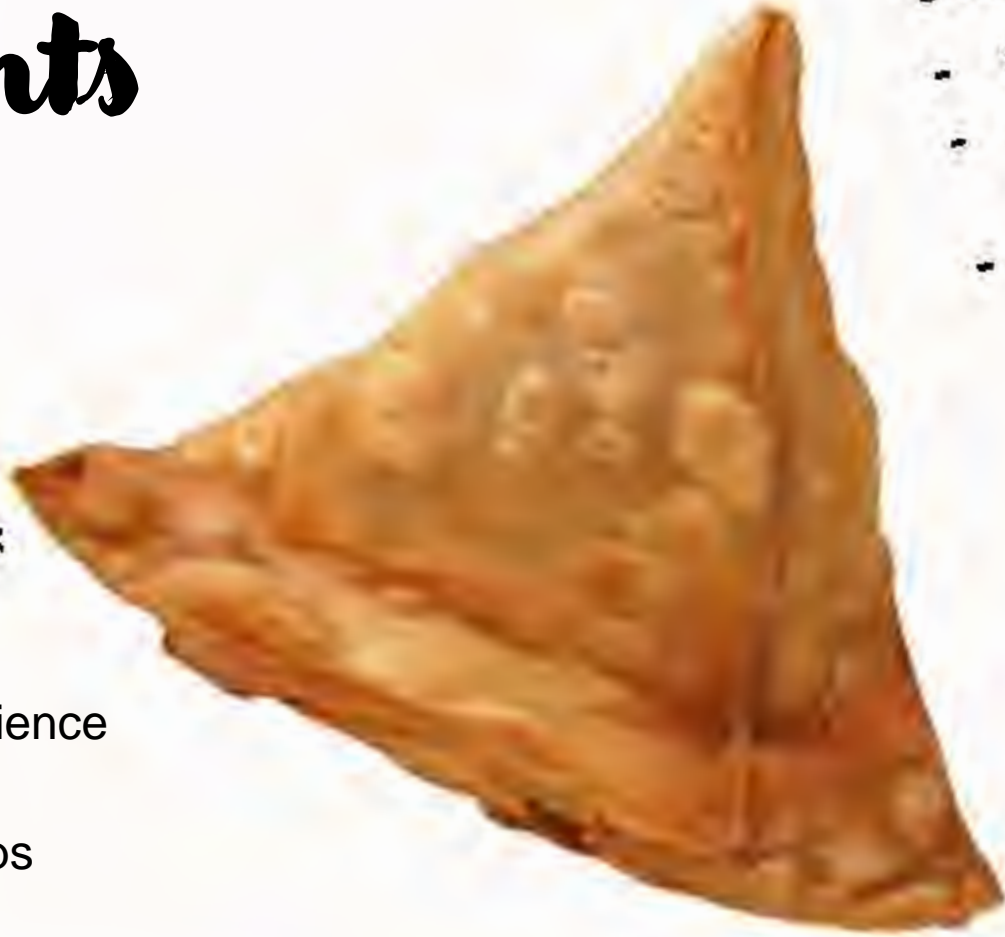
Pull of the Future

- What is pulling us towards particular futures?
- What are the compelling images of the future?
- Are there competing images of the future?

Beauty Pageants

Push

- Ageing audience
- Declining sponsorships
- Scandals



Pull

- avatar co-contestants
- Eco-wokeny: save the cows, eat the plants
- Like my Tiktok



Weight / Ballast

- "I wish for world peace"
- BORING!!
- Objectification
- Soft power asset





FUTURES & THE SINGAPORE PUBLIC SERVICE



Strategic Foresight – Why?

- Acknowledgement of the past's powerful yet finite bearing on the future
- Accelerating change, increasing complexity
- More “wicked problems”, shocks and discontinuities
- Singapore's country context – small, resource-poor, globally exposed





“There are practical men who maintain that such speculations are a waste of time and they have no bearing at all on solutions to immediate day-to-day problems.

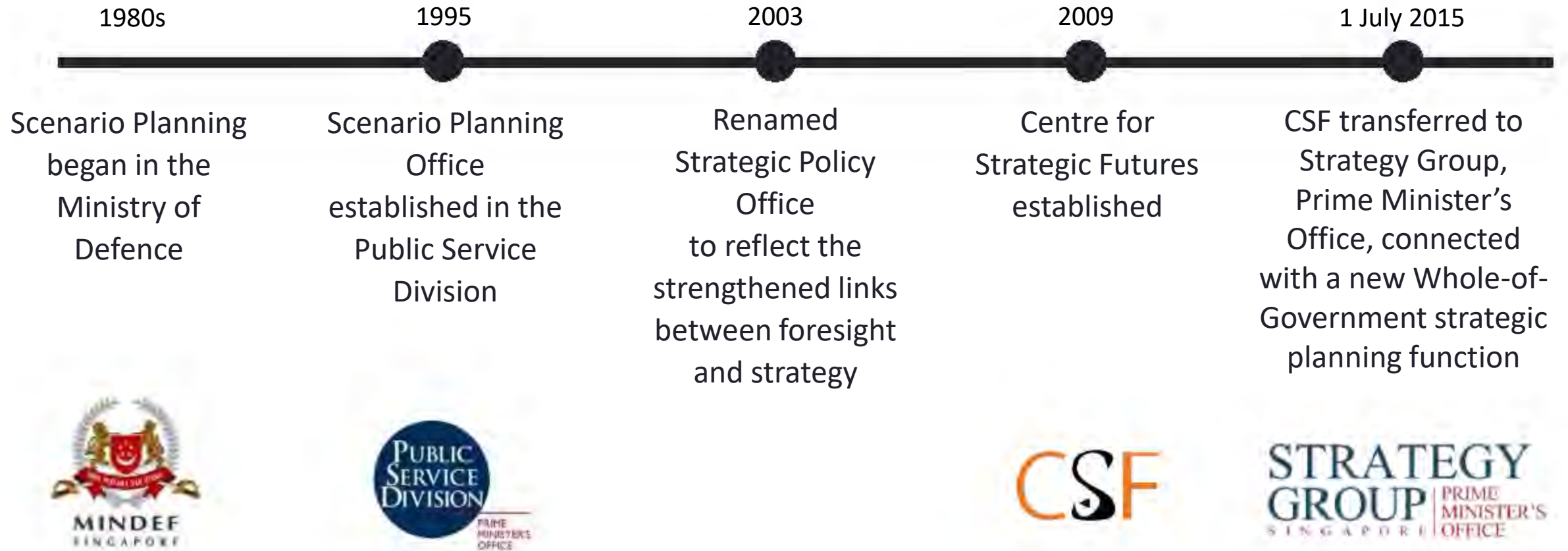
This may have been so in earlier periods of history when changes were few and minute and were spread over decades and centuries

We are not only living in a world of accelerating changes but also of changes which are global in scope

As change is about the future then only a future-oriented society can cope with the problems of the 21st century.”

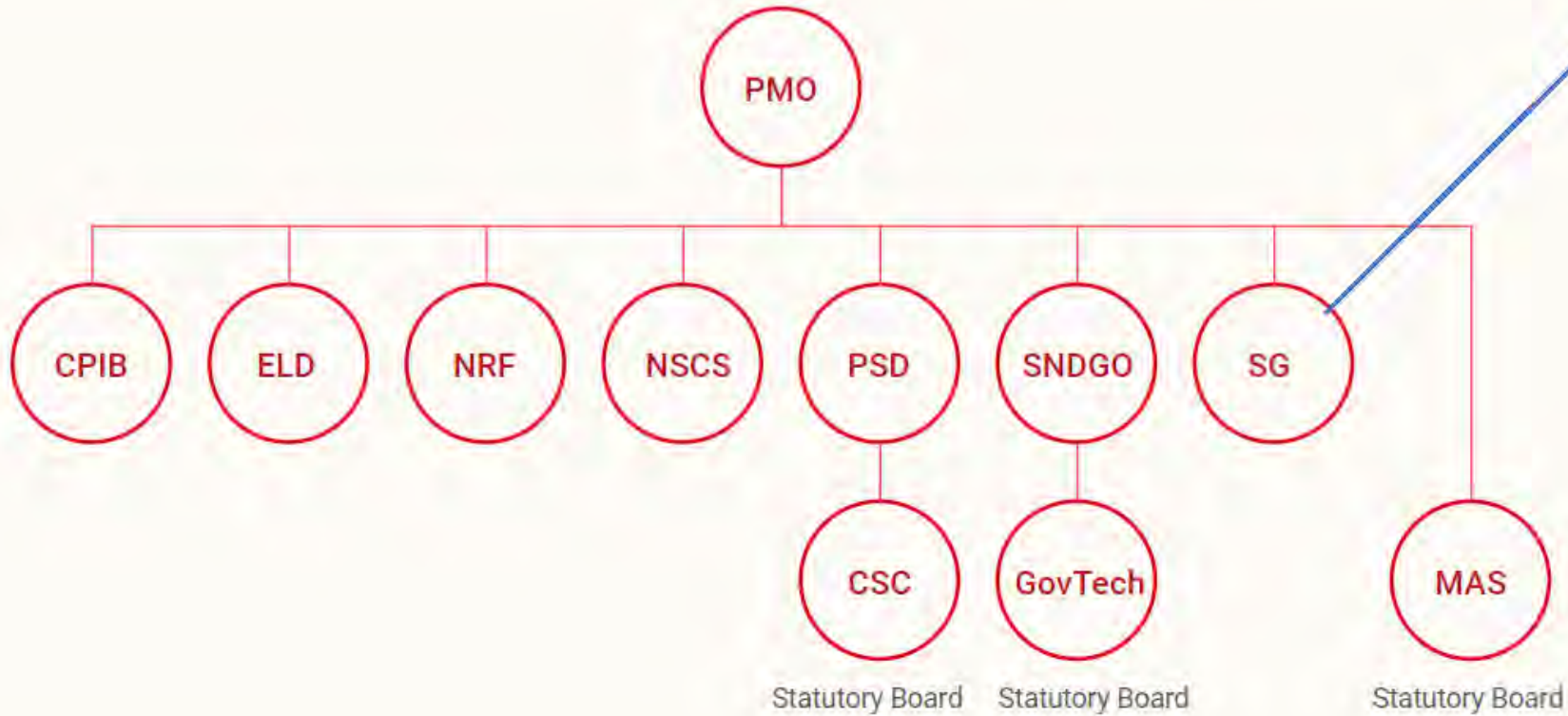
- S. Rajaratnam

FUTURES THINKING IN THE SINGAPORE GOVERNMENT





PRIME MINISTER'S OFFICE
SINGAPORE



Strategy Group Directorates:
(selected)

- **Centre for Strategic Futures (CSF)**
- Strategic Planning
- Economy & Sustainability
- Geo-Strategic Policy
- Socio-Economic Policy
- Urban Liveability & Community
- Social Resilience
- Policy Analytics
- Technology
- National Climate Change Secretariat
- National Population and Talent Division

To position the Singapore government to navigate emerging challenges and harness potential opportunities

HOW DOES CSF THINK ABOUT THE FUTURE?

- Build capacities, mindsets, expertise and tools for strategic anticipation and risk management
- Develop insights into future trends, discontinuities and strategic surprises
- Communicate insights to decision-makers for informed policy planning

