Foresight

Scenario 1: Crocodile lunch

Scenario 2: Lucky escape

Scenario 3: Smooth ride

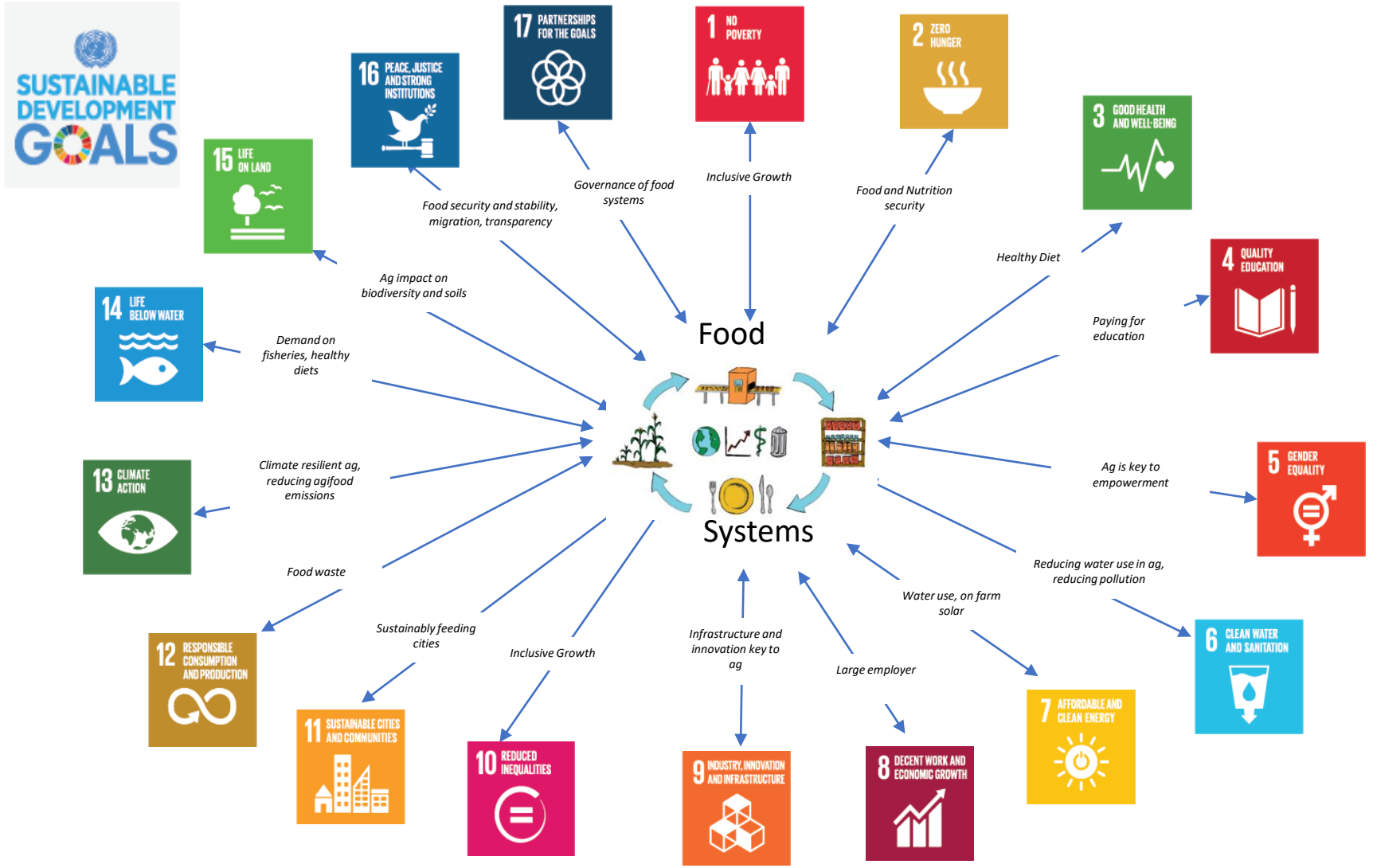
Scenario 4: unseen dead end

Basic Definitions of Foresight and Scenarios

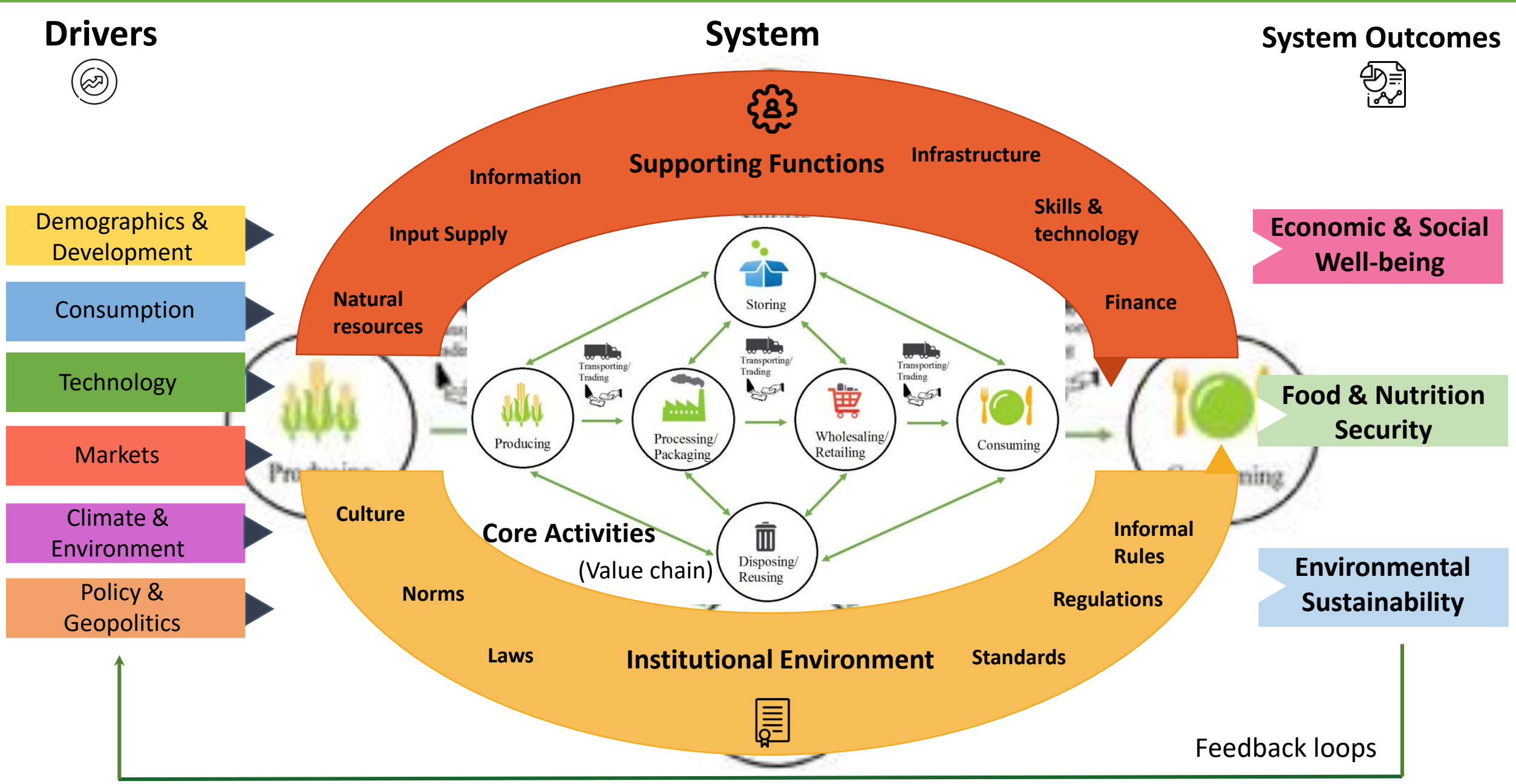
Foresight: the ability to judge correctly what is going to happen in the future and plan your actions based on this knowledge
(Cambridge dictionary)

Scenarios: "Thinking through [scenario] stories, and talking in depth about their implications, brings each person's unspoken assumptions about the future to the surface. Scenarios are thus the most powerful vehicles I know for challenging our 'mental models' about the world and lifting the 'blinders' that limit our creativity and resourcefulness."
Peter Schwartz, The Art of the Long View: Planning for the Future in an Uncertain World

AgriFood Systems are core to the SDGs

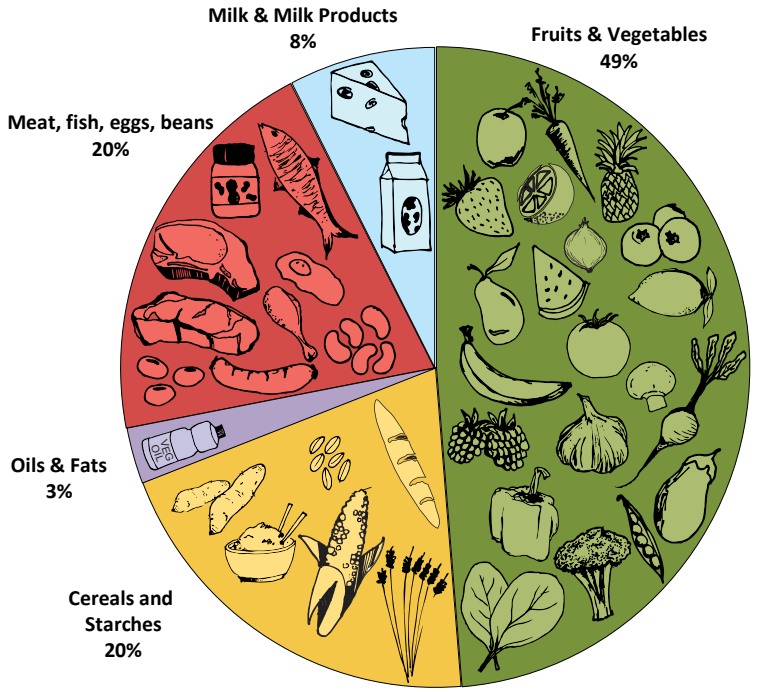


AgriFood Systems – what do we mean?