Culture building and building a sustainable futures culture in WOG

Pushing the envelope and raising the level of

AMBITION



SCOUT

Communicating & translating insights to inspire change and

ACTION



CHALLENGE

Building capacities in wider system to foster

ALIGNMENT



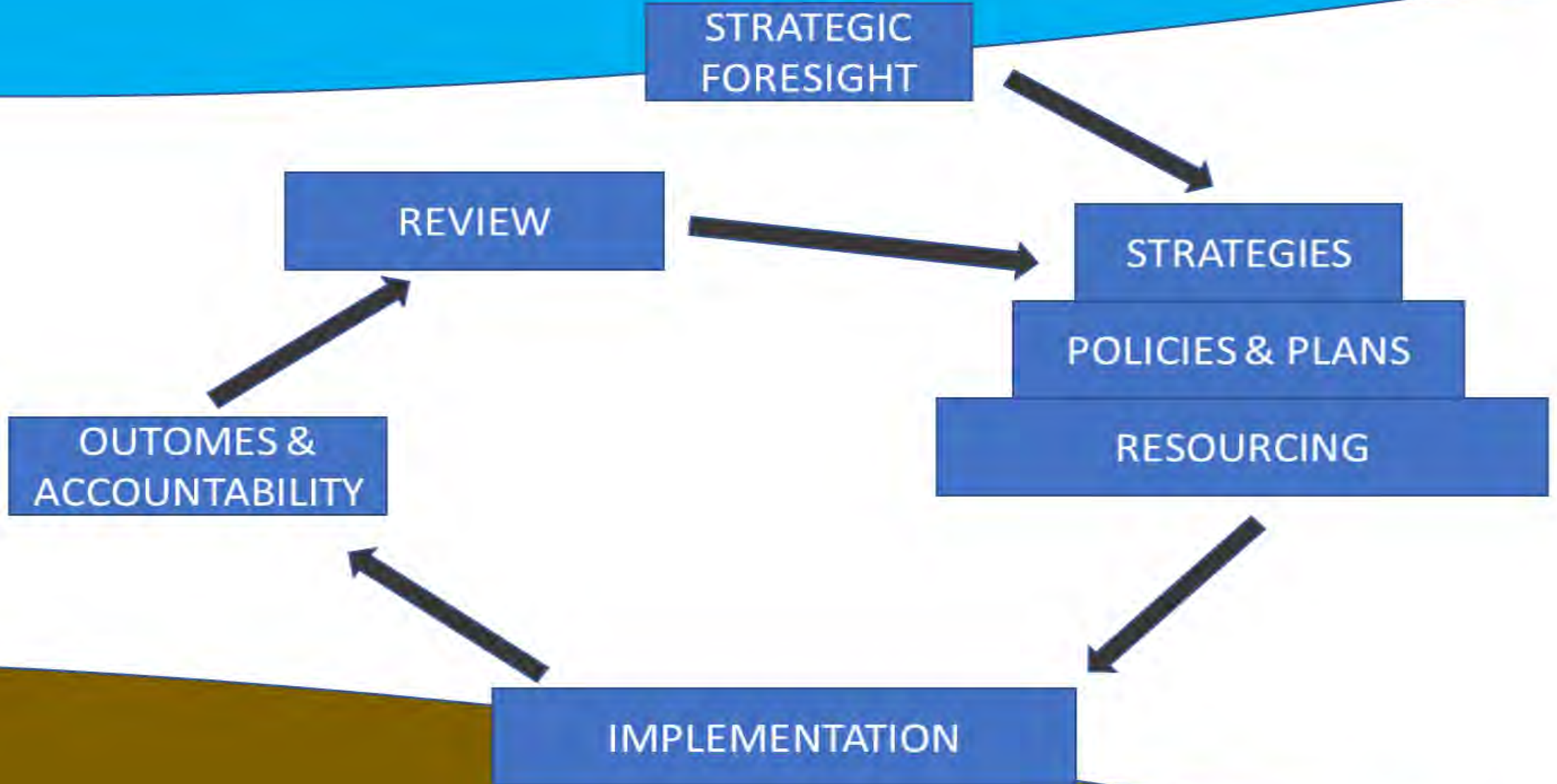
GROW

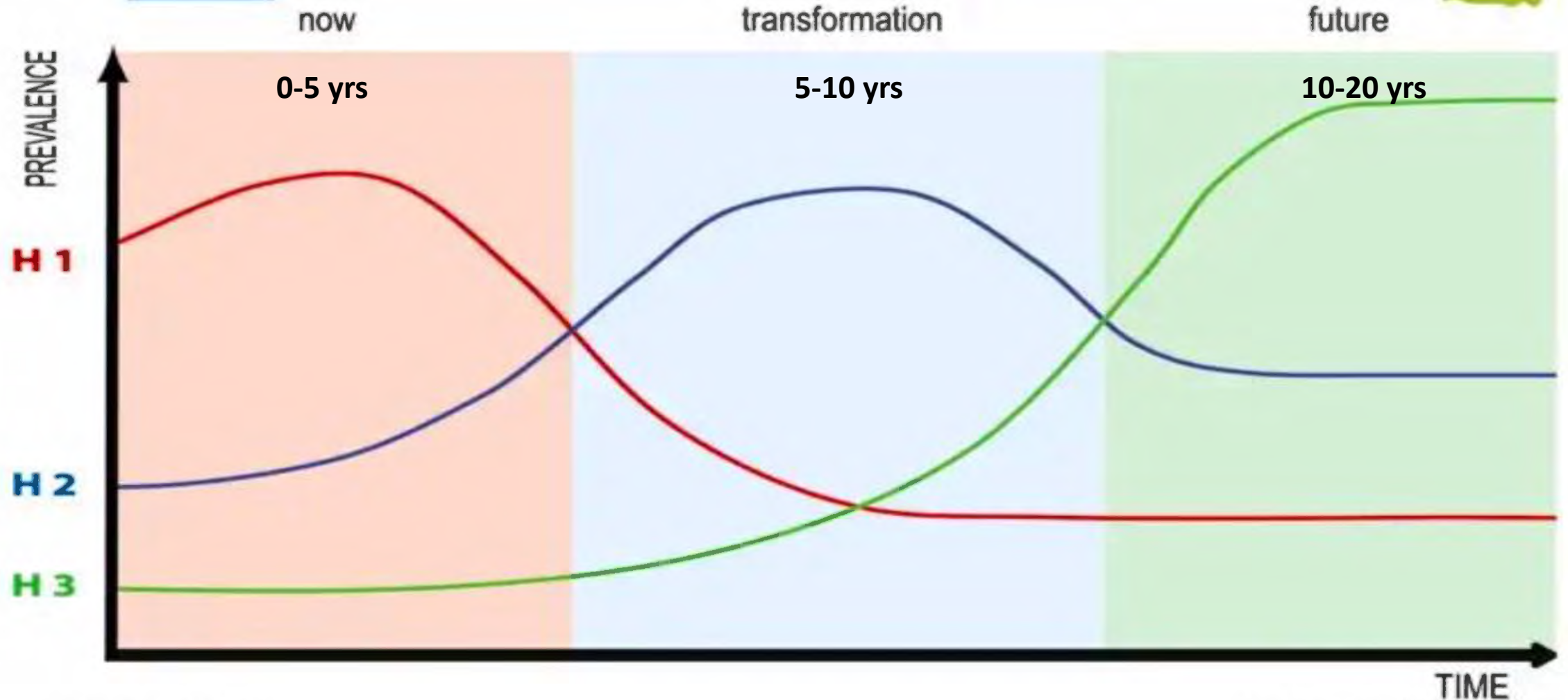
Key Initiatives of CSF

- Identify emerging trends & issues to inform national priorities
 - “weak signals”
 - Networks for “outside-in” perspectives
- “Stress-test” strategies against changing operating environment
 - National Scenarios → Flagship Initiatives
- Capability Development
- Global plugins
- Decisionmaker & WOG plugins



Schematic: Foresight in Governance Planning Cycle





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www.internationalfuturesforum.com

- **What to keep / discard?**
- **Foresee emerging “snakes & ladders”**
- **Weigh “weak signals” of future paradigm shifts**
- **Change management / “just transition”**
- **Address snakes & ladders**
- **Validate/refresh read on signals**
- **First-mover shaping & exploitation of change**
- **Legacy ballast (baggage?) from the past, transposed**
- **Systematisation of transformation**
- **New dominant paradigm**
- **Continue to scan & transform**



<https://www.todayonline.com/singapore/big-read-feeling-lost-digital-world-some-elderly-shun-technology>



Singapore 21

S21 Diary

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S21 Drama



Story



Donate

Highlights ..

Last updated on 20/01/04.

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NE OVER THE YEARS



NE MESSAGES (1997)

- Singapore is our homeland; this is where we belong.



HEAD, HEART, HANDS (2007)

- “Head”: Think critically about issues and arrive at a deeper understanding of the challenges facing Singapore and what it means to be Singaporean.
- “Heart”: Connect emotionally with the Singapore story in order to appreciate Singapore and have a deeper sense of

Key Programmes of the Green Plan

City in Nature

Energy Reset

Green Economy



Resilient Future

Sustainable
Living

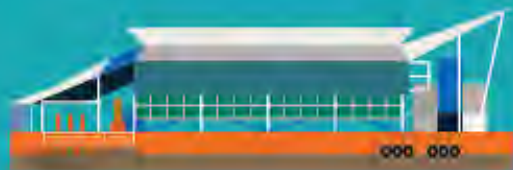
We are starting our preparations now to deal with climate change that will last into the next century, and building up our national resilience for the future. Though Singapore has always been hot and humid, we don't want temperatures to be unbearably high. By increasing greenery and piloting the use of cool paint on building facades, we will moderate the rise in urban heat.

As a food loving nation, we have to make our food supply more resilient. We have announced our 30-by-30 target – to meet 30% of our nutritional needs through locally produced food by 2030. We will do this in partnership with a vibrant agri-food industry and our communities.

[View All Key Targets](#)

BUILDING OUR CITY OF GREEN POSSIBILITIES

Everyone can play a part in building a resilient & sustainable nation



SHORING UP COASTAL PROTECTION



To explore ways to protect our coastlines from sea-level rise, site specific studies at the City-East coast were started in 2021, and studies for Jurong Island and North-West coast will commence this year.

TOWARDS A ZERO WASTE NATION



Producers of e-waste are now required to collect and treat their products at end-of-life. 3,500 tonnes of consumer e-waste have been collected for recycling and extraction of valuable materials since July 2021.



To reduce the use of disposables and encourage sustainable habits, a minimum 5c charge for disposable carrier bags will be implemented at larger supermarkets in mid-2023.



To encourage everyone to recycle, a recycling container will be distributed to households in 2022.



STRENGTHENING RESILIENCE OF FOOD SUPPLY



To better match our food consumption patterns, the S\$60m Agri-Food Cluster Transformation Fund will be enhanced to offer higher co-funding quantum for a wider range of food types such as fruited vegetables, mushrooms, and shrimps.

New land and sea tenders will be launched on 20+10-year leases from end-2022 to facilitate long-term planning and investments.



NISCS

NATIONAL SECURITY
COORDINATION SECRETARIAT



Lee Kuan Yew
School of Public Policy

National University of Singapore



Institute of
Policy Studies

engaging minds exchanging ideas

SG x COVID-19

“While we learn from this and past experiences, we must also have the flexibility of mind to adjust to new situations, and not be trapped by fixed views of how a crisis might unfold”

– DPM Lawrence Wong

Looking back on COVID-19

Reviewing our experience

What we did well

- 1 Healthcare System**
 - Expanded healthcare capacity and ramped up swabbing and testing operations
- 2 National Vaccination**
 - Secured early access to COVID-19 vaccines and set up vaccination centres and mobile teams islandwide
- 3 Stayed Open**
 - Secured food and critical medical supplies
- 4 Supported Livelihoods**
 - Provided loans to businesses, rebates and facilitated job placements
- 5 Supported the vulnerable**
 - Financial support for those in need and mental health support for those in distress
- 6 Kept education going**
 - Provided additional resources and support for teachers, parents, and students during full home-based learning
- 7 Maintained high Public Trust**
 - Accurate and timely information through MTF press conferences and other trusted channels
- 8 Rallied the nation**
 - Community support under SG United
 - Tripartite effort to support businesses and protect jobs

What we could have done better

- 1 Outbreak in migrant worker dormitories**
 - Early ground surveillance could have been conducted
 - More reliable data on migrant workers' health and housing
- 2 Border measures**
 - Gradual closure of borders allowed imported infections to slip through
 - Be decisive in imposing border measures, and easing them once no longer effective
- 3 Mask wearing policy**
 - Should have been less definitive on mask wearing in the early days as clinical evidence was evolving
- 4 Contact tracing**
 - Slow adoption of TraceTogether at the start
 - Use of technology must be integrated with operational plans
- 5 Safe Management Measures**
 - SMMs were overly calibrated and difficult to operationalise; more flexibility required
- 6 Transition to endemicity**
 - Repeated tightening and then easing of measures during the Delta waves
 - Shift to Home Recovery Programme happened too quickly and created anxiety

More info at go.gov.sg/covid-19-white-paper

gov.sg

SG x COVID-19

- **Expect the unexpected:** test assumptions and plan for a variety of scenarios, taking in diverse viewpoints. *How may planning parameters change during a crisis? External views to challenge assumptions and plans*
- **Respond nimbly:** Combination of preparedness and improvisation. Pay attention to “weak signals” – raise and react early. Track “near misses”
- **Build buffers & capacity:** dual-use infrastructure economically increases readiness. Private sector partnerships? Essential goods/services. Diversification. Local production capacity. Stockpiling. Fiscal reserves.
- **Care & recognition for frontliners**

DPM Wong: Military has to work with companies to tap latest tech

Govts will have to guide development of technologies for collective security, he says

Andrew Wong

Game-changing technologies like artificial intelligence (AI) are potentially deadly weapons that can alter the global security landscape, and governments worldwide will have to step up to help guide their development, said Deputy Prime Minister Lawrence Wong.

With security considerations coming to the forefront in the light of rising superpower tensions, and cutting-edge technology increasingly being driven by the private sector rather than governments, Mr Wong spoke about the urgent need to harness their development.

"As commercial enterprises continue to make technology breakthroughs in various fields, how can we guide their development to en-

sure these new technologies contribute to our collective security, rather than undermine it?" said Mr Wong, speaking to participants at the fourth Singapore Defence Technology Summit at Shangri-La Hotel on Thursday.

The answers could not be left to commercial enterprises alone, said DPM Wong, who is also Finance Minister, even though the private sector was leading technological breakthroughs, and the line between military and civilian technology had increasingly become blurred.

"This has serious implications for defence establishments all over the world," he added. Militaries and countries would have to work with companies to ensure that these technologies were tapped for their benefits, while their more dangerous aspects were con-

trolled.

The new landscape offered both opportunities and challenges, said Mr Wong, who sketched out how quickly it had changed. Commercial offerings in the fields of 5G and low-earth orbit satellites for battlefield communications are already superior bespoke defence solutions, he said.

Cloud computing infrastructure allows militaries to store and process large quantities of data securely.

Beyond the digital domain, commercial technologies will almost certainly play a larger role in the delivery of lethal force as well, said Mr Wong. An example of this is how the Ukrainian military has repurposed off-the-shelf drones meant for hobbyist aerial photography to attack Russian tanks with bombs.

An immediate issue that needed to be addressed was the rapidly advancing AI, he added.

"We can imagine a future powered by AI - improving all as-

pects of life, and enabling breakthroughs in different fields from medicine to transport.

"But AI is potentially also a weapon - it can accelerate the future of autonomous warfare, enabling weapons that are more precise, cheaper, faster, and even with the capabilities to learn, making their missions virtually unstoppable," he added.

Basically, the question was how the world can get the best of AI while protecting itself against the worst consequences, said Mr Wong.

What was clear was that the burden to answer this should not fall on commercial enterprises alone, but that governments, industry and civil society should work to develop principles and guidelines to develop AI, he said.

Governments have guided the application of nascent technologies before, he said. He cited the way governments had collectively developed international protocols so that nuclear technology that

was originally developed for military use could be harnessed to generate civilian energy, without falling into the hands of bad actors.

New technologies will also unleash an expanding range of asymmetric threats, as malicious actors and criminal groups look to exploit vulnerabilities inherent in computer systems to launch ransomware and cyber attacks, sometimes against major gas lines, food supply chains and hospital systems.

Asia emerged as the most targeted region by cyber attacks, according to analyses such as IBM's Security X-Force Threat Intelligence Index 2022. It found that the region received one in four recorded attacks throughout the year.

Earlier in 2023, cyber security firm Group-IB discovered a hacking campaign that had breached seven high-profile targets in South-east Asia and Europe - including government and military agencies.

The group, dubbed Dark Pink, was found to have compromised

the defences of military branches in the Philippines and Malaysia. The Cambodian and Indonesian governments were also compromised in the campaign.

"These emerging cyber threats are global in nature, and if we want to mount effective responses and stay ahead of these adversaries, global cooperation is needed," stressed Mr Wong.

He called on countries to improve collective resilience to such threats by working together to coordinate policy responses, share information and conduct joint operations. An example of such collaboration is the Asean-Singapore Cybersecurity Centre of Excellence, which provides training and information among its members.

"We may all have different background and interests, but I believe we all share the common desire to harness technology to benefit our countries and our peoples," he said.

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Fourth service can help SAF, commercial sector co-exist

Digital and Intelligence Service's chief says private firms already play key role in modern warfare

Andrew Wong

The military's preference for structure and tradition has its place and purpose, but failure to adapt and to integrate commercial technologies will mean missing out on new capabilities.

POTENTIALLY CREDIAL

Regardless of where you stand on this particular conflict, many militaries and governments would have found it quite discomforting... the extent to which corporations can play a decisive role.



BRIGADIER-GENERAL LEE YI-JIN pointing to the role of SpaceX's Starlink satellites in the Ukraine-Russia conflict.

man forces.

Microsoft, on the other hand, suspended sales of its products and services in Russia, and has been supporting Ukraine in its digital defence by detecting, assessing and protecting it against Russian cyber attacks.

DG Lee said at the conference: "Regardless of where you stand on this particular conflict, many militaries and governments would have found it quite discomforting... the extent to which corporations can play a decisive role."

Businesses may make their decisions based on their customer and shareholder concerns, but governments and militaries need to be part of the conversation, he added on the importance of seeing policies on how technology is integrated into warware.

DG Lee's comments echoed those of Deputy Prime Minister Lawrence Wong, who said in a speech earlier in the day that countries need to take a hard look at how their militaries adapt and integrate commercial technologies to meet their security needs.

This includes rethinking how defence systems are developed and procured, as well as working more closely with commercial entities, given the speed of technological change, said Mr Wong.

"These moves will not be easy — they involve not just organisational changes, but also cultural changes too," he said. "But they are necessary for the defence sector to fully benefit from digital and dual-use technologies."

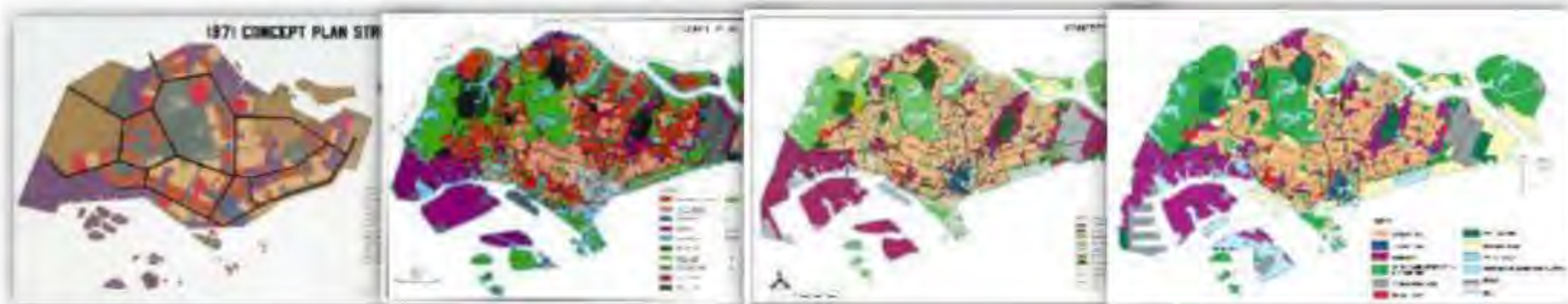
Defence planners in the afternoon discussions agreed that the world's shift into a highly digital era will not be without challenges, with Mr James Allen, executive vice-president of cyber-focused consultancy firm Allen & Mittum, saying those in the military, government and corporate sectors to keep adapting so as to fully embrace and be able to tap on insights.

More than any prior period, now is the time for deeper investments to help people transition amid these adjustments, said Ms Lily Twitlow, corporate vice-president and deputy chief technology officer of Microsoft.

From right: Deputy Prime Minister and Minister for Finance Lawrence Wong and Defence Secretary-General Ng Eng Hen taking their leave after attending the Singapore Defence Technology Summit at Shangri-La Hotel on Thursday. BY PHOTO IAN SUHUA



Every decade, URA seeks inputs from the public to review the long-term plans for the country



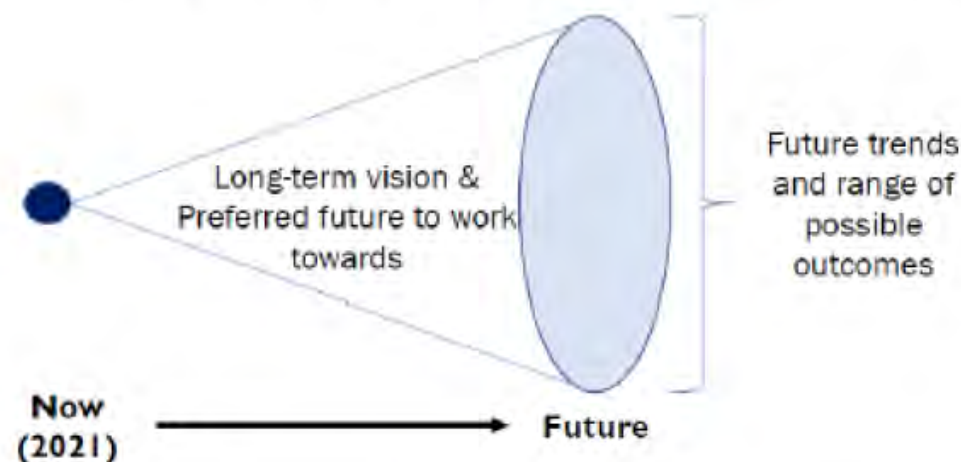
LTPR21 is our chance to envision the future of Singapore, 50 years from now

1 Understand Our City & Long-Term Plan Review

It will be increasingly challenging to cater to our needs within our limited space



URA aims to develop robust plans that can adapt to fast-evolving needs and unexpected circumstances while providing future generations with options



Through the LTPR, we want to have a conversation on how to cater for the different needs, better prepare for the future, while balancing the different trade-offs

Extract from
URA LTPR
video
(youtube)



that will be little herb gardens and farming areas

DESIGN FOR BUSINESS

Good design is good business

More than just a form-giving function, design transforms business and organisations, humanises technology, and innovates system and customer experiences

-  **Grow your business in new markets**
with design as strategic tool
-  **Stand out in the market**
with innovative products and services
-  **Deliver people-centred experiences**
for your customers and employees

Transform your business now



SINGAPORE DESIGN WEEK



Singapore, a UNESCO Creative City of Design

Singapore has been designated a UNESCO creative City of Design since 2015. This is a recognition of how intertwined design is in our fabric of life, influencing how we live, work and play. and play in, design can elevate our daily life; making our city more liveable and loveable.

**SECTORAL CASE EXAMPLE:
AGRIFOOD FORESIGHT**



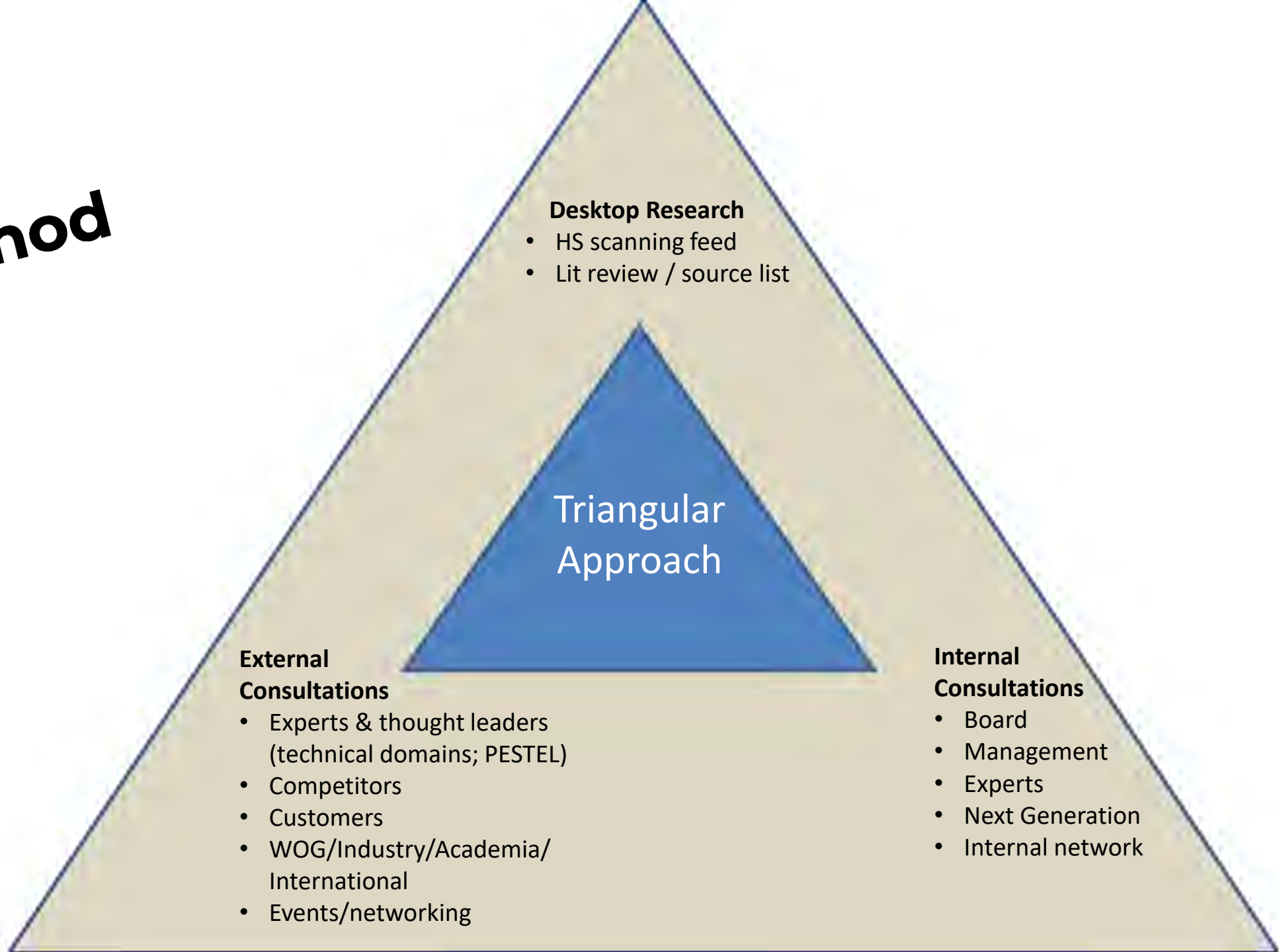
Futures Role (*internal*)

“Vision”: That our AgriFood Agency may anticipate, shape & win the future.

“Mission”: A strategic partner to our leaders & planners, leveraging on a range of capabilities & sources to deliver:

- Foresight: Flag & assess emerging drivers, challenges/opportunities, and disruptions
- Shaping: Frame a proactive “future-ready” agenda for our organisation and ecosystem. Advocate & co-create new longer-term strategies/approaches.
- Future-ready organisation: Build a pro-future-readiness culture and awareness/capabilities; build thought leadership in foresight.

Method





What?

- Integrate / sense-make a range of inputs
- Trends, discontinuities

So What?

- Implications for ecosystem, stakeholders & AVA corporately
- Opportunities & Challenges
- Possible Responses

So Then?

- Seed & shape dialogue
- See through to where Implications are firmed & Response areas are framed & tasked

Now What?

- In-depth studies / research
- Solutioning support

Futures: Key Lines of Work

Scenarios

*Driving Forces /
Emerging
Strategic Issues*

*Deep
Dives*

*WOG
Interface*

*Comms &
Events*

*Translation:
Futures to
Strategies*

*CapDev &
Culture-Building*

*Grow External
Network*

AGRIFOOD ESIs

- ✓ Pose significant impact to Asian food security and agrifood ecosystem (discontinuities, changed strategic landscape, challenges / opportunities)
- ✓ Implications not sufficiently understood / addressed; potential for governments to be surprised
- ✓ We have some means to shape the issue and its impact

Examples of ESIs in Food

1. Food system transformations
 - New age biz models across value chain
 - New(er)/Grey(er) foods
 - Production disease shifts
 - Changing food habits – alternative nutrition?
 - Food-Water-Energy-Land nexus
 - Food geopolitics – trade/investment curbs & flows
2. Changing zoonotic disease drivers & threat-scape
3. Emerging technologies revolutionising our sectors
 - Robotics, AI, big data, bioengineering
4. Weather/Climate trajectories & effects
5. New social attitudes & expectations
6. New comms environment; “fake news”
7. Future of Work



RISE OF URBAN HOME FARMING

- What
 - COVID-19, Economic Pressures, & Changing Work Patterns have led to more city dwellers growing and processing more of their own food, on a household basis, and a neighbourhood basis
- So what
 - A food safety issue?
 - A food sovereignty opportunity?
 - An agrifood sector threat/opportunity?



Dear readers,

Welcome to the first SFNews (Double) issue of 2019 😊

I – Food Trends



The New Year – LNY season is ripe time for looking ahead. This issue overviews key food trends we perceive will play out this year internationally, and how food innovators and businesses harness and shape them:

Moving forward, SG's food future depends on how we regulate/exploit these trends. *Food for thought as you read: Which trends will/should stir and shape SG's food system more significantly? How may their local effects vary from the global mean? Which trends should we capitalise on, and become trendsetters in, to advance SG's food interests? We'll advance the conversation in subsequent issues.*

II – Food Visions



...vision for the food system, one nearer-

Futures Workshop [6 July]

For the first time as part of OEF, POEG organised a Roadtrip to the Future, sharing on why and how Strategic Futures (SF) work is done in the Public Service.

The 17 Roadtrippers were introduced to various SF tools and methods, applying them through lively group activities and discussions. Roadtrippers charted their take on possible futures for SG using the Driving Forces framework - the building blocks of scenario planning in Singapore - as their road map (Click Here for more info)



What is Strategic Futures (SF)?

How is SF done in the Public Service?

Across the public service, networks of officers work to anticipate and understand possible futures, tapping on a wide range of people and research for insights, along with methods such as scenario planning and the study of emerging issues. SF officers communicate questions and insights to guide strategies and plans for their respective agencies' mission areas.

How is SF done in AVA?

POEG has been using foresight techniques as an aid to planning, and scanning for emerging issues & threats, assessing key issues. At Corporate Retreats, POEG works with cross-Group Mindblazers to identify trends. AVA's strategies are also actively reviewed to gear us for the future. In tandem, we are enhancing our SF focus to avoid strategic surprises, flag "blind spots", question existing assumptions and "future-proof" AVA and our ecosystem, moving ahead towards SG100.

What does Singapore and AVA's future look like?

While Singapore's future is far from certain, we have some idea of the Driving Forces that will shape it. Roadtrip participants debated the impact of factors like global politics and trade flows, and workforce-augmenting/displacing algorithms and robots, for Singapore's future. The changing shape of our society and economy that results would influence how we plan ahead, as a Future Ready AVA, to be on top of tomorrow's challenges and opportunities.

Sze Chuan Jellyfish Flower, Prawn Mayonnaise with Honey Dew, Salted Egg Chicken Thigh, Crabmeat Rolls, California Maki with Wasabi

One of the fastest growing and most exciting food colonies in the world has transformed its community through technological innovation. The result is a truly ultra-delicious and is proven to be more nutritious than you think it is, but there are signs that deep mutations are taking place.

Double-boiled Superior Seafood, Village Chicken Broth

Taking the edge off our VUCA existence, this soupy concoction of mood and social connectivity enhances your view of natural resources. Big Brother Cook has your palate micro-dosed with a massive infusion of vitamin and nutrient delights.

Wok Fried King Prawn, Salted Egg Yolk, Curry Leaves

Wok fried king prawn has long been one of the most popular consumer products and has become a globally renowned product. MegaChef has replaced old ways in its place, with a more than nutrient infused and healthy infused and delicious seaweed seafood.

Roasted Duck with Sze Chuan Hot Bean Paste

Food tech innovators accelerate selective breeding, cell-culturing and genetically re-engineering food to produce new, better and more sustainable products. Duck meat can now be perfectly roasted at low temperatures!

Deep Fried Live Seabass, Tomato Puree Oyster Sauce

Fish for the love of life engineering is now what our early 21st century minds are having trouble coming up with. Genetically re-engineered, raised and served up in a new way, the taste of Xhaba's Crispy Live Seafood is a tantalizing experience. Please sign up to watch us take you there.

Braised Wheat Dough, Red Dates, Black Mushroom, White Radish, "Nai Bai" Vegetables

Dough is no longer made from just flour from intensive harvest, done to preserve earth's natural balance. These ingredients have been bred to the centre of our planet's natural life rhythms of nature.