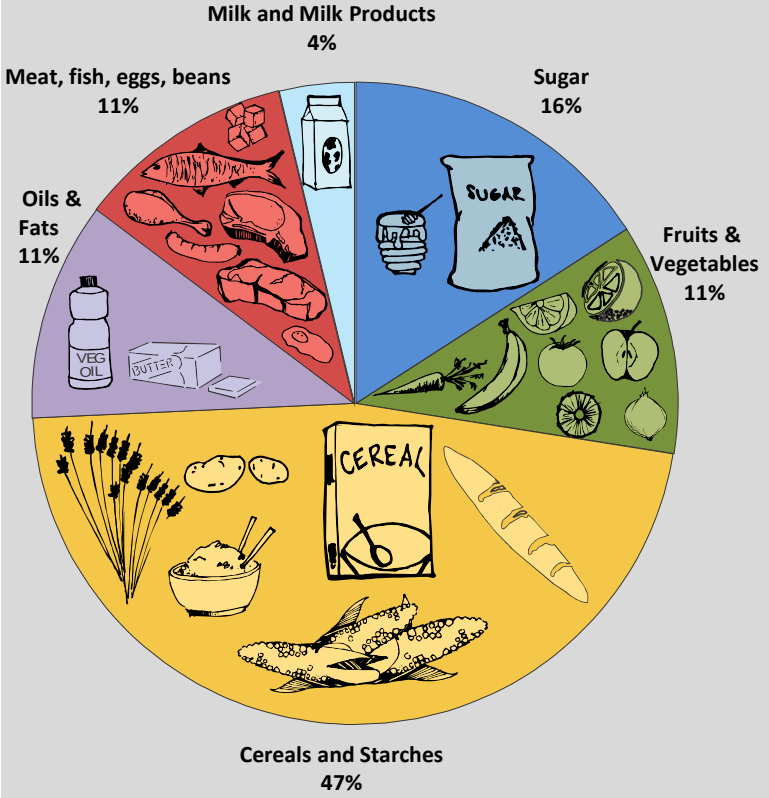


Looking ahead – what are we eating

What we should be eating
(Harvard's Healthy Eating Plate Model)

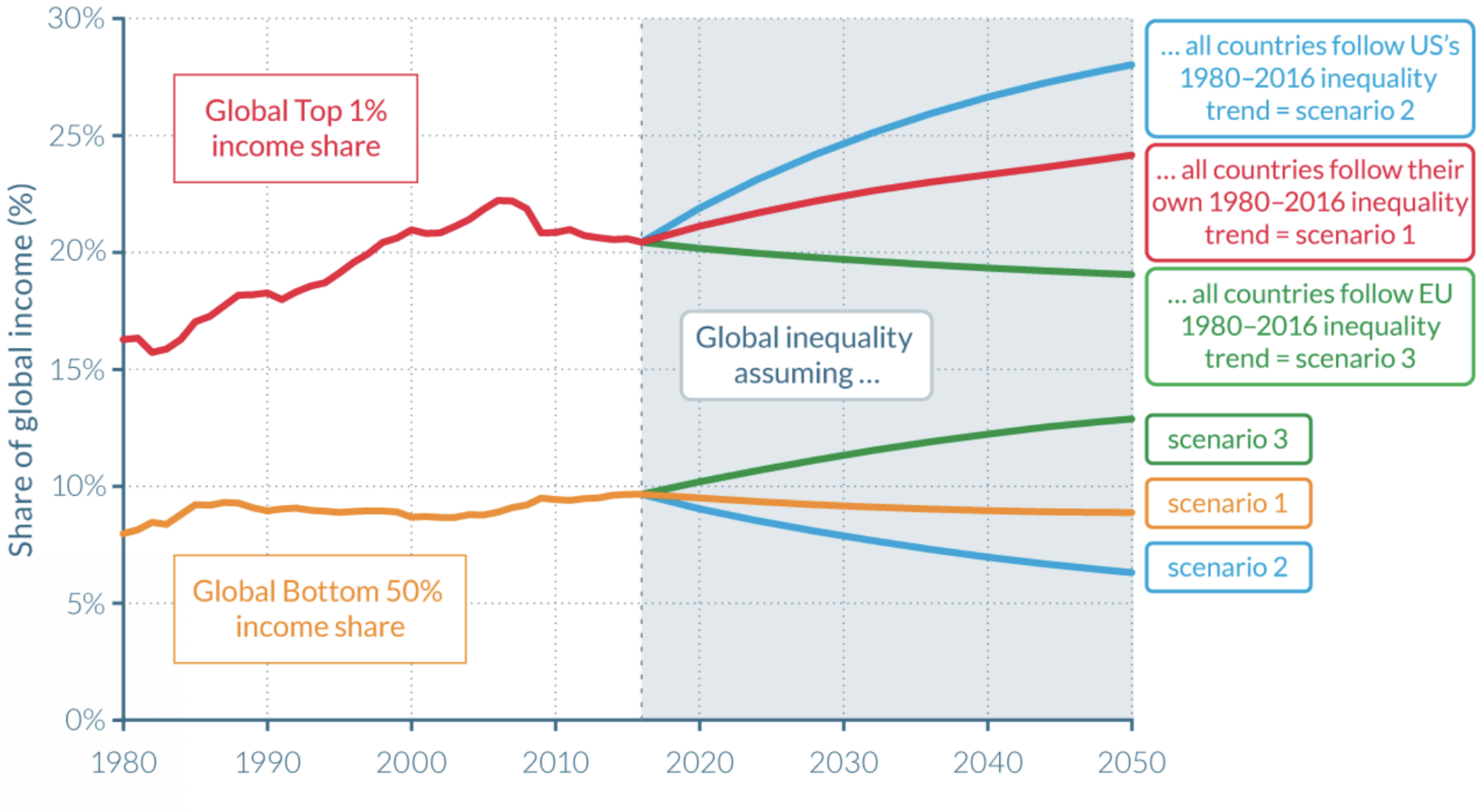


What we are actually producing
(According to 2011 FAO)



Evan Fraser, Guelph, FBS analysis, 2015

Looking ahead – inequality and poverty

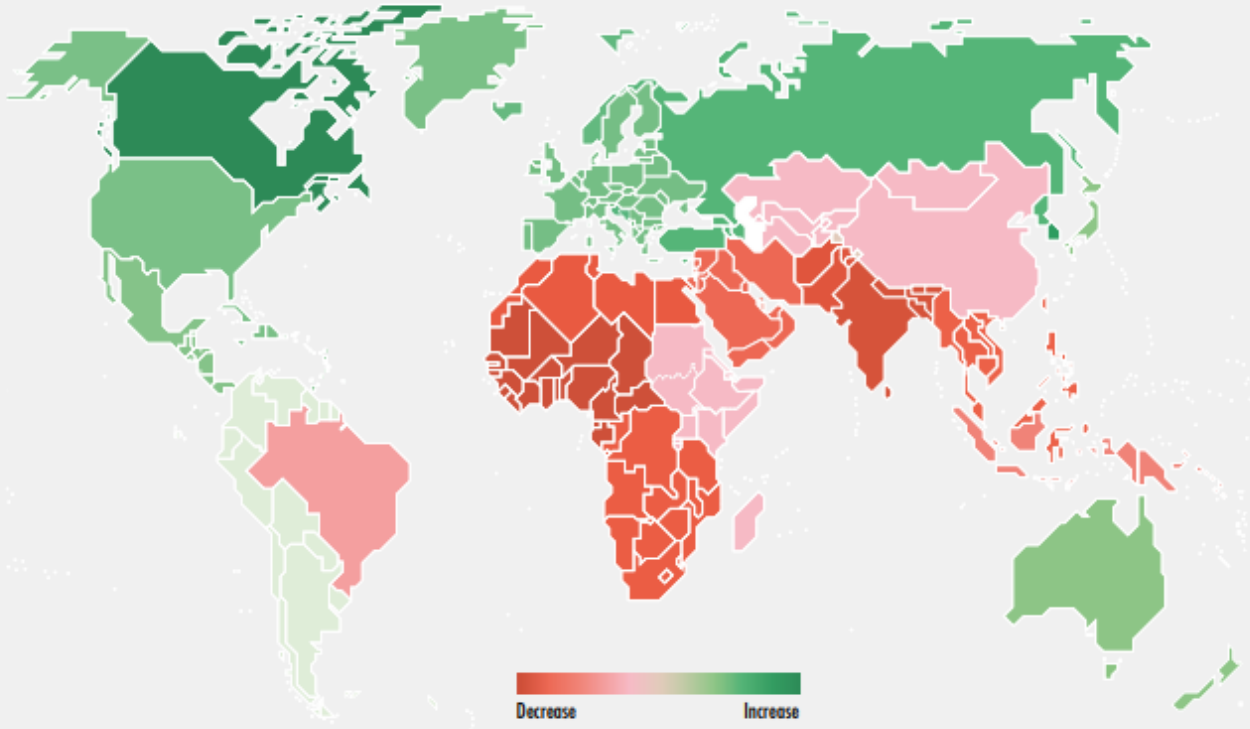


Source: WID.world (2017). See wir2018.wid.world/methodology.html for data series and notes.

Looking ahead - climate & environment

Changes in Agricultural Production in 2050

FIGURE 2.1
CHANGES IN AGRICULTURAL PRODUCTION IN 2050: CLIMATE CHANGE RELATIVE TO THE BASELINE



NOTE: The final boundary between the Republic of the Sudan and the Republic of South Sudan has not yet been determined. Final status of the Abyei area has not yet been determined.
SOURCE: Based on data provided by Wageningen Economic Research. 2018. Climate Change and Global Market Integration: Implications for global economic activities, agricultural commodities and food security. SOCO 2018 Background Paper, Rome, FAO.

Compared with the baseline, climate change is expected to result in declines in agricultural production in large parts of Africa, the Middle East and South and Southeast Asia. These declines are projected to be more pronounced in West Africa and India, where production could decrease by 2.9 and 2.6 percent respectively due to climate change impacts

FAO. 2018. The State of Agricultural Commodity Markets 2018. Agricultural trade, climate change and food security. Rome.

Looking ahead – conflict and food prices

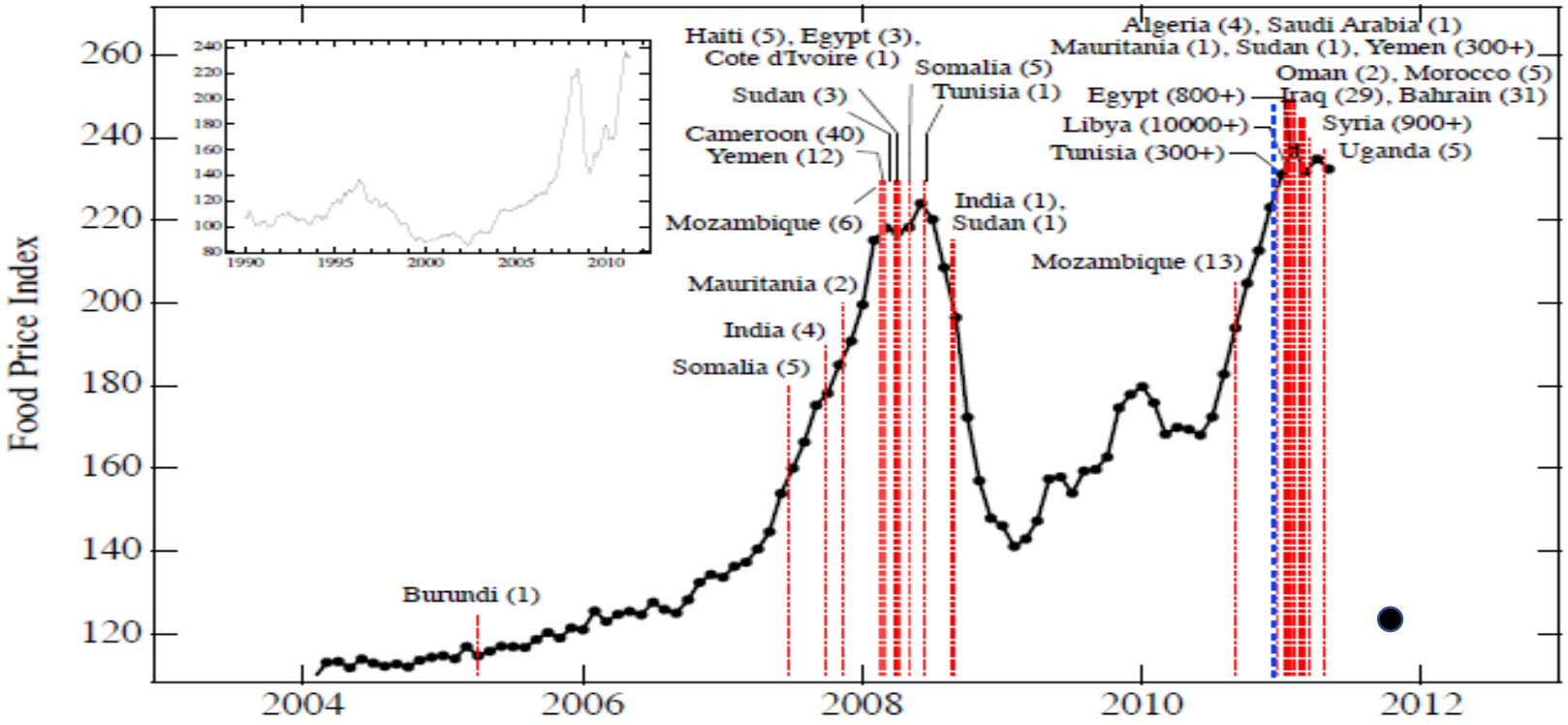
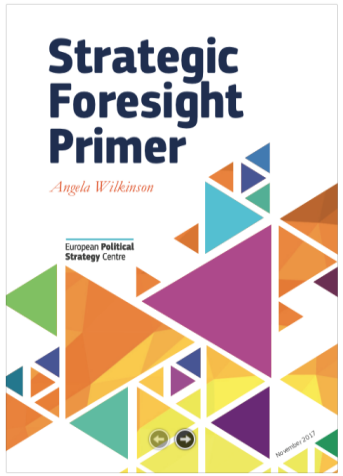
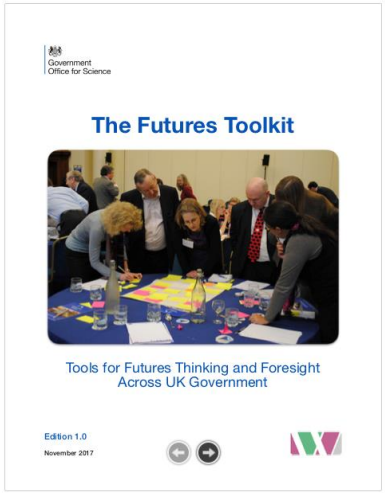
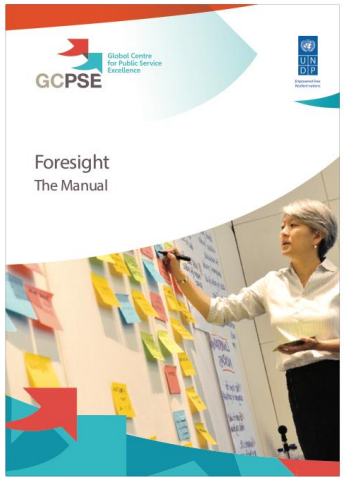


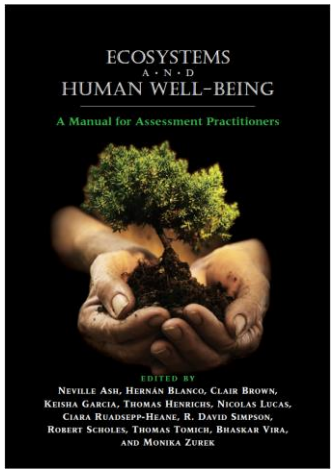
FIG. 1: Time dependence of FAO Food Price Index from January 2004 to May 2011. Red dashed vertical lines correspond to beginning dates of "food riots" and protests associated with the major recent unrest in North Africa and the Middle East. The overall death toll is reported in parentheses [26–55]. Blue vertical line indicates the date, December 13, 2010, on which we submitted a report to the U.S. government, warning of the link between food prices, social unrest and political instability [56]. Inset shows FAO Food Price Index from 1990 to 2011.