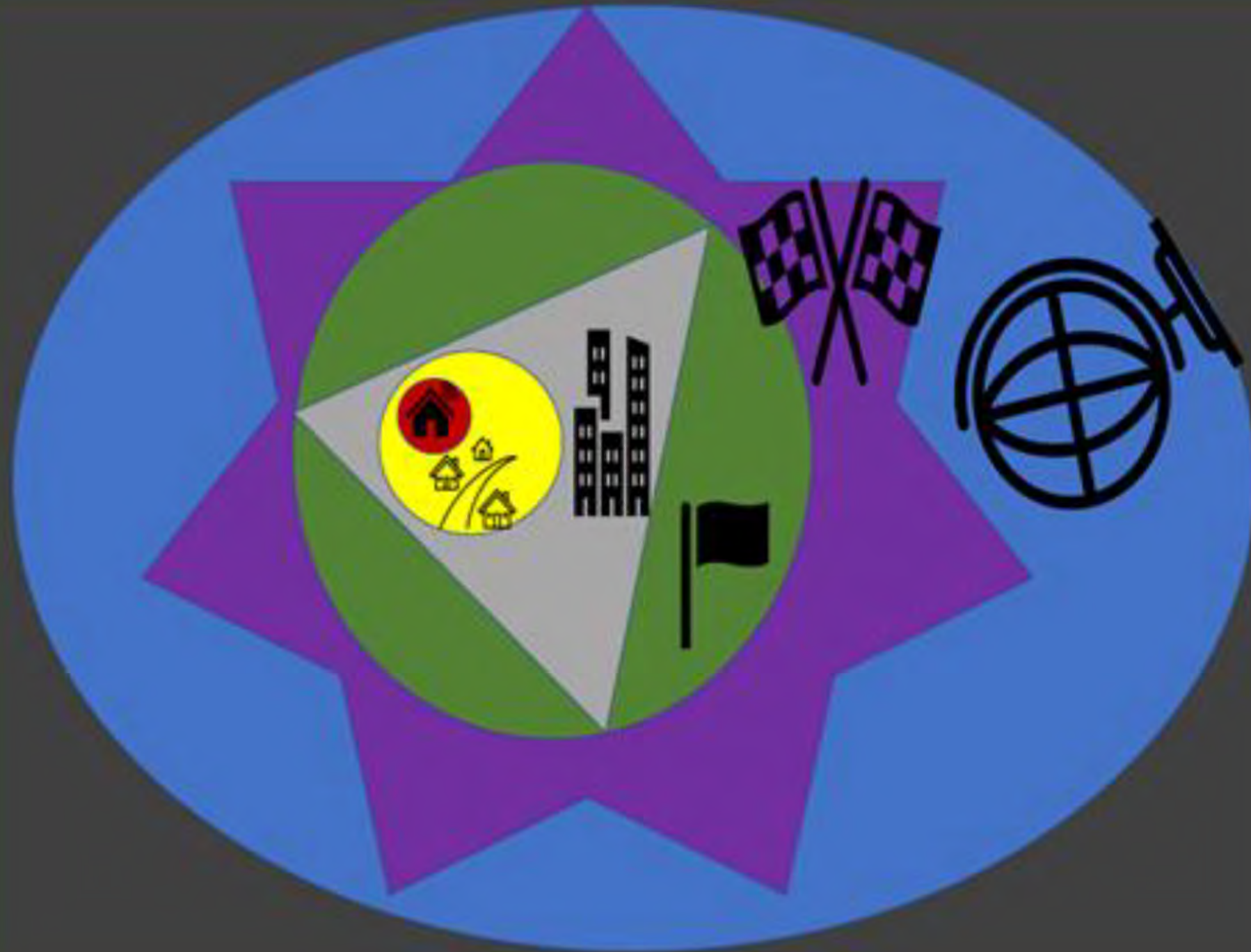
Wok Fried Tom Yam Glass Noodle, Supreme Seafood

Artisanal food production is now a major part of the world's food supply. Bio-organic grains, harvested and transported by the most solar powered, have allowed a premium grade of starch products which sustain traditional and cultured livelihoods of people spanning across the globe.

Black Rice with Coconut Cream and Vanilla Ice Cream

Drying grains of quality, standard issues. 4D printed desserts become a part of an increasing and diversifying temperature. Food kitchen is a major new food production area. The new sweets are the second in young, all the rage.

Developed by
The Singapore Food Agency and
The Centre for Strategic Food

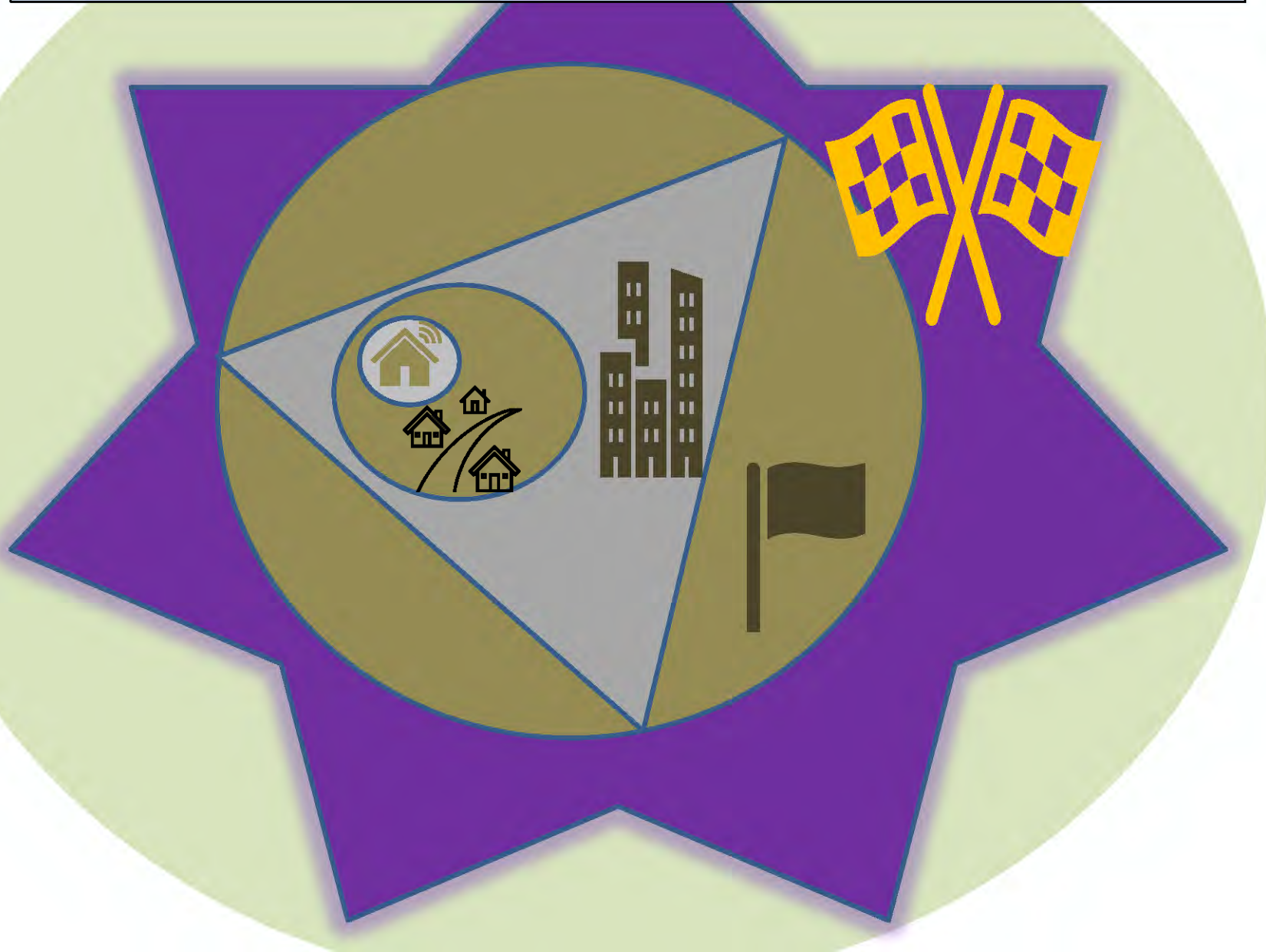


“Onion model” of concentric conceptualisation of potential food sources.

From innermost:

- **Red:** Households
- **Yellow:** Communities/ Precincts
- **Grey:** Urban/Periurban
- **Green:** Domestic
- **Purple:** varieties of cross-border, regional and plurilateral approaches
- **Blue:** “default” sourcing from general global market

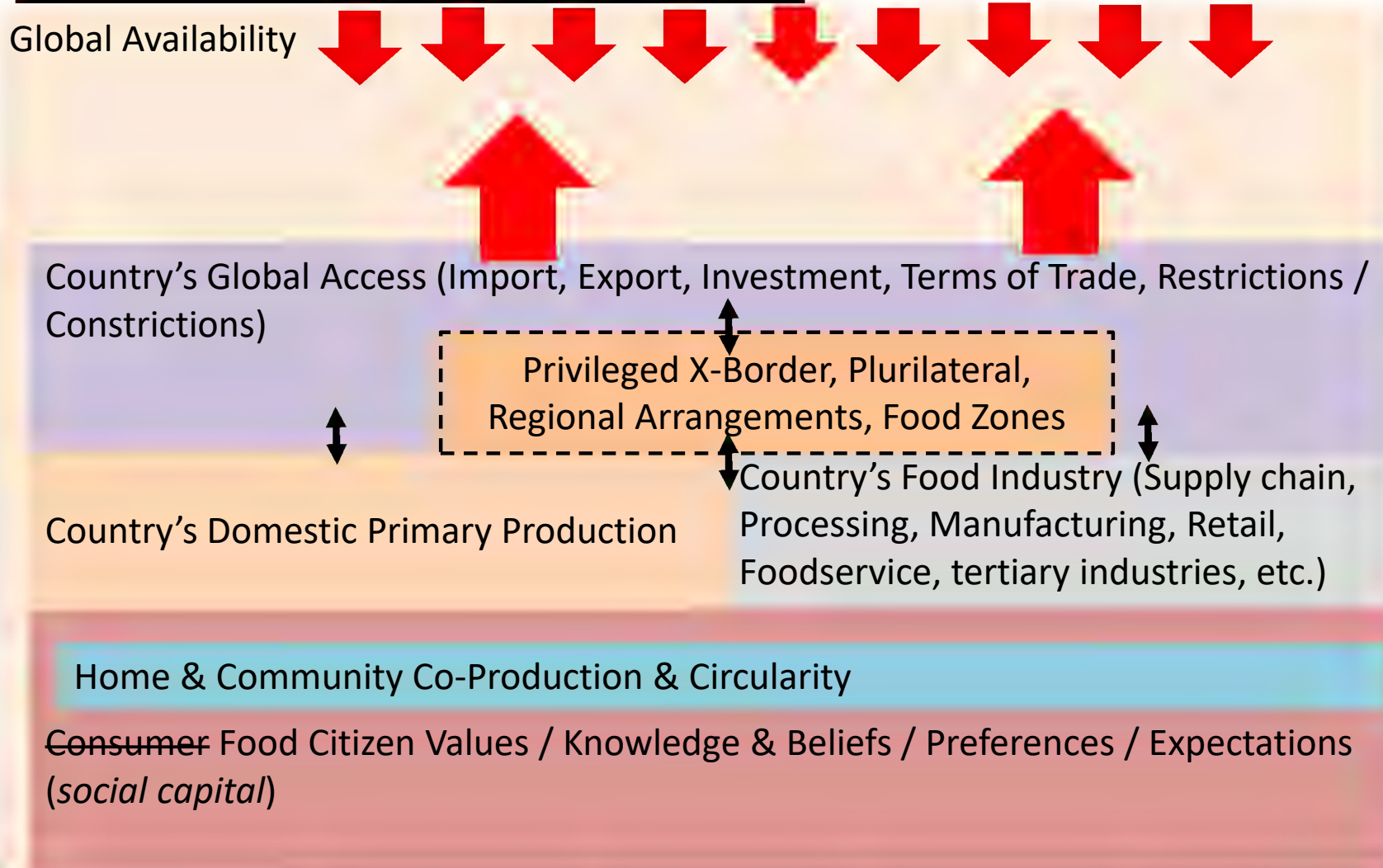
Trusted Minilateral Value Chains



Beyond Borders: Privileged Transnational Cooperation

- AgriFood-Water-Energy pacts and regimes
- ..Lumped with other dimensions of cooperation?
- Provisions across Normalcy, Rainy Day (N-) & Survival+ continuum
- Dimensions: cross-border, regional, plurilateral
- G-B-to-G-B
- Trade conduits and barriers?
- Key tech: AI / big data, bioengineering, biosecurity/OneHealth, new foods production, etc.

National Food Governance Mandala



- Food System Governance:
- C4I & Anticipation (weather / climate / geo-pol-econ / SS chain availability / DIGI)
 - Regulatory enablement / enforcement
 - Local SS / Industrial policy (R&D, Energy / Water, ESG)
 - Local DD policy (access, health, eco, etc.)
 - Global engagement / agrifood trade, investment, finance
 - Knowledge exchange & technical cooperation
 - Stakeholder engagement
 - Powers Resources Interfaces Capabilities Expertise (PRICE)

Outcomes: Sovereignty & Security



REGIONAL / GLOBAL CASE EXAMPLES





Korea's approach to AG

- 1968: Y2K Committee – economic / industrialisation focus, with building national competitiveness & military power via Western-style modernisation as desired “one future”
- AG process assimilated to a shorter-term “development agenda”
- After 1997 Asian Financial Crisis: more traction for foresight-policy integration
- 2001: Alvin Toffler foresight report on “knowledge-based society” fully integrated into national vision & policies. adopted for implementation across ministries and regions, action-oriented direction by Presidential office.
- Foresight institutions established:
 - Long-Term Strategy Bureau (Strategy/Finance Ministry)
 - Future Strategy Office (Information Ministry)
 - Secretary for the Future in National Planning Office
 - Presidential Council for Future and Vision
 - Research Committee of Future & Fusion (PMO)
 - Future Preparation Committee (S&T Ministry)
- Government-led, unilateral national planning & policymaking
- Korea Advanced Institute of Science & Technology (KAIST) Graduate School of Future Strategy – training cadre of young professionals in foresight
- National Assembly Futures Institute (NAFI) – overarching neutral, participatory foresight research institute.





Kazakhstan

- 2019 ADB-supported workshop addressing national development / competitiveness
- Infra, ag, tourism, smart cities & circularity, industry devt., innovation
- Challenged “Used Futures” no longer fit for new context
- Anticipate scenarios & disruptions, new vision, metaphors, narratives
- Cadre of Foresight Champions
- Foresight-to-action focus



Cambodia

- 2019 ADB-supported futures workshop
- Address Digital Economy 2030 & Upper Middle Income 2050 visions
- Emerging issues
- Alternative futures; influencing & creating the “preferred future”: transparency, accountability, leadership, women’s empowerment, climate resilience, gov tech
- Idea to embed foresight in civil service coursework



Her Excellency Ohood Khalfan Al Roumi

MINISTER OF STATE FOR GOVERNMENT DEVELOPMENT AND THE FUTURE



[VIEW LINKEDIN PROFILE](#)

Her Excellency Ohood Khalfan Al Roumi is the Minister of State for Government Development and the Future in the United Arab Emirates. This ministerial portfolio was created in the UAE government for the purpose of advancing government development and for the preparation for the future planning of the government of the United Arab Emirates.

Her Excellency Ohood is also the Chairwoman of the Federal Authority for Government Human Recourses (FAHR), the federal entity responsible for the growth and development of UAE federal government human resources. Her Excellency is Vice Chair of World Government Summit Organization. She is also member of the Emirates Competitiveness Council, a board member of the 'Frontline Heroes Office', and member of the board of trustees of the Museum of the Future.



But foresight isn't having the impact it should.



Can The Future Be Taught?