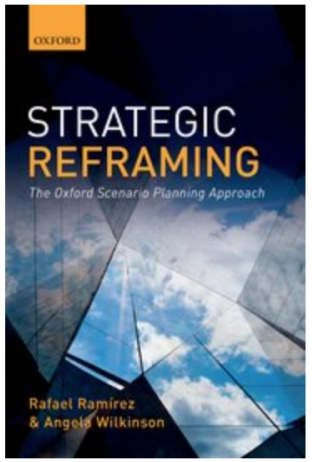
Some Resources For Getting Started

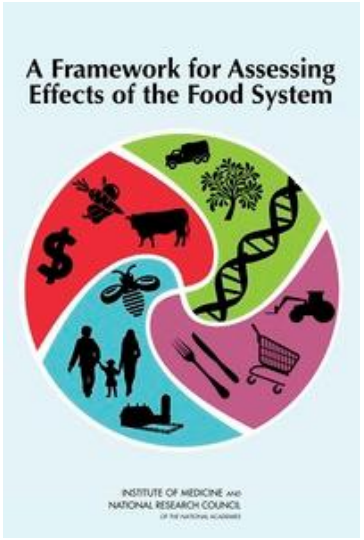


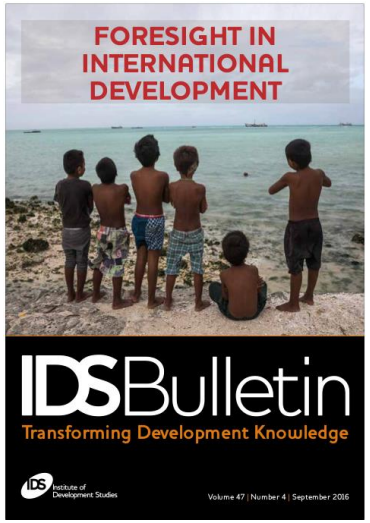


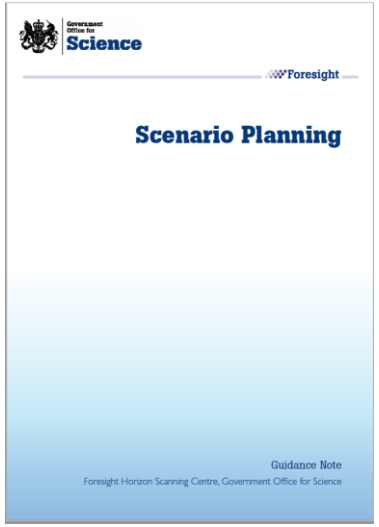


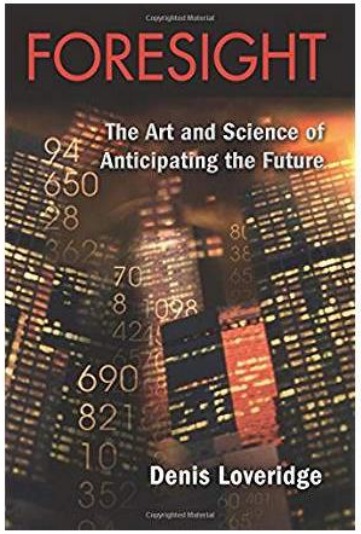


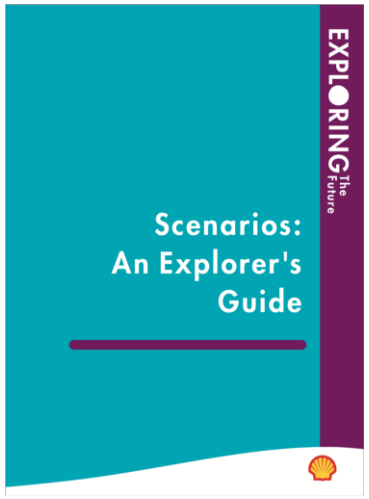




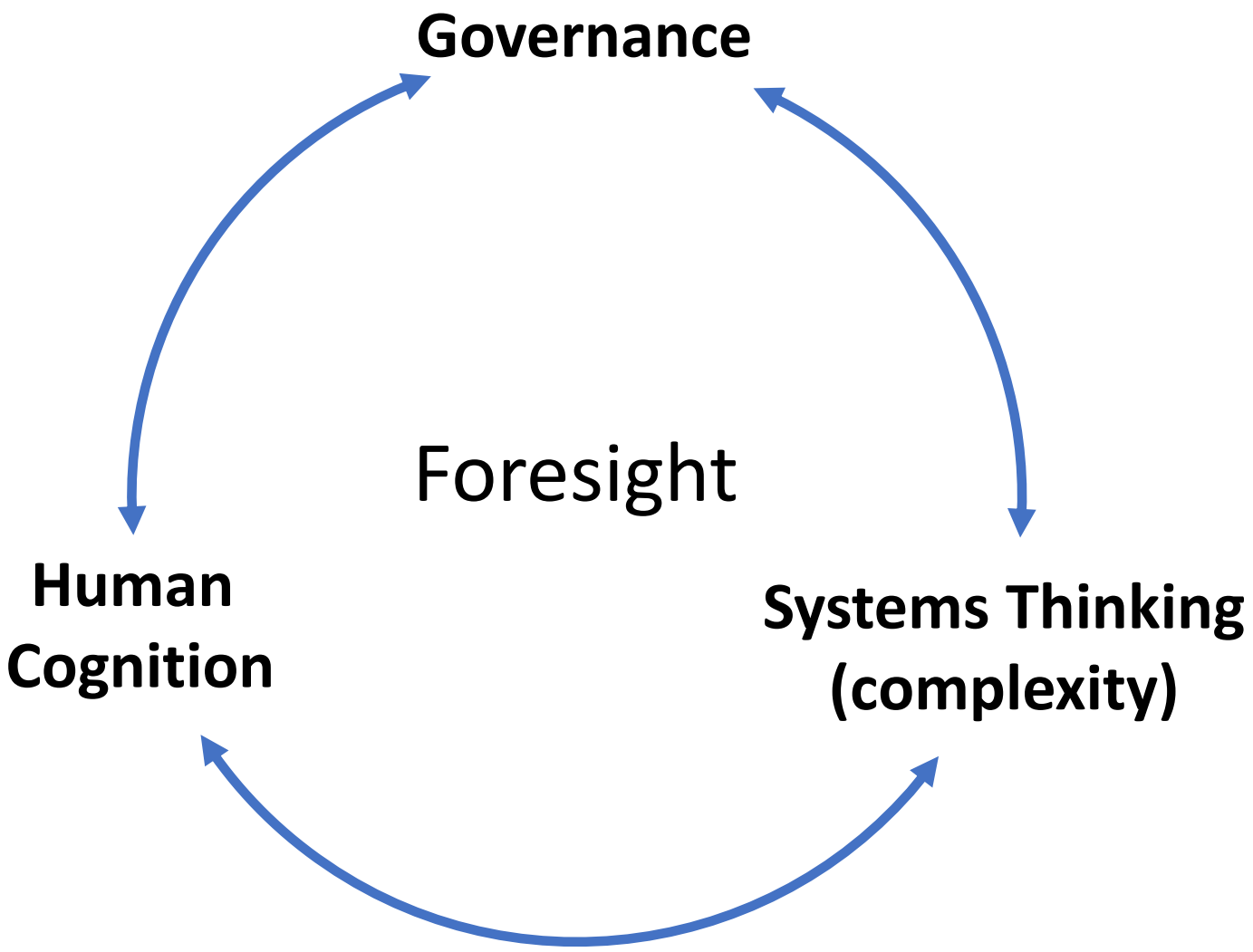






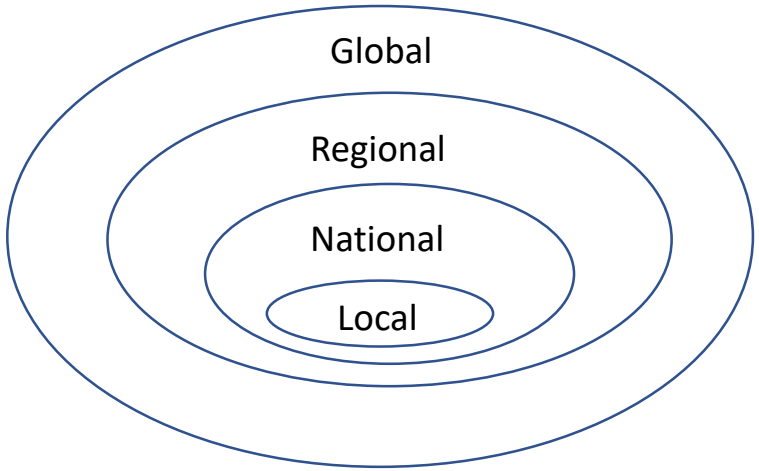


Foresight – A systems approach to change

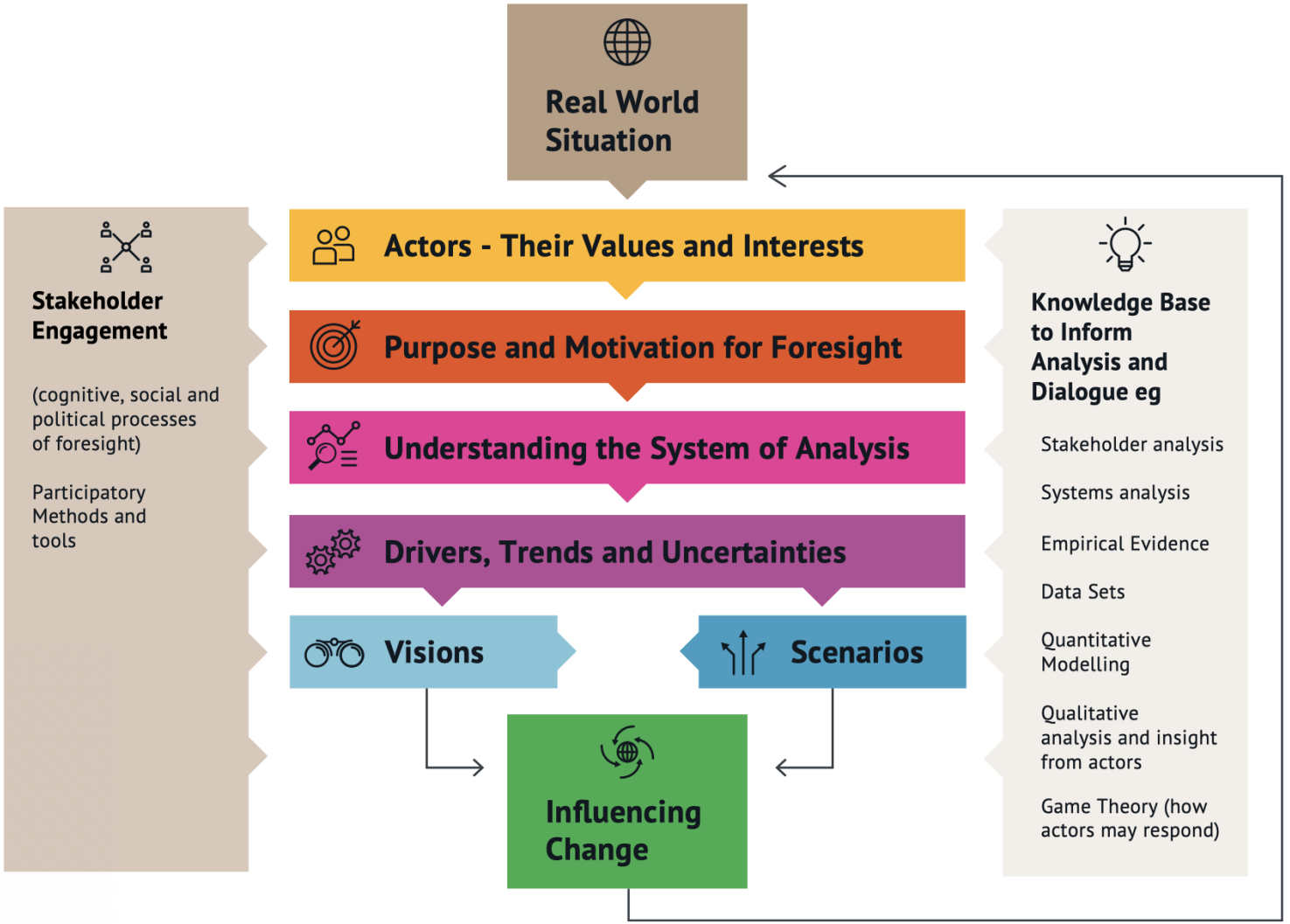


Time Frame, Focus an Scale

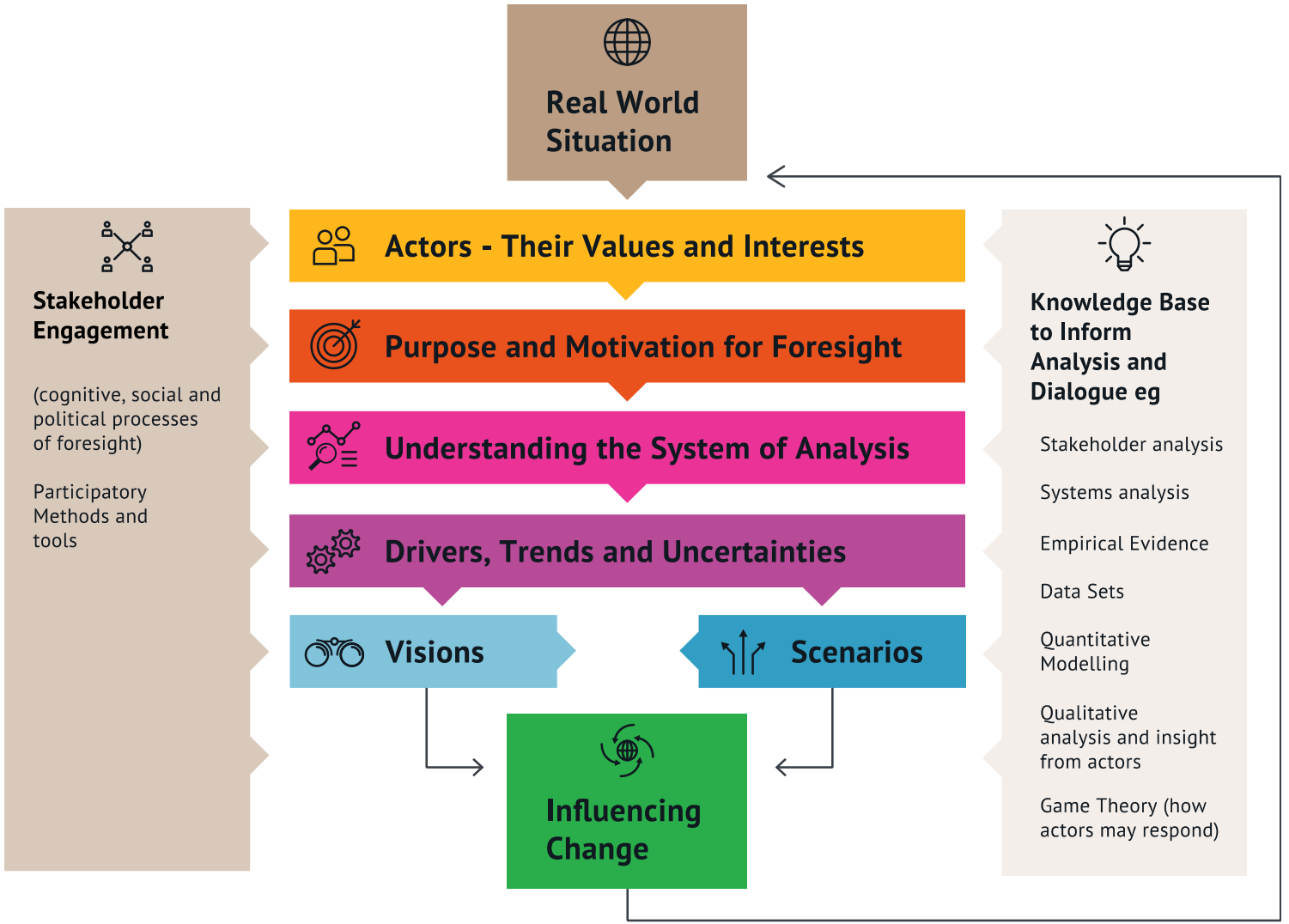
- 5 – 50 years perspective – but to understand implications for action now
- Agriculture and food systems in context of food, water and energy nexus
- Scale