تعليم استشراف المستقبل للأجيال القادمة



DUBAI FUTURE FOUNDATION THANKS YOU





Eduskunta.fi > EN > Committees > Committee for the Future

Grand Committee

Constitutional Law Committee

Foreign Affairs Committee

Finance Committee

Audit Committee

Administration Committee

Agriculture and Forestry Committee

Commerce Committee

Committee for the Future

Defence Committee

Education and Culture Committee

Employment and Equality Committee

Environment Committee

Legal Affairs Committee

Social Affairs and Health Committee

Transport and Communications Committee

Intelligence Oversight Committee



Committee for the Future

The Committee for the Future is an established, standing committee in the Parliament of Finland. The Committee consists of 17 Members of the Finnish Parliament. The Committee serves as a Think Tank for futures, science and technology policy in Finland. The counterpart cabinet member is the Prime Minister. The Committee was established in 1993.

Committee's mission is to generate dialogue with the government on major future problems and opportunities. At least once during its term of office, the Government issues a report (Government's Future Report) on long-term future prospects and the Government's targets which is submitted from the Prime Minister's Office to the Parliament. The main task of the Committee for the Future is then to prepare the Parliament's response (Parliament's Future Report) to the Government's Report on the Future. By this way Finnish Government and Parliament can recognize important political themes at such an early stage that different alternatives and policy lines are still

Chairperson



Joakim Strand

Swedish Parliamentary Group

Vice Chairperson



Pirkka-Pekka Petelius

Green Parliamentary Group

Members

Marko Asell

Social Democratic Parliamentary Group

Harry Harkimo

Like Nyl-Movement's Parliamentary Group

Marl Holopainen

Green Parliamentary Group

Katja Hänninen

Left Alliance Parliamentary Group

Ville Kaunisto

Parliamentary Group of the National Coalition Party

Road to the Summit of the Future



2015

*2030
Agenda*



2020

*UN75
Declaration*



2021

*Our
Common
Agenda*



2023

*SDG
Summit*



2022-2024

*Summit of
the Future*



2024

*Pact for the
Future*



**UN
GLOBAL
PULSE**

INNOVATING TOGETHER FOR OUR COMMON FUTURE

UN Global Pulse is the Secretary-General's Innovation Lab — a hub for experimentation to support and advance the UN Charter.

WHAT WE DO

UN Global Pulse brings together governments, UN entities and partners from academia and the private sector to design, co-create and scale innovations. Strategic partnerships at global, regional and country level are crucial to collaborative innovation at UN Global Pulse.

Imagine

Think outside the box on challenges and strengthen the UN's ability to apply strategic foresight in its programming.

Build

Collaborate to find solutions that contribute to sustainable development goals as well as other emerging needs, such as crisis prevention and response.

Mobilise

Function as a go-to convener for coalitions, bringing the public and private sectors together to catalyze and scale innovation.

Scenarios

Contrasting visions of future conditions for a defined concern / domain, arising from the interaction of a range of variables which are significantly uncertain and beyond our control.

Scenarios are fleshed out by describing each future state, with a narrative of how we got there from today, and the lived experience of stakeholders in these futures.

Scenarios seek to “win hearts and minds” to the plausibility of differing futures, to compel us to review our worldviews and “future-proof” our forward strategies & plans.

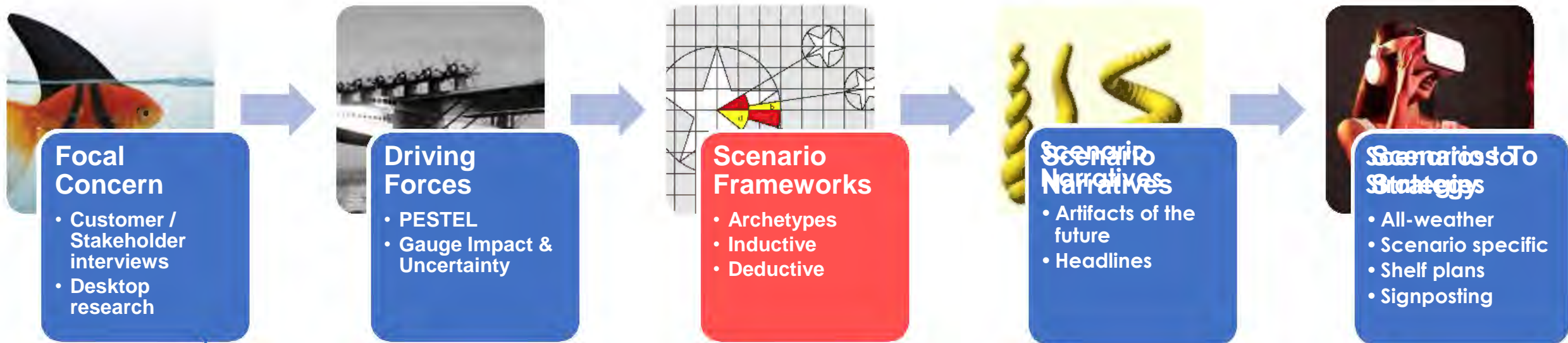


Why scenarios?

1. Address evident uncertainty or times of comfortable apparent certainty
2. Break out of dominant stale/comfortable theory of the future & question decisionmakers' inner model of reality
3. Deliberately go beyond remit, expertise & sphere of influence of an organisation to look outside-in
4. Sensitise stakeholders to different ways in which the longer-term (typically 10-20 years) mission environment may change
5. Foster cross-cutting dialogue, alignment, & team-building; seed a common lingo.
6. Deliberately infuse specific “ingredients” of relevance & interest into scenario “dishes”.
7. “Windtunnel” current plans/strategies, appreciate challenges/opportunities our objectives will face, support (re)-missioning & -visioning
8. Stretch your speculative and normative thinking; talent development & assessment.
9. Allow for structured conversations about uncertainty, complementing conventional forms of analysis
10. Leverage power of narrative: leaders impart stories people can tell themselves – always believed.



The Scenario Method: An Overview



“How trusted and effective will my NMHS be in 2043?”

“In 2043, how will people know what weather is coming?”

Driving Forces are, on a spectrum...



The diagram features a vertical double-headed arrow on the left side, with the top half pointing up and the bottom half pointing down. In the center, there are two horizontal bars. The top bar is grey and contains the text 'Predetermined Elements' and a shield icon with a checkmark. The bottom bar is red and contains the text 'Critical Uncertainties' and a question mark icon. A smaller vertical double-headed arrow is positioned to the right of the grey bar, also pointing up and down.

Predetermined Elements

- Narrow range of possible trajectories

Critical Uncertainties

- Wide range of possible trajectories



“Changing Global Geopolitical Order”:
Level of Impact on our Focal Concern

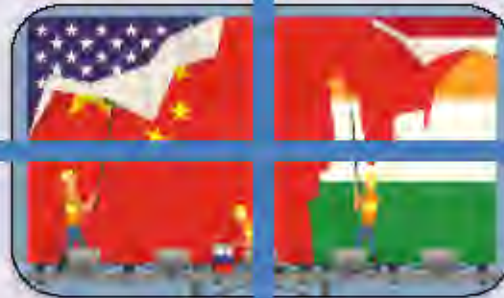
HIGH

Level of Uncertainty as
to the outcome
over the
scenario period.

HIGH

LOW

LOW



Three Methods for Scenario Frameworks



Inductive

- Intra-scenario logic first
- Messy, creative



Deductive

- Inter-scenario logic first
- Clean, less rich







Archetypes

- Inter-scenario logic first
- Intuitive, quite safe

Continuation (the initial phase of slow or fast exponential growth)
Limits and Discipline (the saturation phase of S-curve growth)
Decline and Collapse (the decline and recycling phase of life cycle growth)
Transformation (superexponential growth)

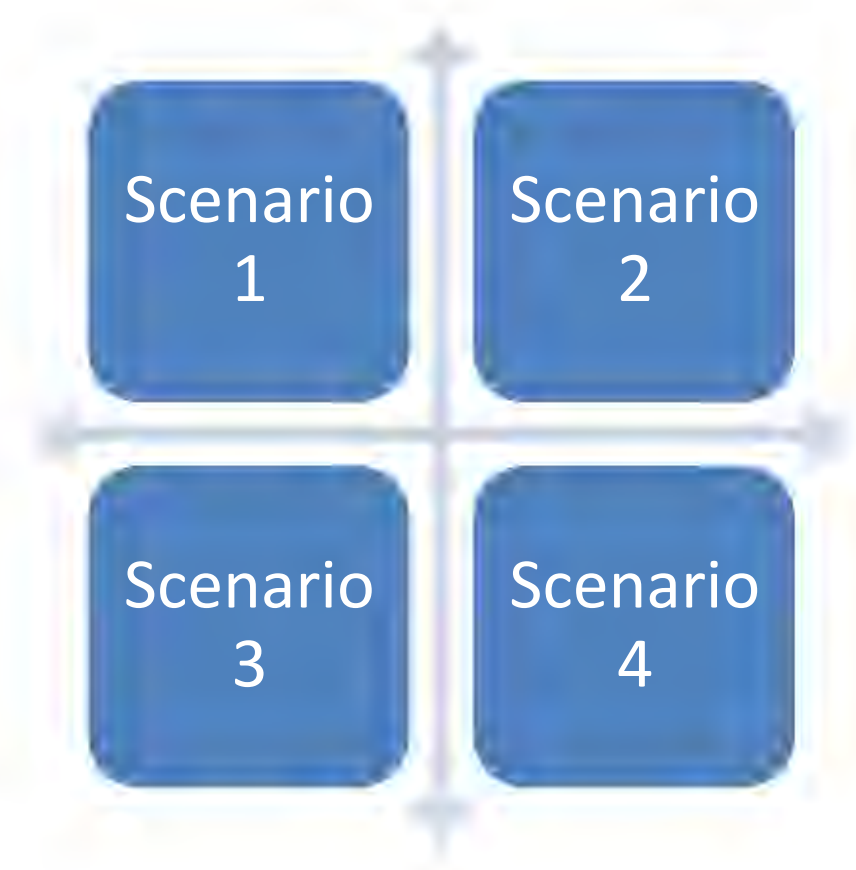


Inductive Example: Future of national political culture in a simulated country

Driving Forces	Branching Point A	Branching Point B	Branching Point C	Branching Point D
DF 1: Direction of locust swarms				
DF 2: Do the monsoons arrive?	Yes	Epic storms	No	Partial
DF 3: Economic Growth	7%	2%	-3%	-10%
DF 4: Credit rating on global markets	A	B	C	D
DF 5: Who wins the elections	Green Party	Military Coup!	Red-Led Coalition	Red Party
DF 6: International Aid	\$5 bil	\$0 bil	\$10 bil	\$1 bil

Deductive Scenarios

1. Rank DFs in order of Impact & Uncertainty
2. Choose contrasting DFs of the greatest Impact and Uncertainty & matrix them
3. Construct scenarios based on this overarching logic, detailing how other key DFs feature based on sense of most logical fit & to accentuate different insights



Handwritten mathematical notes on a chalkboard, including:

- Equations: $D(x) = 2 + 3 + 4 \cdot 31447$, $\sqrt{a^2 + b^2} = x^2 \cdot x$, $xy = 2$, $cx - cy = 25^2$, $2\pi = c$, $x^2 + 34x + \dots$, $\sum_{k=2}^{14} N_{30} \cdot x$, $\frac{1}{2} [984 + xg]$, $\beta = 9 + \dots$
- Diagrams: A rectangular diagram with shaded regions and arrows, a graph of a downward-opening parabola, and a bell-shaped curve labeled 'A'.
- Other markings: A circle containing a shaded triangle, a box containing binary code (010112, 010002, 200010, 011002), and various numbers like 352, 22, 5, 9, 14, 30, 549.

SCENARIO EXAMPLES

**“After” Ukraine:
Charting New
Global Futures**



“After” Ukraine

I. Colour Jujitsu

II. House Cleaning, Wall Repair

III. Backwards to the Future

IV. Hammer & Shield

V. Wormwood

<https://www.linkedin.com/pulse/after-ukraine-thumbnail-scenarios-new-geopolitics-from-luke-tay/>



It's 2030...

World

Confrontation:

Bifurcated, Militarized, Bloc Autarchy, Climate-Ravaged, Suffering, Infowars, Combatbots. AI surveillance states.

Greentocracy:

Degrowth paradigm, Strong UN, Big nanny surveillance states, UBEverything, Edited, Rewilding

Singularity:

5IR breakthroughs. Sustainable development. Abundant living. Postnational. Multiverse & Space.

SG

Spicy:

SG smart nation; Prosperity, Inequality & Socioeconomic Tensions. SG hub, ambivalent region. Oligarchs, robots, underclass. Technocratic interventions.

Grounded:

Growth slows. Neighbourhood economies. Waste-not, want-not social innovation. Culture/Identity ferment.

Rigmarole:

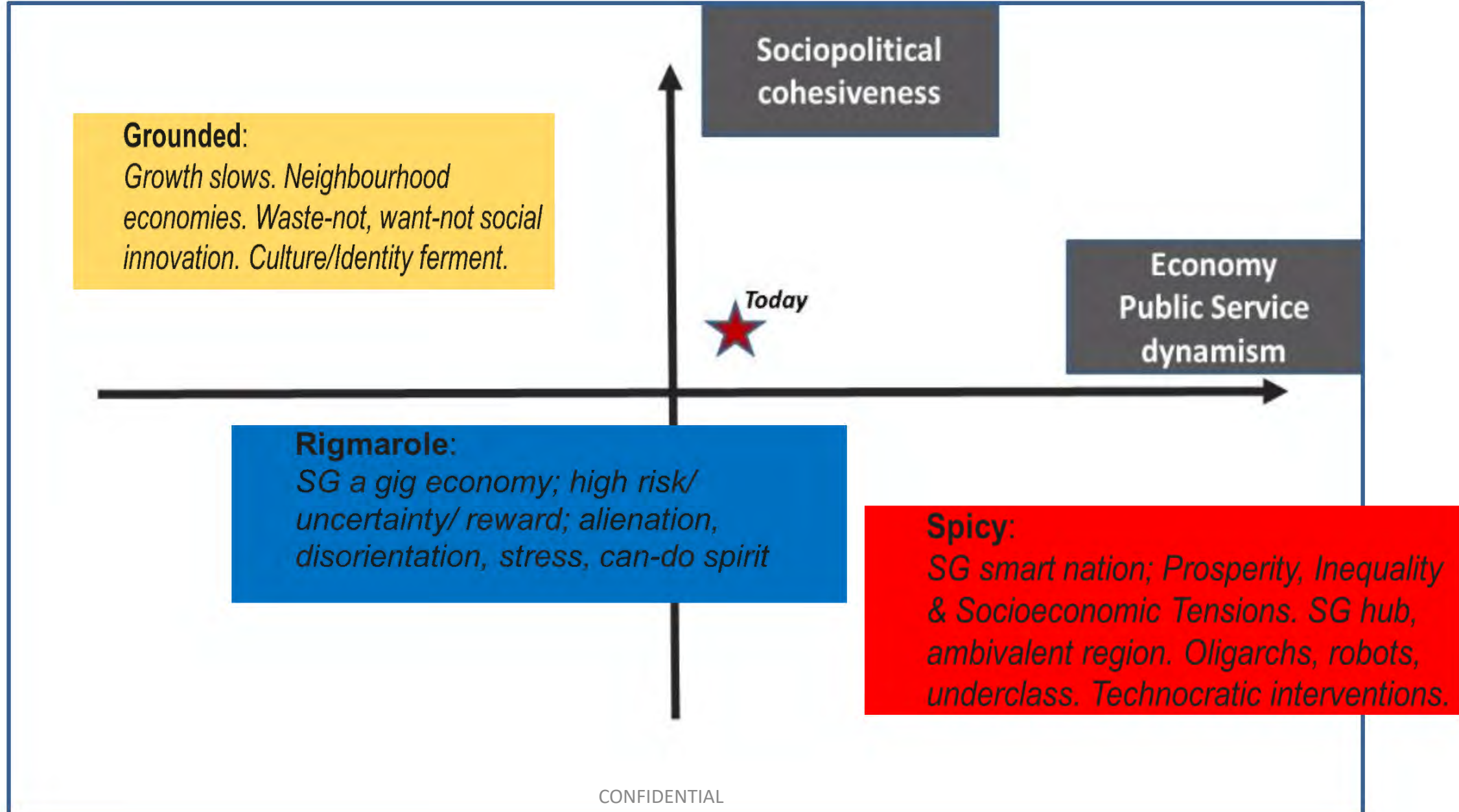
SG a gig economy; high risk/uncertainty/reward; alienation, disorientation, stress, can-do spirit

X



Note: Adapted in part from a range of other scenarios.