Foresight Framework



Framework for Understanding Foresight



Challenges of perceiving and anticipating the future

Human Perception and Understanding

Methodology

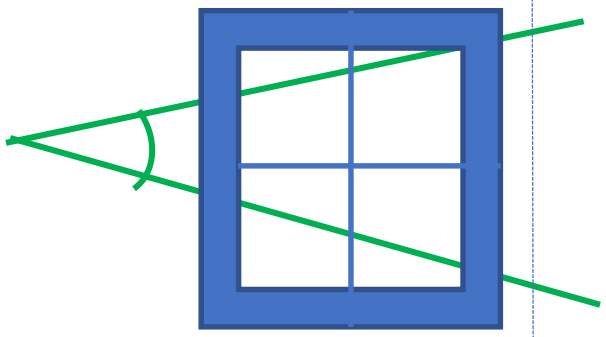
Values

Information

Bias

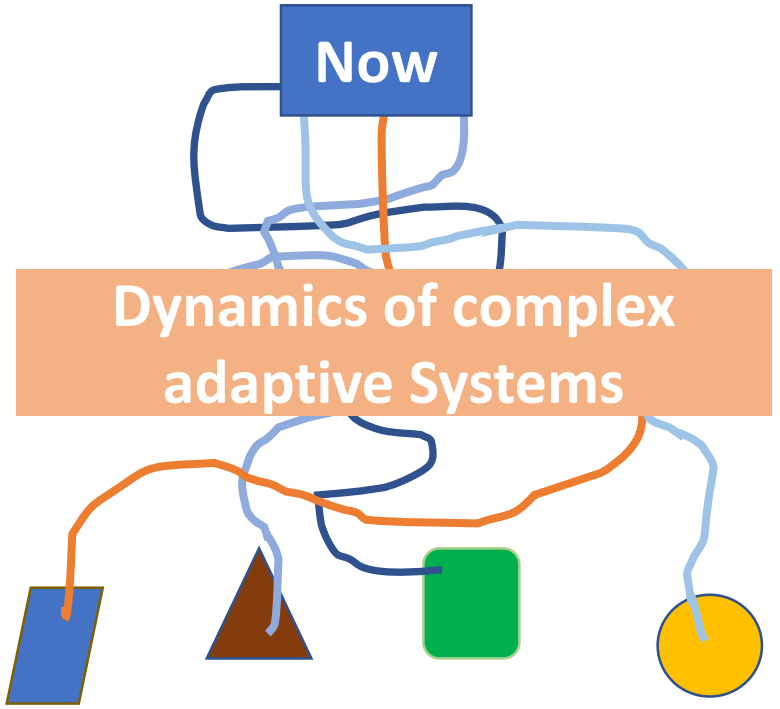
Frames

Windows on the World



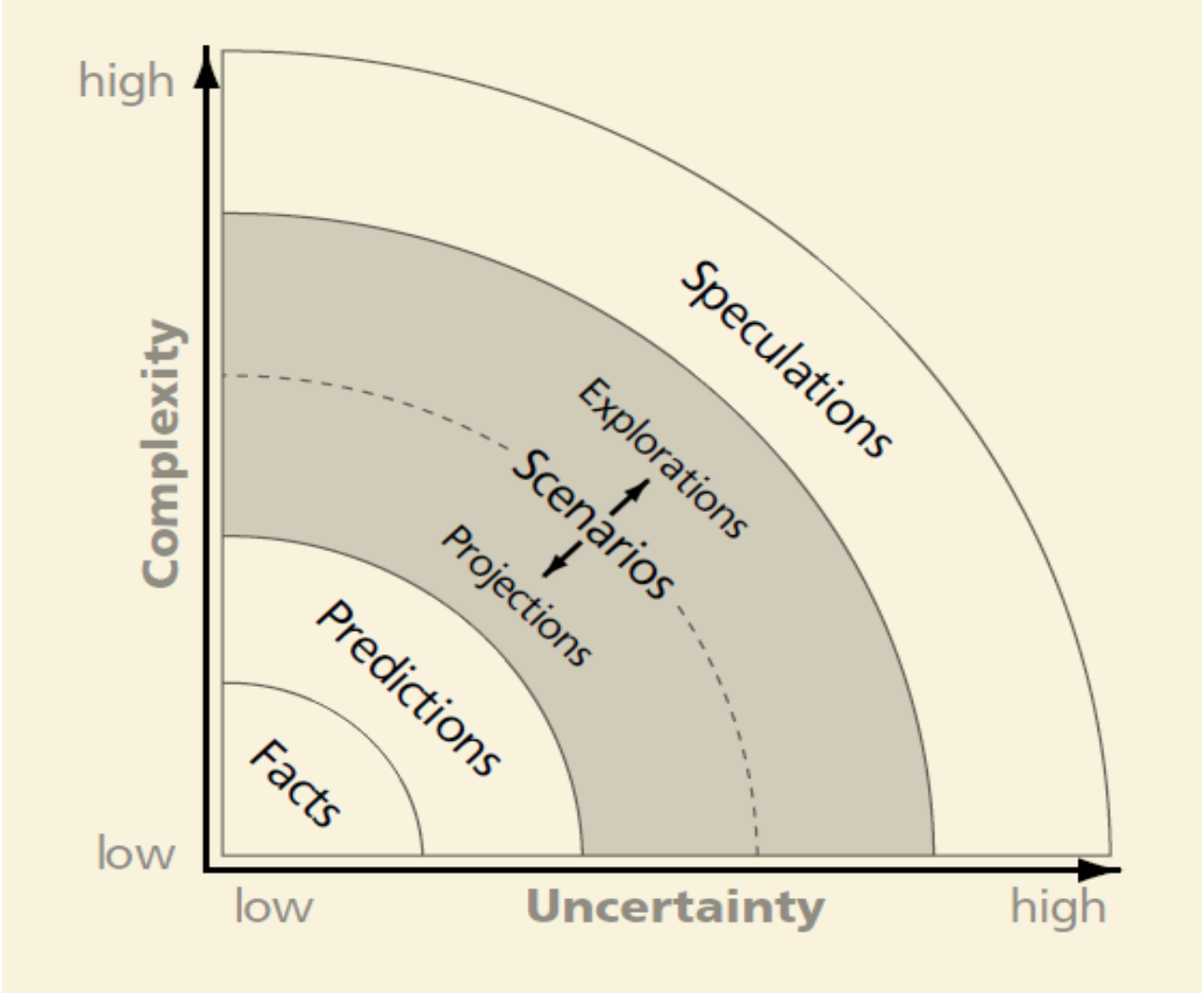
”real” world of socio-ecological interactions