SG Futures – Summary



SG Futures – Implications for Food Governance

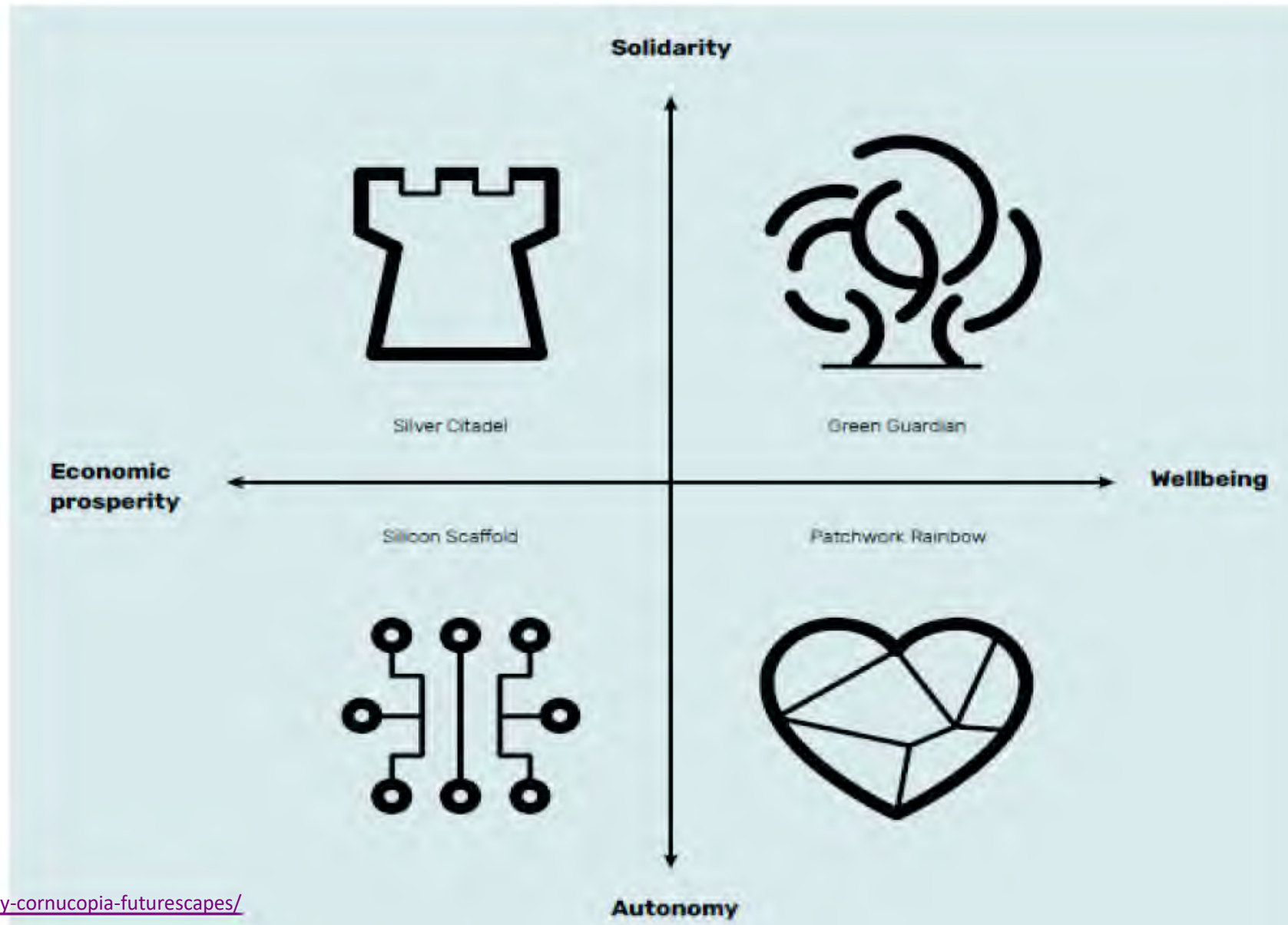
	Spicy	Grounded	Rigmarole
Food sector	Should Exploit ←————→ Must Hedge Govt challenged to keep up/ahead of industry Govt help needed.. but do-able?		Great Churn Rise of Gigs <i>(also in Fire/Earth)</i>
People & Food	Demographics: Changing food attitudes/lifestyles. Many “left behind” needing help & hope. <ul style="list-style-type: none"> • New Foods: potential for tech-enabled nutritional enhancement • Tech-enabled community/home farming & <i>locavore</i> culture (hedge, gig & social glue) 		
	New Foods frenzy. (functional, experiential) Grub on the go.	Community farms & food systems.	Random new food. Grub on the go.
People & Animals	Changing presence/care of animals can shape people’s lived experience		
	Pet sector bonanza Pets as social flashpoint GM & robot pets	More “community animals” OneHealth challenges Pet sector impacted	Pet cafes soothe the alienated Pet gig sector rises
Corporate	Food Authority faces \$\$ & workforce pressures Ambivalence towards the Public Service		
	Challenge to attract/develop staff	Need to prioritise, divest, empower stakeholders	Our regulation & structure: gear for churn + Gig

Case Study: EU IMAJINE Scenarios

"We will not know our own injustice if we cannot imagine justice.

We will not be free if we do not imagine freedom."

Ursula K. Le Guin



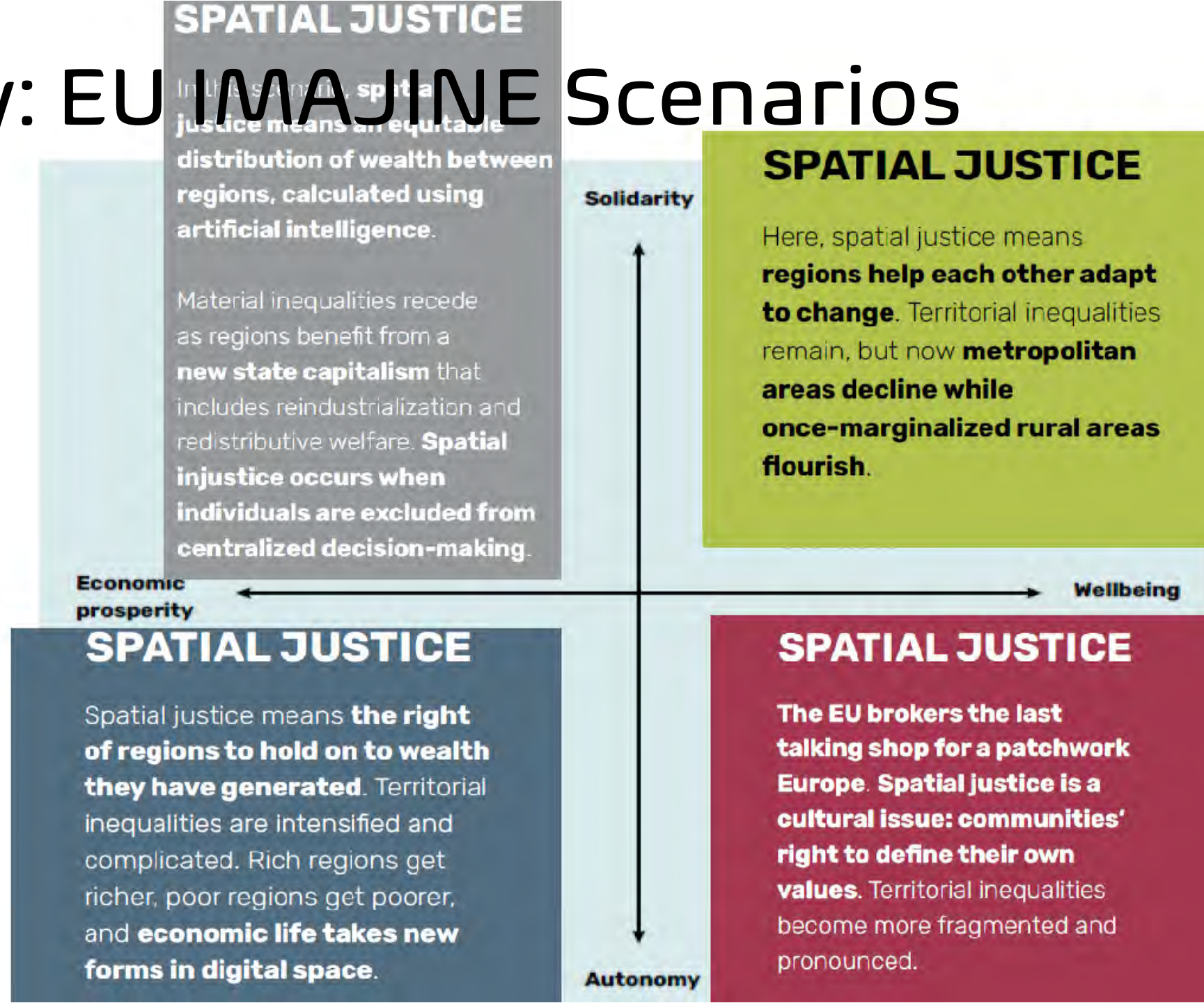
<http://imajine-project.eu/2021/10/12/the-imajine-scenarios/>

<https://imajine-project.eu/2022/04/13/imajine-scenario-response-luke-tay-cornucopia-futurescapes/>

Case Study: EU IMAGINE Scenarios

**“We will not know our own injustice if we cannot imagine justice.
We will not be free if we do not imagine freedom.”**

Ursula K. Le Guin









- Europe's values & food production base moved greenwards together
- Reinforced by intrusive "nanny state" surveillance and social credit regimes, imposing an eco-frugality made popular after climate disasters
- A rising climate justice movement saw a parade of CEOs of European food giants and their political allies tried in court for environmental crimes.
- Food system a transformed space: continental networks of cooperatives across diverse bioregions, community farmers, and green agriculture solution-providers.



- Due to the ravages of animal disease, and the practical and affective move towards far greener plates, the European diet of 2048 would be **chiefly plant-based**.
- A key exception would be in **fisheries and mariculture**: with the intrusion of the sea, advances in adaptive coastal engineering, and Europe's increased dominion over the Mediterranean.
- It is a Europe that **eats to live**, and to give mother nature a new lease of life. But at the same time, it is **a food system at peace with the use of technology** – a profusion of **gene edited** varieties enrich a garden Europe's stands of permaculture, agroforestry, and otherwise "organic" production. World-class SynBio fermenteries churn out a cornucopia of meat analogues and **nutraceuticals**.

"Moveable Feast" Scenarios for future urban food production




		Local Production Viability (<i>Tech, Social, Biz, Policy</i>)	
		<i>High</i>	<i>Low</i>
Global supply volatility (<i>Geopol, Env, Workforce</i>)	<i>High</i>	<p>Gated Greenhouses.</p> 	<p>Food empires. New Cold War In My Fridge.</p> 
	<i>Low</i>	<p>Diverse Degustation</p> 	<p>Big Supply Grid. Small world.</p> 

Future of Southeast Asian Food Security: Key Uncertainties

- 1. Climate Effects** on agrifood value chain
 - Global, regional distribution of effects
 - Mitigated by effectiveness of adaptation initiatives
- 2. AgriFoodTech adoption** for new foods/modes & commercial farming “vs” Regenerative / AgroForestry / traditional subsistence approach
 - Dominant new paradigm / traditional dominant / parallel growth / synthesis
 - Processing/Manufacturing, Supply Chain, Foodservice
- 3. Political-Economic Space** for AgriFood flows, cooperation & development (based on regional / international dynamics), economic prosperity, relative emphasis on local production
 - Reglobalisation?
 - Divided Asia?
 - Fragmented Asia?
 - Asian regionalism & food bloc?
- 4. Social engagement** with Govt/Corporate food production & security efforts – engaged, hostile, disengaged, pro food sovereignty (i.e. community sufficiency)
- 5. Multilateral / WOG focus & approach** on food policy – neglect, interventionism / command, holistic link to wider WOG policy e.g. on health / productivity / education / development, etc.
- 6. Food Industry market structure**
- 7. Cost of agri-inputs**
- 8. OneHealth / AH / PH situation**
- 9. Smallholder dynamism**
- 10. Startup ecosystem dynamism**
- 11. Food “fake news”**
- 12. Rise of food philanthropy & ESG investments**
- 13. Robustness of ESG market-based frameworks**
- 14. International Organisation support**
- 15. Vibrancy of culinary arts & culture**