Drivers



Future – different scenarios

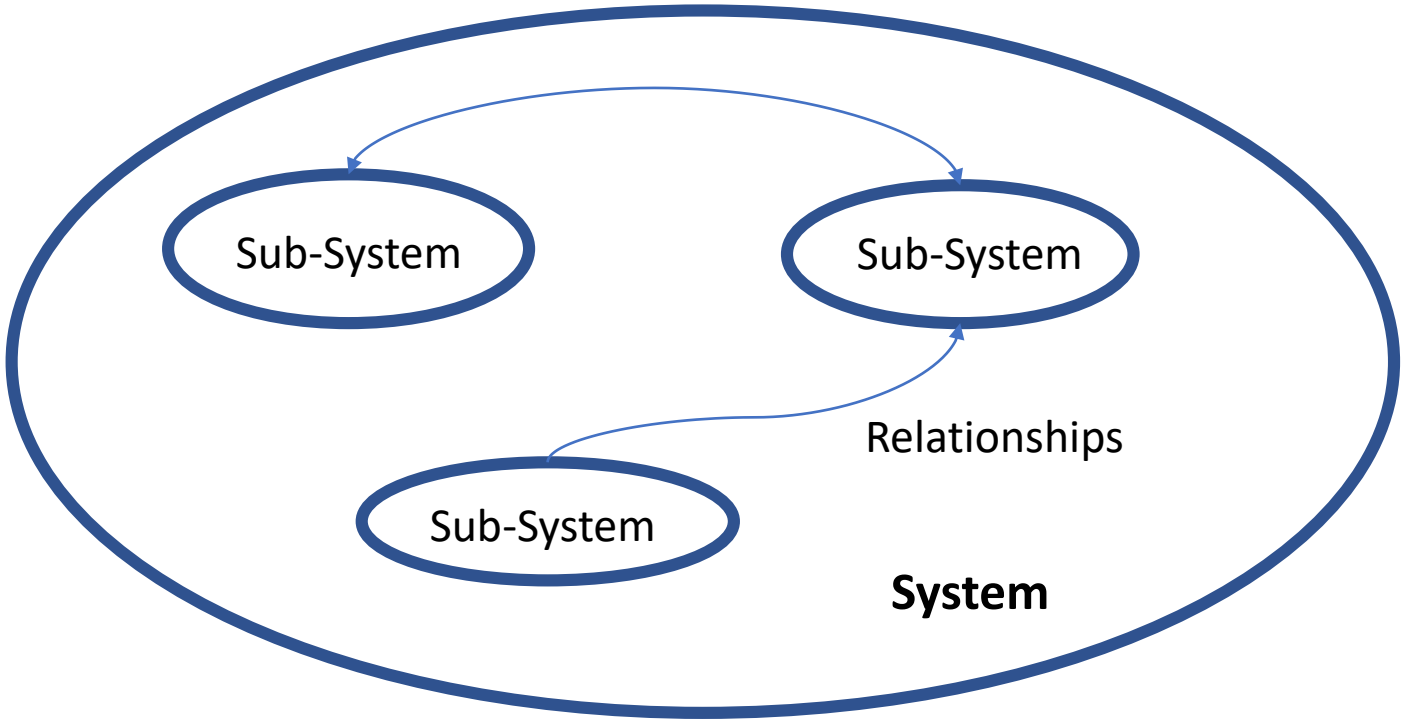
An initial framing



Understanding the System

Environment

Inputs



Outputs / Outcomes

Drivers, Trends and Uncertainties - Examples

Identifying the key drivers that influence the food system, their associated trends and patterns, and the main uncertainties are crucial before undertaking a scenario development process. This can be done through a consultative stakeholder process (see SUSFANS example above).

Drivers

1. Consumption
2. Technology
3. Markets
4. Climate and Environment
5. Policy and Geopolitics

Trends

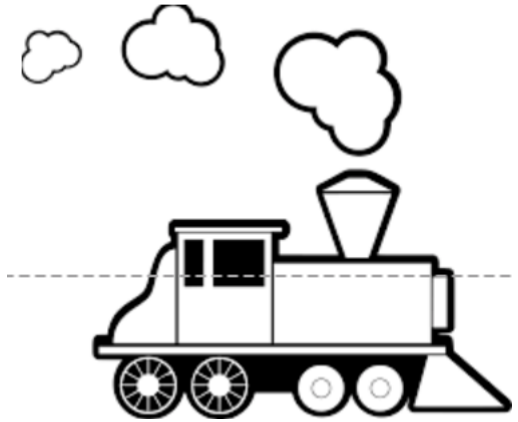
1. Increasing population
2. Increasing urbanization,
3. Worsening climate change
4. Increasing resource scarcity
5. Accelerating technological change
6. Increasing market connectivity

Uncertainties

1. Pace of Market Growth
2. Effects of climate change
3. Shifting demand of food
4. Disruptive technologies
5. Migration
6. Social and economic change

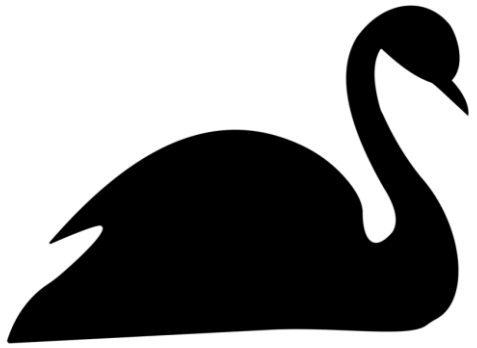
Drivers, Trends and Uncertainties

“Stream Trains”



Easily perceived drivers and trends that will influence change - direct and indirect

“Black Swans”



Rare and/or unpredictable events that have a big impact

Risks and Opportunities

Systemic Risks

Transformational Opportunities

	Steam Trains	Black Swans
Systemic Risks	Obesity Biodiversity loss	Disease outbreaks Trade regimes ?
Transformational opportunities	ICT for inclusive banking Genetic engineering	Unforeseen technology Sudden social or political change

Scenarios

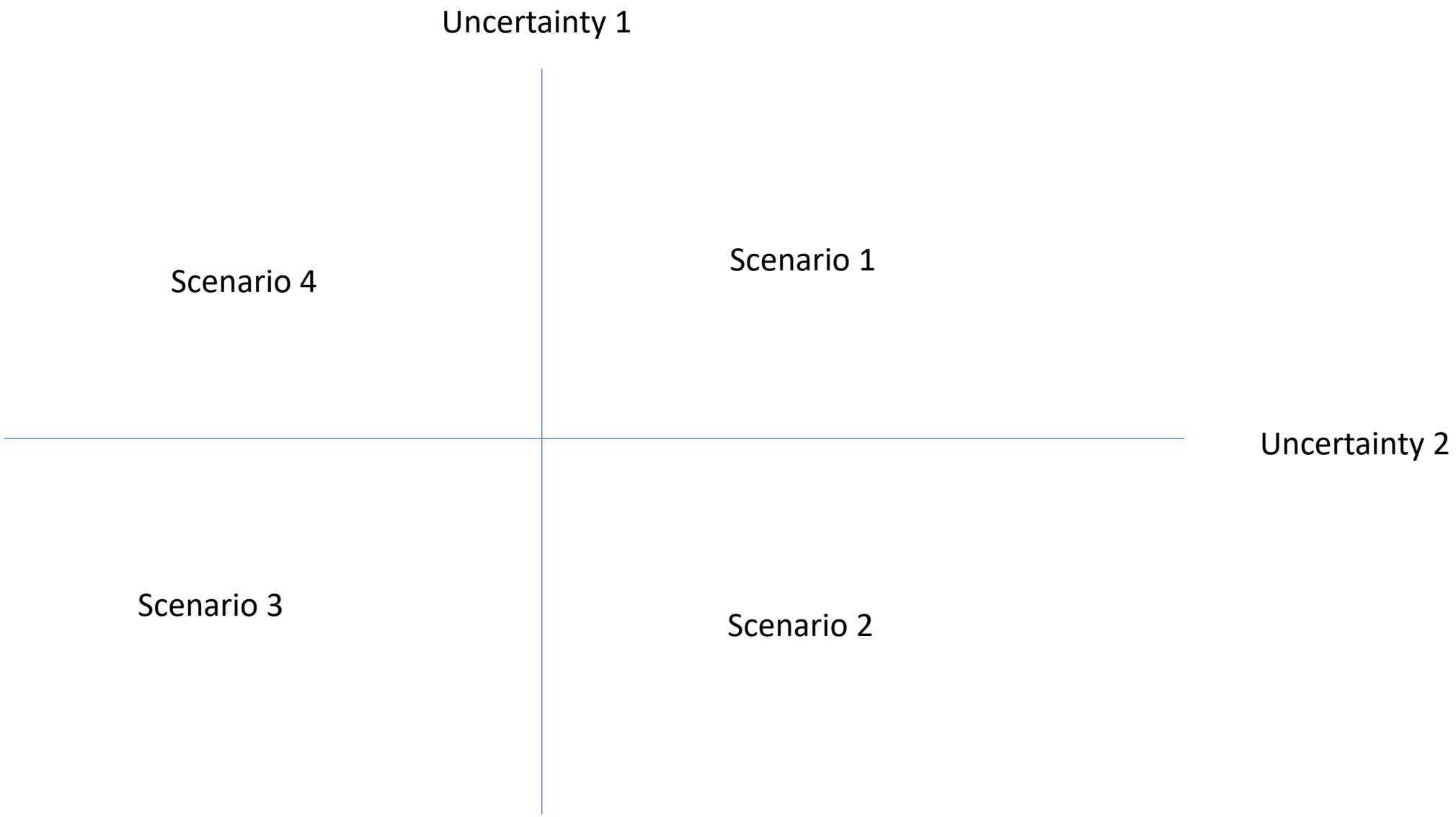
A description of how the future may unfold according to an explicit, coherent and internally consistent set of assumptions about key relationships and driving forces.