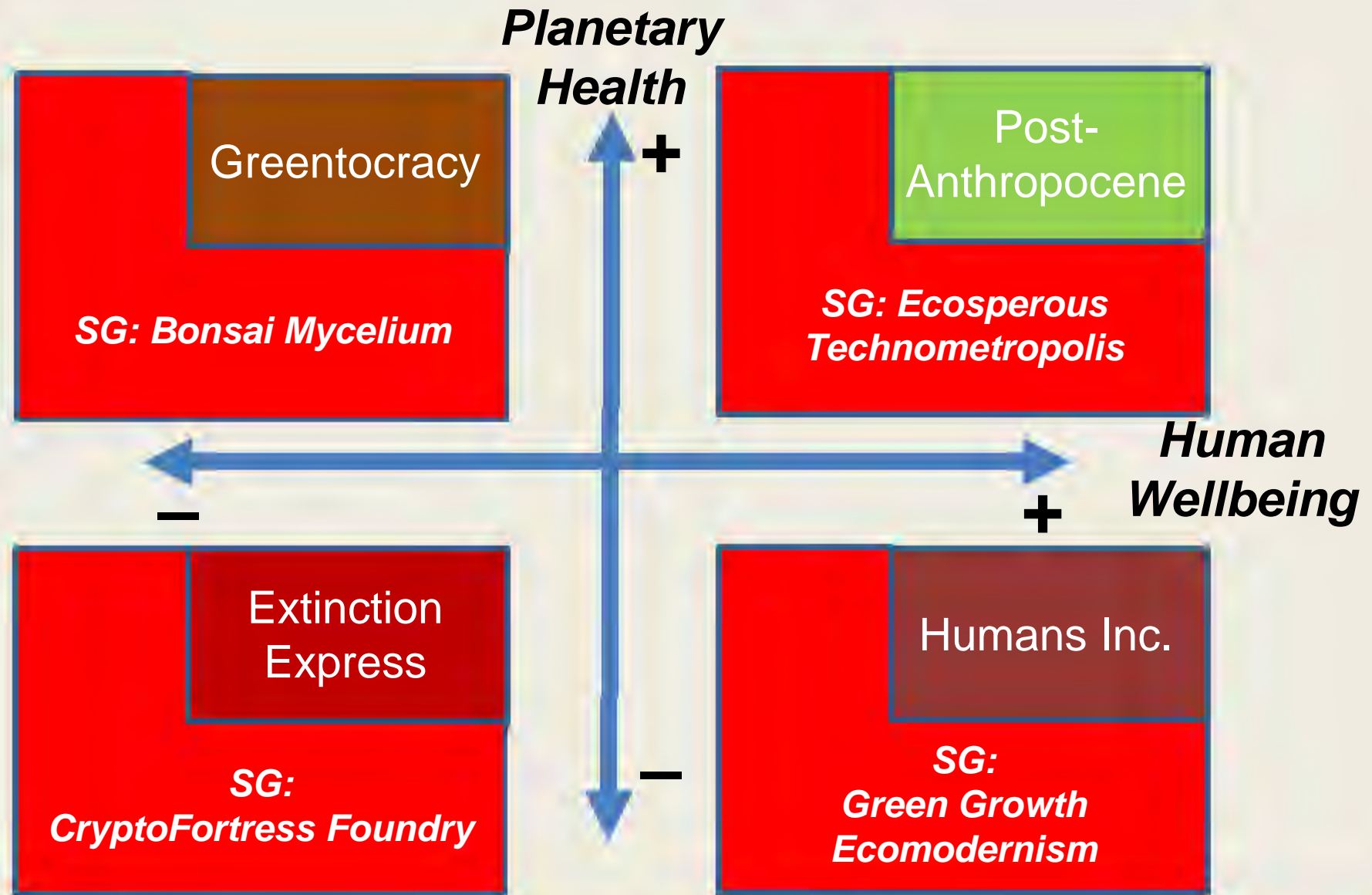


<u>DF</u>	<u>Branch I</u>	<u>Branch II</u>	<u>Branch III</u>	<u>Branch IV</u>
Climate Effects	Severe	Uneven	Mild	--
Agtech Adoption	New Dominant	Traditional Dominant	Parallel	Synthesis
Pol-Econ Space	Reglobalisation	Divided SEA	Fragmented SEA	SEA Bloc
Social Engagement	Hostile	Engaged	Disengaged	Food Sovereignty
Multilat / WOG focus & approach	Neglect	Command	Holistic	--

 Scenario A: Carbon Sync	 Scenario B: Fortress Food Factory	 Scenario C: Distant Plates
<ul style="list-style-type: none"> • Significant but uneven climate effects spur international cooperation and regional food trade and “green growth” investment • Increased global trade, cooperation & policy coordination, with an ESG focus integrating social, personal & eco health • Agrifoodtech development flourishes and diffuses across the value chain • Social licence & buy-in to augmented food system, seeing benefits of approach 	<ul style="list-style-type: none"> • Hostile geopolitical & planetary climate • ASEAN bands together to ensure all-round security, including for food • Mobilisation / nationalisation of food economy, leveraging tech at scale for adequate environmentally insulated food production • Smart rationing implemented to optimise limited nutrient budget; social strife over policy basis of allocation & rejection of new foods 	<ul style="list-style-type: none"> • Abundant renewable energy scales, easing international tensions including given less energy import dependency • Climate effects are surprisingly mild • Relative neglect of food security • SEA is fragmented based on localised rivalries and ill-will • Agtech advances, but many reject it and stressful urban life in general, embrace agroforestry as a lifestyle & sustenance; circular community value chains



What it could look like for SG, Overlaid on Arup 2050 Scenarios





**COMMUNICATING
SCENARIOS**



SG: Ecosperous Technometropolis

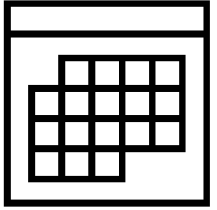


SG: Bonsai Mycelium

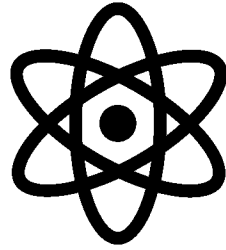


SG: CryptoFortress Foundry





Timeline

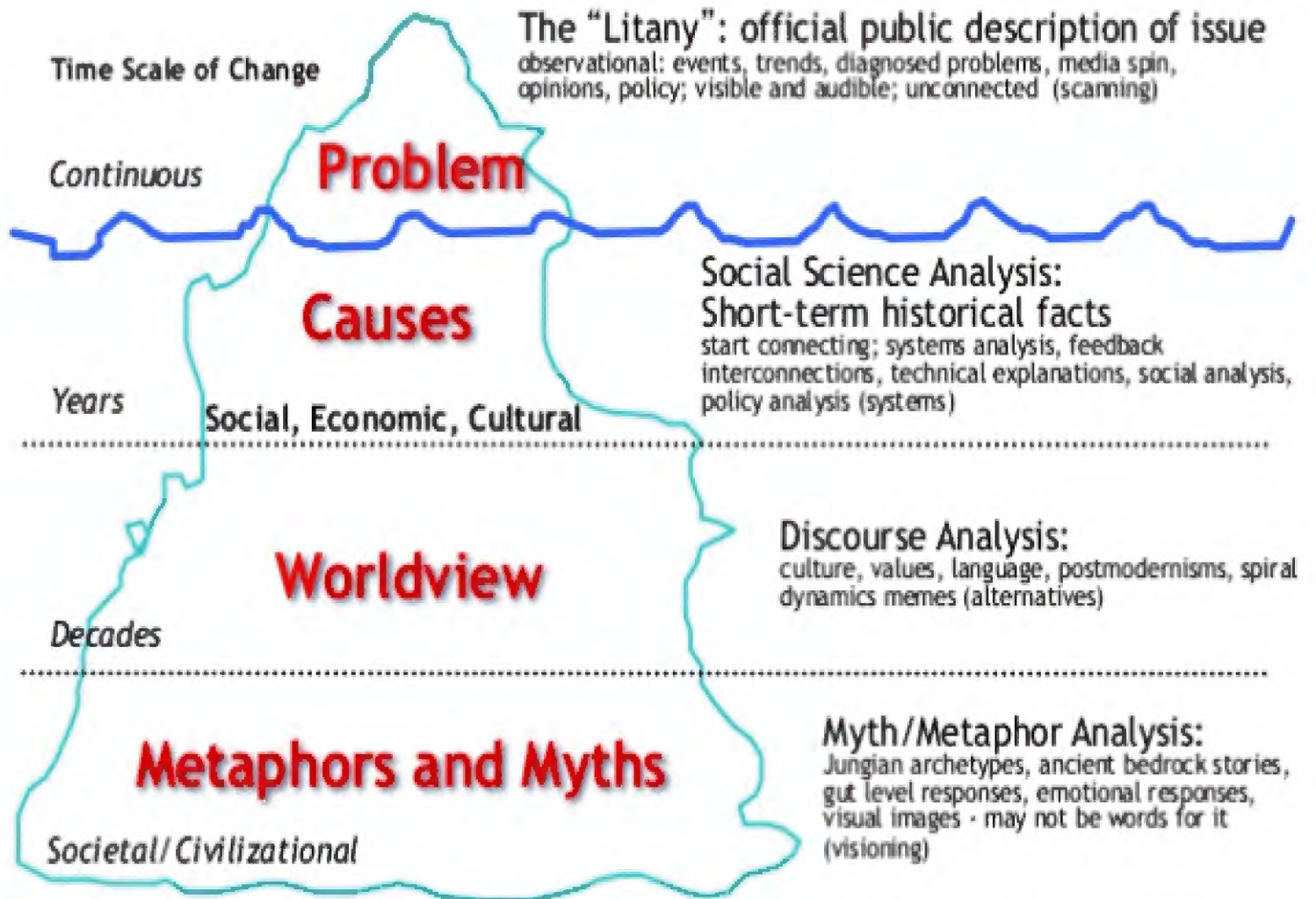


Artefact



Character

Causal Layered Analysis – The Deep Basis for Enacting Systemic Change



Sources: R. Slaughter, "Integral Operating System" World Future Society, July 2003, drawing on Sohail Inayatullah; Dennis List, "3 Maps of the Future," July 18, 2003; Andy Hines, UH-Clear Lake, 2006.

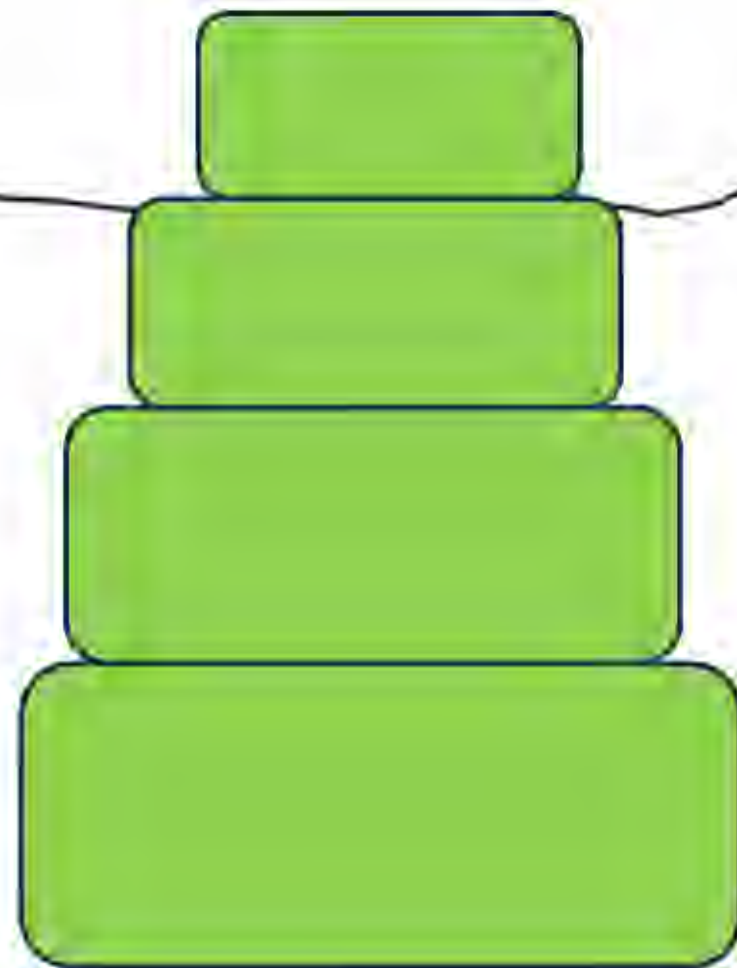
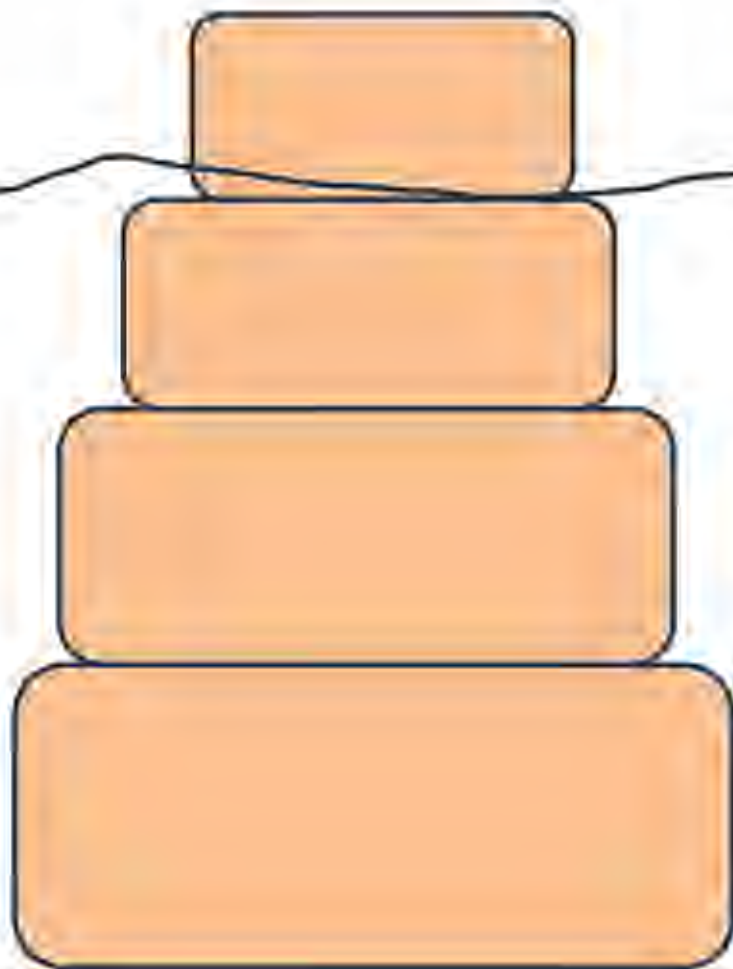
2022 – Global Food Insecurity at Worst Levels in this Century

PESTEL Analysis / Driving Forces

*Living Beyond Planetary Limits
Intergenerational Injustice
A Just Transition*

**Broken
Bowls**

My NMHS



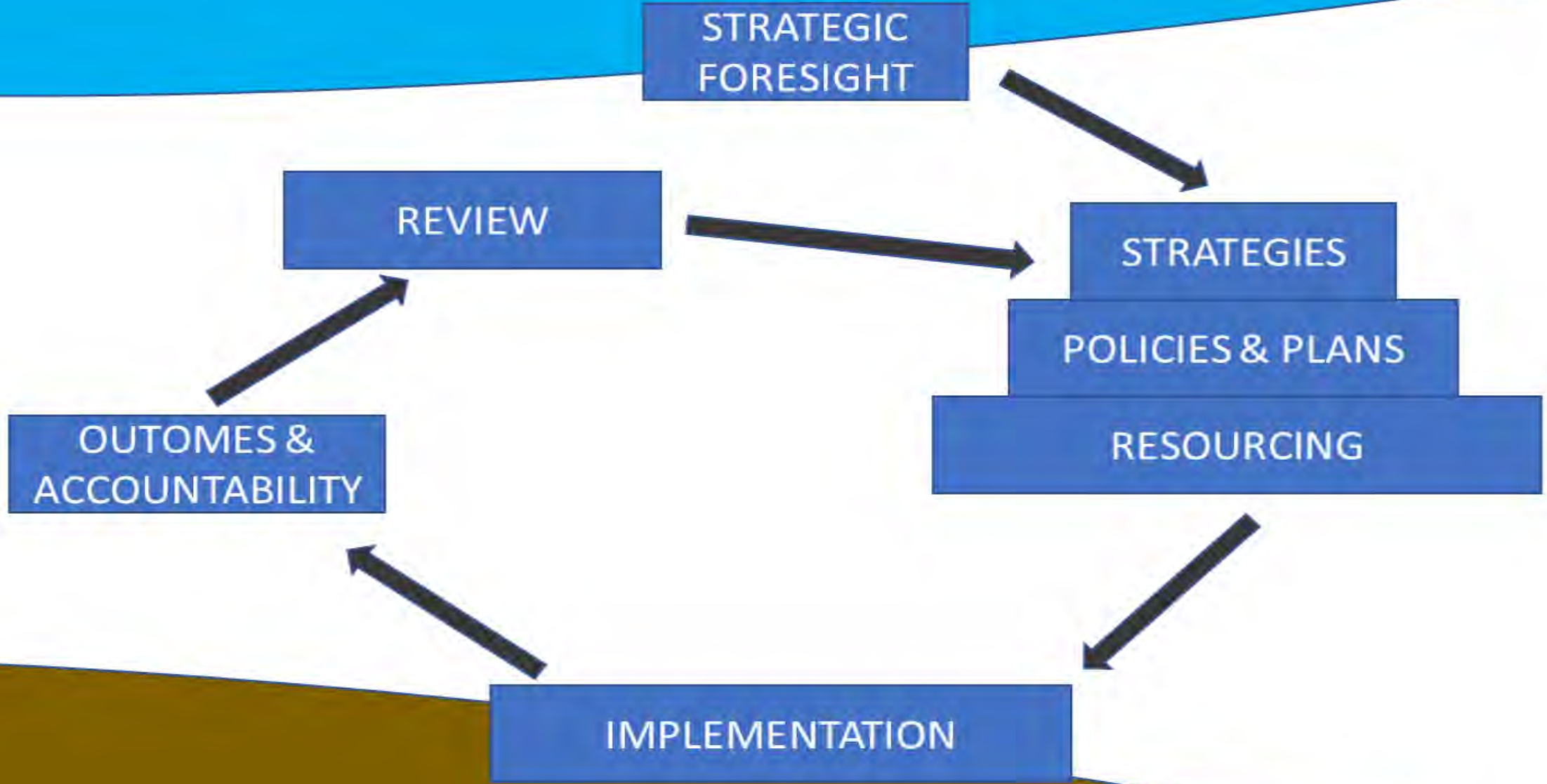
Scenarios to Strategies: Uses of Scenarios

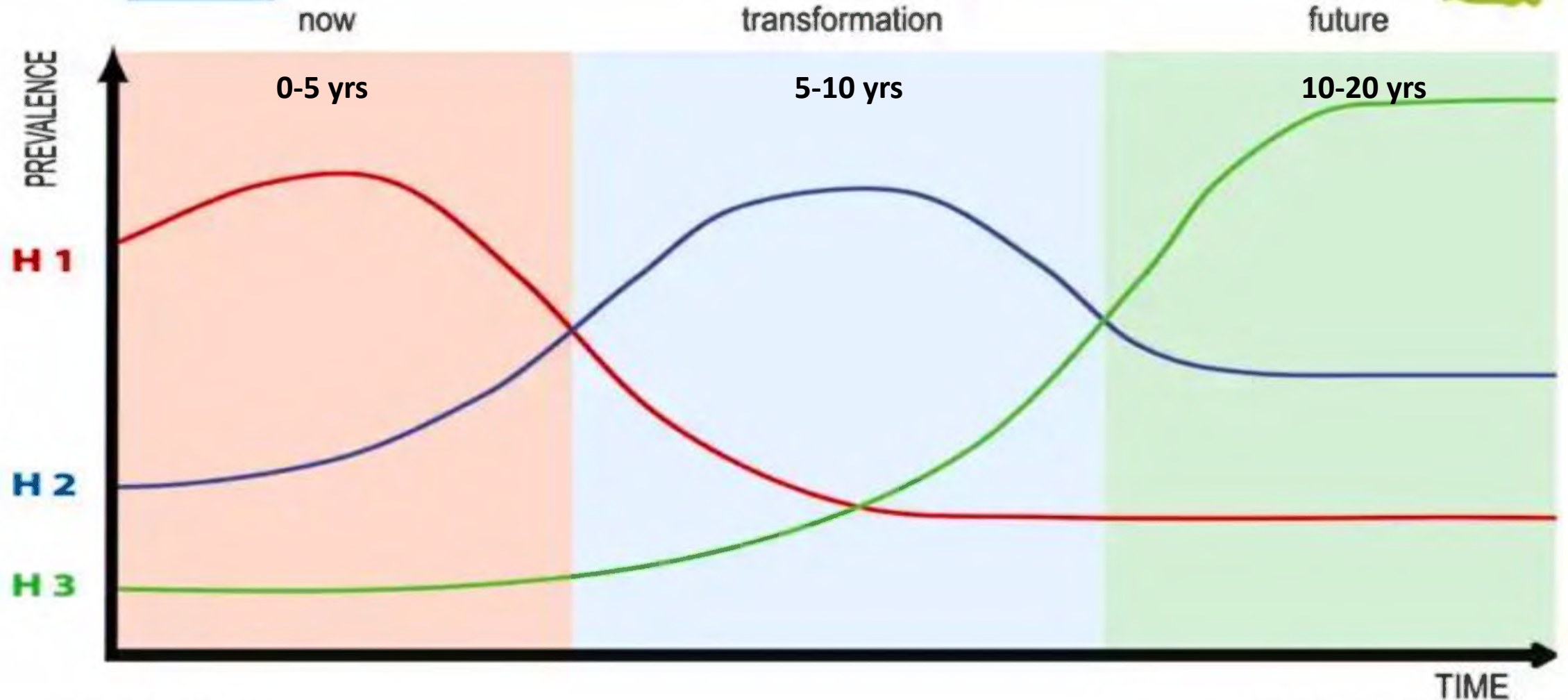
- How will current/intended strategies perform across range of plausible futures?
 - *Implications; future SWOT*
 - *Rethinks, strategic alternatives: interventions, contingency plans, prioritisation/acceleration, etc.*
 - CAPDEV / knowledge / leadership / culture / resource mobilisation issues

Initiatives aligned with Strategies

- Strategy (systematic approach to achieve defined objectives)
 - Initiatives:
 - Legislation/regulation (& getting powers)
 - New operational/regulatory capabilities (manpower, expertise, labs, equipment, etc.)
 - New projects (infrastructure, PPP, digital, etc.)
 - New collaborations with Private Sector, People Sector, bilateral / regional / international parties, etc.
 - Resource mobilisation

Foresight in Governance Planning Cycle





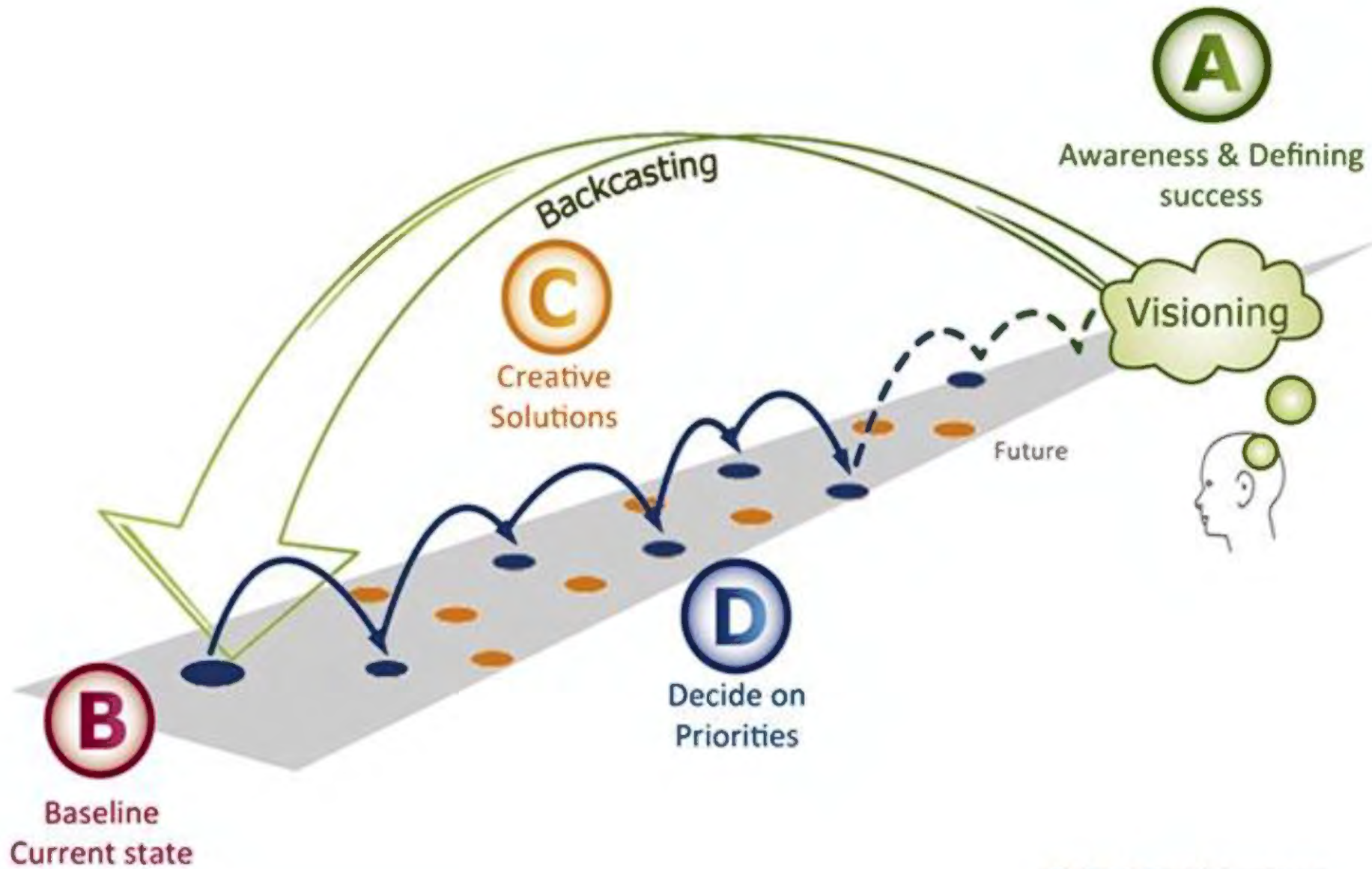
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www.internationalfuturesforum.com

- **What to keep / discard?**
- **Foresee emerging “snakes & ladders”**
- **Weigh “weak signals” of future paradigm shifts**

- **Change management / “just transition”**
- **Address snakes & ladders**
- **Validate/refresh read on signals**
- **First-mover shaping & exploitation of change**

- **~~Overhang/baggage/ legacy ballast of the past, transposed~~**
- **Systematisation of transformation**
- **New dominant paradigm**
- **Continue to scan & transform**



<https://energyfutureslab.com/backcasting-starting-with-the-end-in-mind/>

10 things we need to know about the future/s

1.

The future cannot be fully predicted - most things we think we know about the future tends to be extrapolation of current trends, which is based on past data – so we should not just be looking at the rear-mirror when driving forward.

2.

The future should be “pluralized” – there is not one, but multiple alternative futures – so, in the broader scope of all possible futures, some are more probable or plausible, some are less so. Normative (preferable) futures are those that stakeholders aspire to create.

3.

There are no facts or evidence from the future (we create the future as we experience it) – we should be thinking about futures in terms of different (often conflicting) personal and group perspectives, frames of references, and “images”.

4.

Very often, useful ideas and “images” of the future tend to seem ridiculous in the present exactly because they were “not expected” – therefore, foresight should challenge existing beliefs, values, mindsets, and behaviour to avoid being trapped in “business as usual”.

5.

Technology is not the future – how we use existing (and develop new) technologies will determine their future implications.

6.

The future belongs to the curious – those who see beyond existing systems and thinking patterns.

7.

The future is a process, not a destination – you cannot “reach” the future or “arrive” there: there will always be another ten years into the future.

8.

Historically, most trends died out relatively quickly, while most important events that did reshape the future started as barely noticeable, “weak signals” of change. So don’t believe the hype.

9.

For every future that will happen there are hundreds of expected futures that will not happen – so we always need plan B (and C and D, etc.).

10.

The worst thing is to live someone else’s past thinking it is your future.

https://www.undp.org/sites/g/files/zskgke326/files/publications/UNDP_ForesightManual_2018.pdf

Recap

- The context: Polycrisis and Complexity
 - *Emerging issues, challenges and opportunities for NMHSs*
- Futures thinking: navigating the futureS through strategic foresight
 - *Fundamental methods*
 - *Scenarios*
- Takeaways – applying foresight for future readiness:
 - *anticipatory governance; organisational strategy + excellence*
 - *personal futures*



Benefits of Foresight

1. Promotes Innovation
2. Enhances Agility
3. Test Critical Assumptions
4. Enhance Resilience
5. Improve Competitiveness
6. Boost Employee Satisfaction
7. Promote Learning
8. Facilitate Public Participation
9. Improves Planning & Strategizing
10. Empowers People & Organisations

Impediments to Foresight



1. Focus locked on the present
2. Futures illiteracy / ignorance
3. Ideas seem fanciful
4. Seems like a guessing game
5. Multiple futures complicate planning
6. Time, cost, labour & bandwidth
7. Used to alternative legacy methods
8. Conservatism / aversion to change
9. Fear of troubling/controversial futures
10. Threaten interests, trigger unpalatable decisions/actions



Personal Futures





Diagrammed, this approach would appear as:

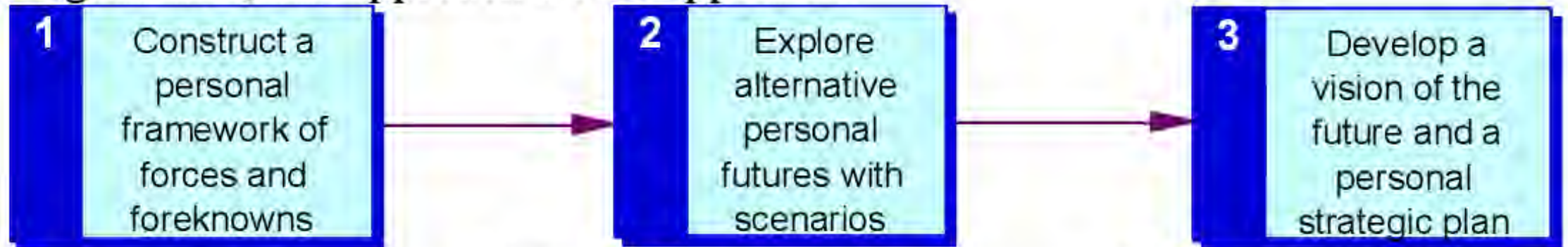


Figure 2.1 A simple model for the development of personal futures

Discussion: Cohort Reflections

Reflecting on the session, what are some key learnings and reflections which are relevant to



our NMHS' wider work & concerns



my individual growth as a leader & professional



Foresight Priorities + Inspiring new scenario, policy & project ideas

Additional takeaways from concluding discussion:

- *Scan the horizon*
- *Exploit the many uses of scenarios*
- *Flex collaborations, and reach out to stakeholders*
- *For “return on investment”, foresight must be translated into future-ready strategy*
- *Foresight sparks and guides impactful innovation in policies, plans, processes, and technologies*
- *The best way to predict the future is to understand the changes and forces beyond our control, and to position ourselves to shape outcomes that we can influence*

THANK YOU!

See you "Tomorrow"