Types of scenarios

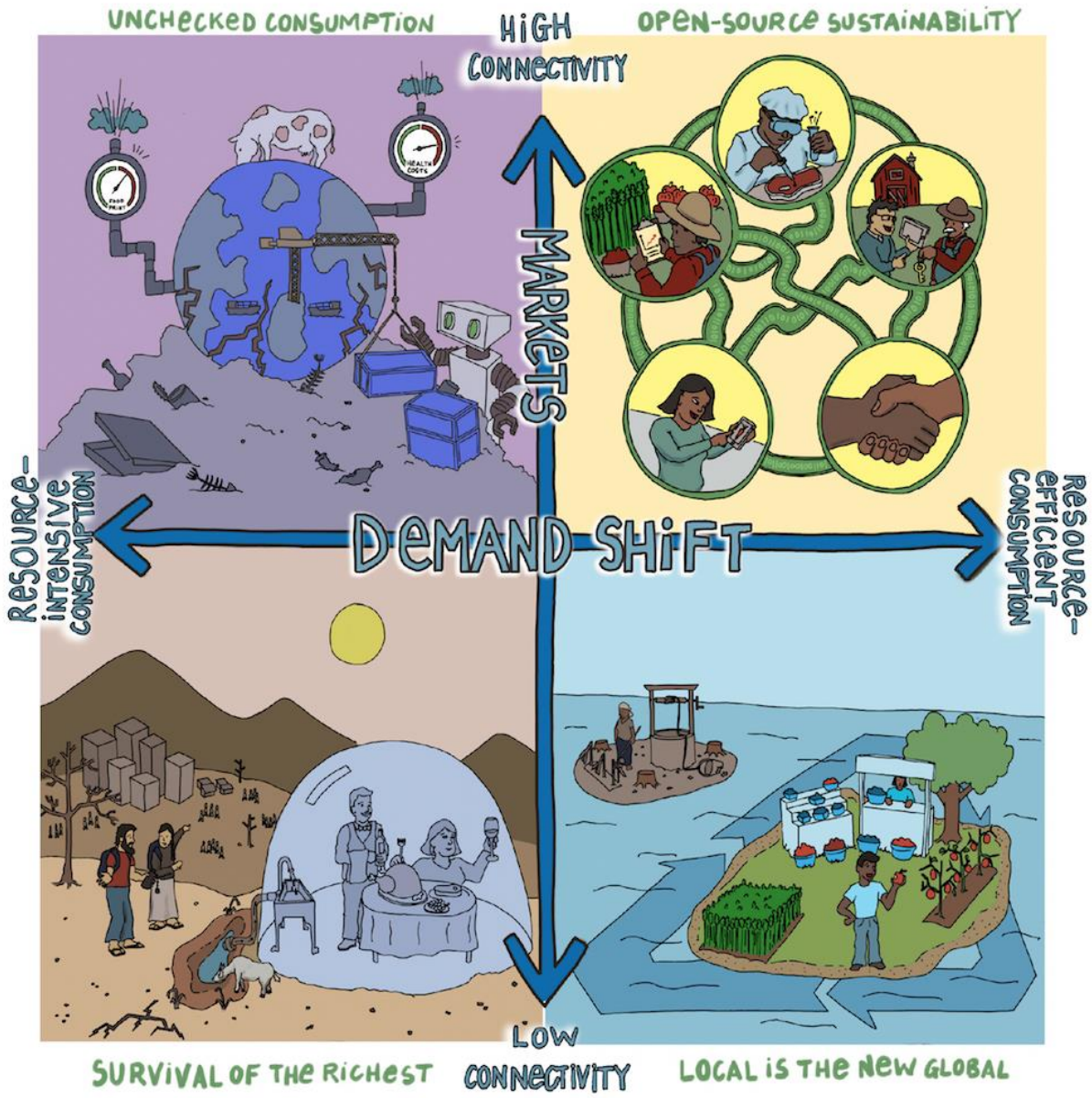
- Predictive
- Explorative
- Normative

- (Backcasting)

Scenarios – a common approach



Example of Scenarios



Different ways of mapping scenarios

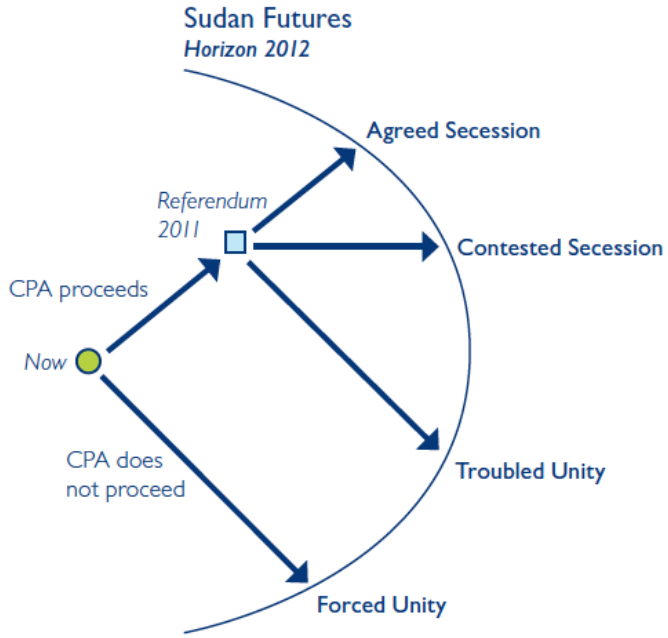


Figure 2: Sudan 2012 scenarios

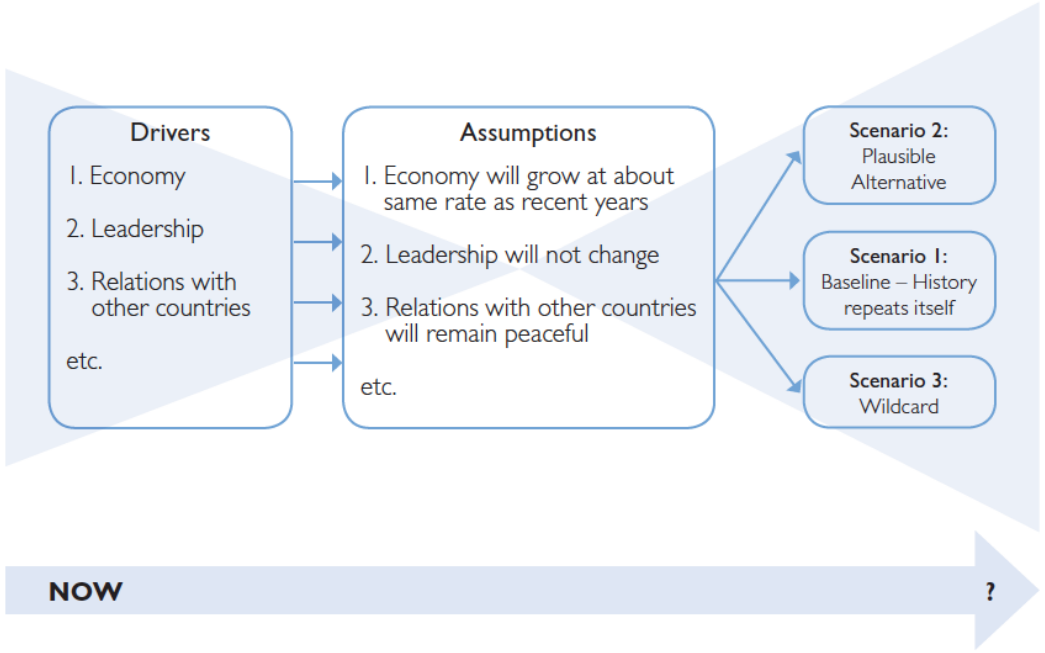
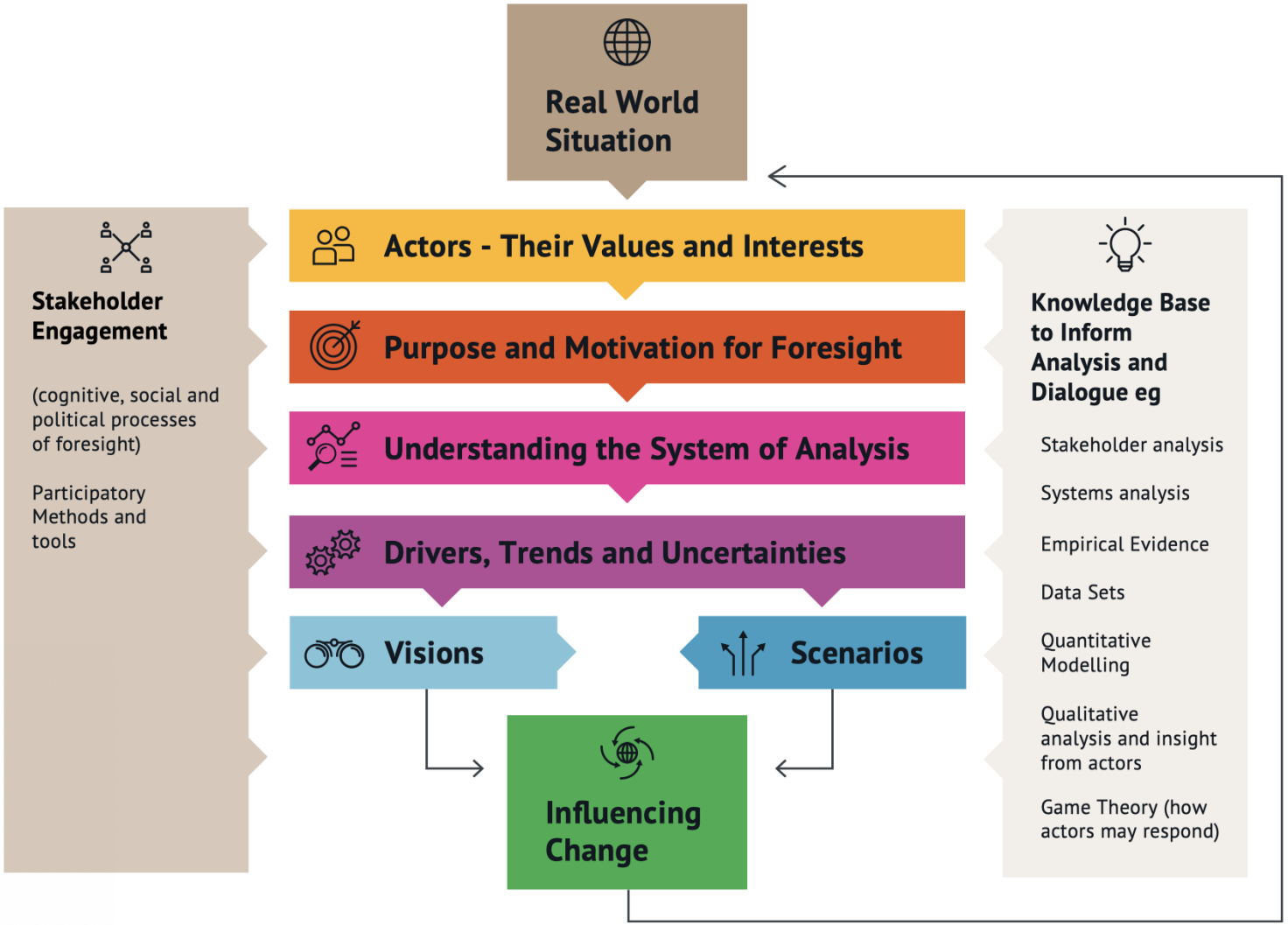


Figure 3: India in 2020

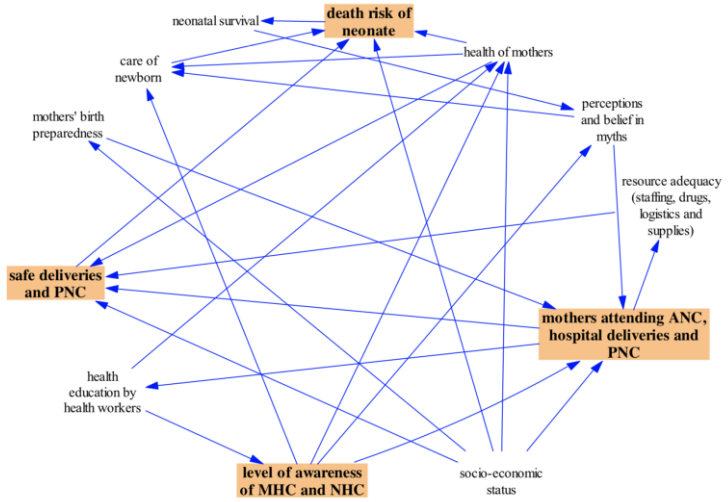
Scenario Planning Guidance Note
Foresight Horizon Scanning Centre, (UK)
Government Office for Science

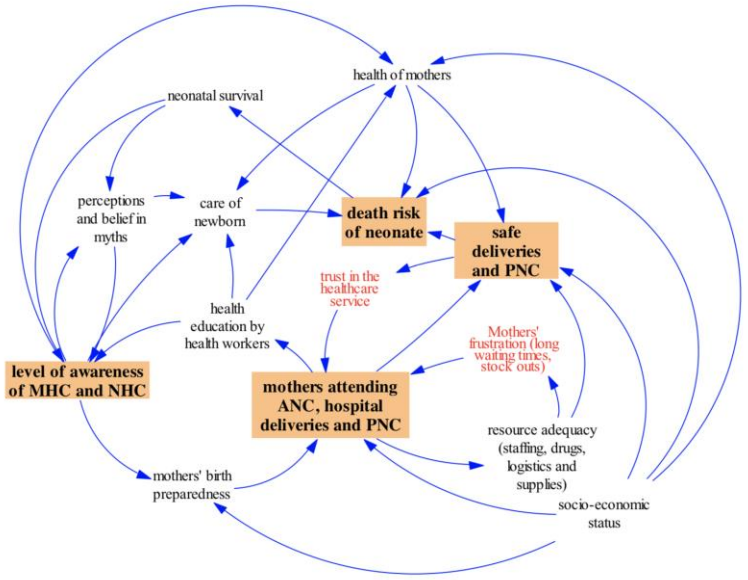
Influencing Change (Theories of change)

Foresight Framework



Systems Mapping





Rich picture

- A drawing of a situation that illustrates the main elements and relationships that need to be considered in trying to intervene to create some improvement.
- A rich picture helps us to understand the complexity of an entire situation. It is a way of thinking holistically. A rich picture helps us to see relationships and connections that we may otherwise miss.
- It is called a rich picture because it illustrates the richness and complexity of a situation.

Example of a rich picture

Tips

Be creative

Use symbols, icons and pictures as much as is possible

Focus on illustrating the relationships between different factors/stakeholders/scales

Focus on the ‘big picture’ and don’t get lost in the details of just one element

Encourage everyone to draw and add their ideas

Make use of the ‘artists’ in the group as well

Instructions

Step One – Rich picture

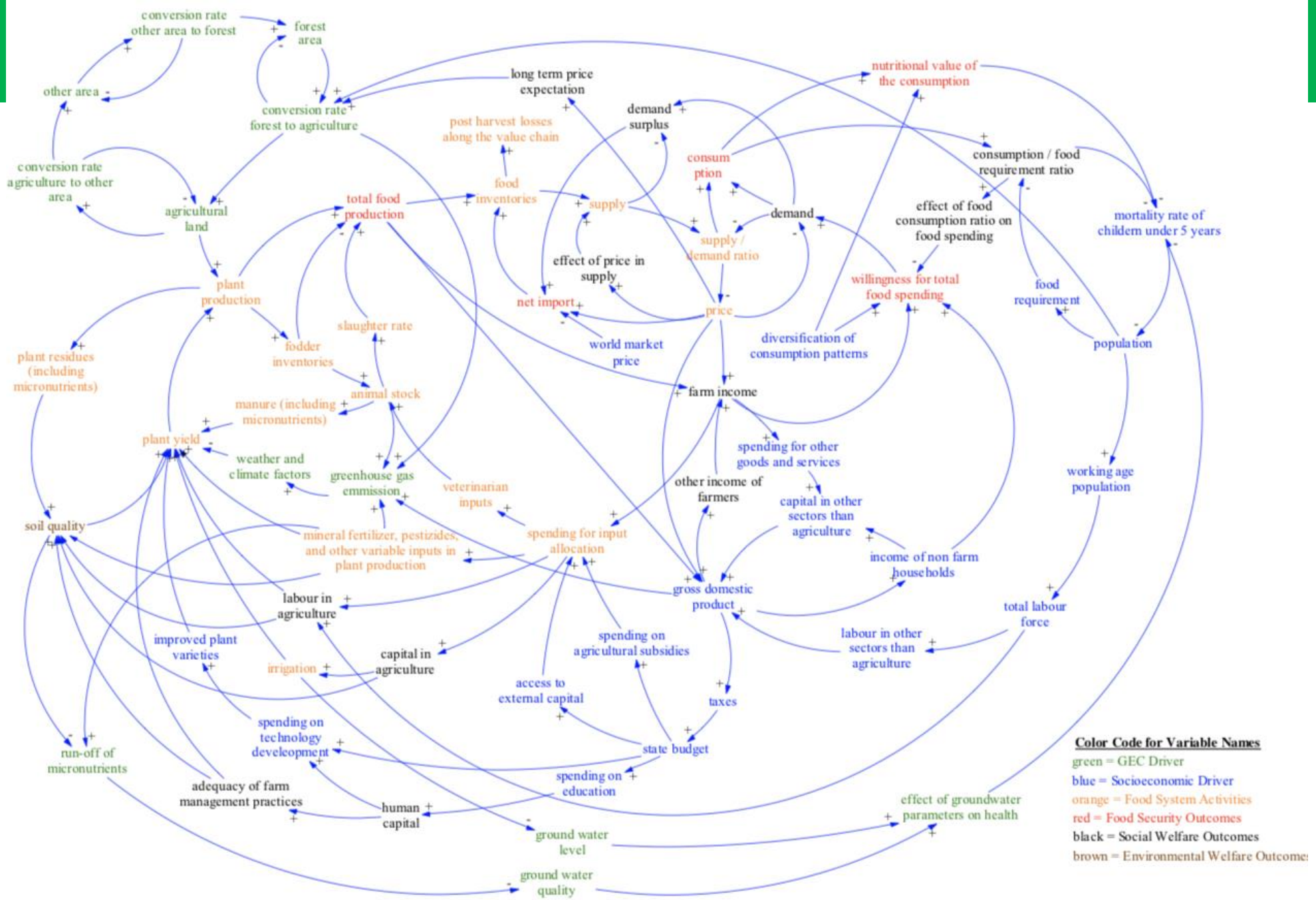
- Draw a geographic boundary and key features
- Add key features and actors in the food system
- Add relationships and flows with the wider environment
- Identify key relationships in the system and how these are changing
- Consider institutional factors
  - Governance mechanisms
  - Policies
  - Laws
- Think about power structures

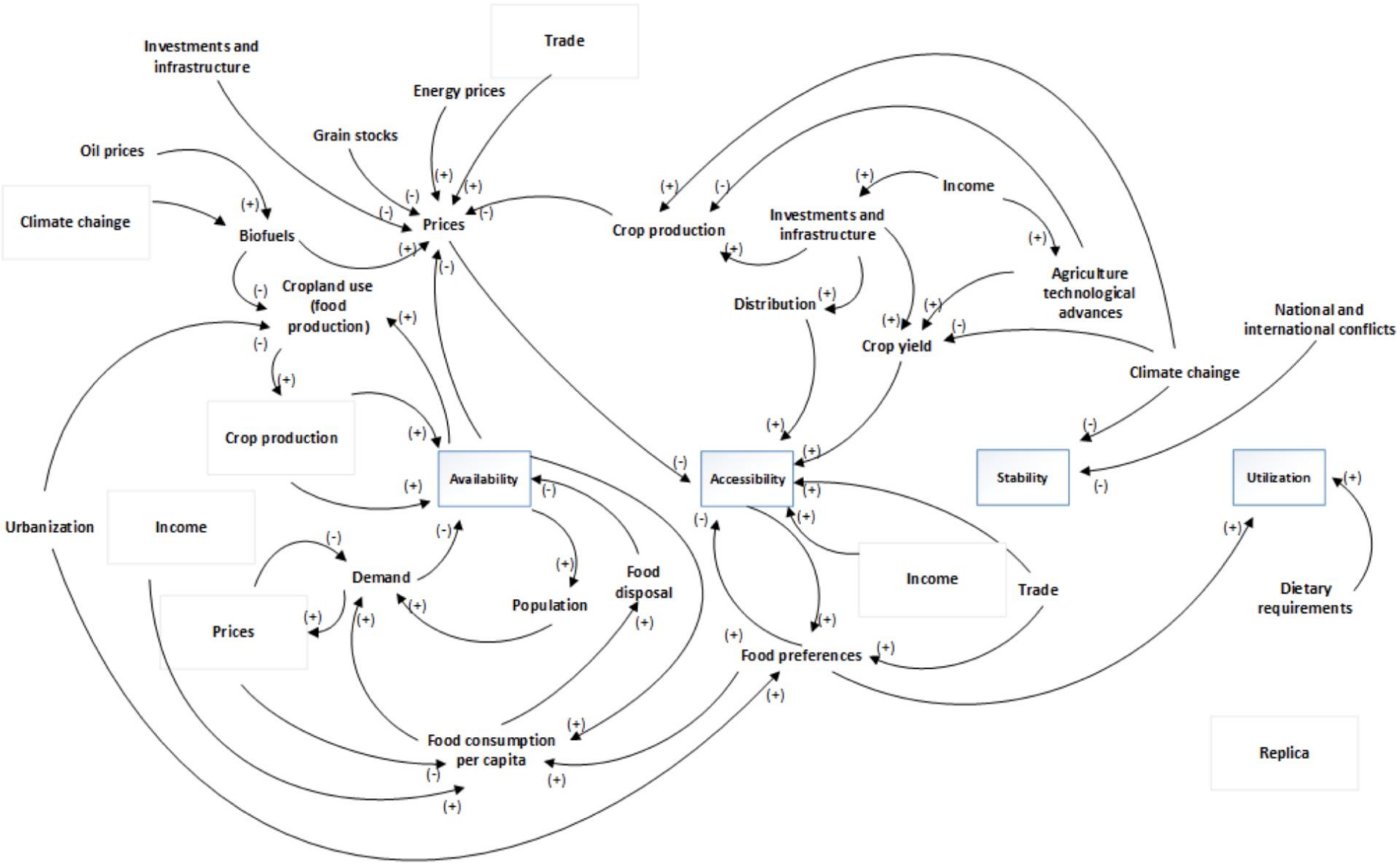
- About 50 Minutes

Step Two – Trends and Uncertainties

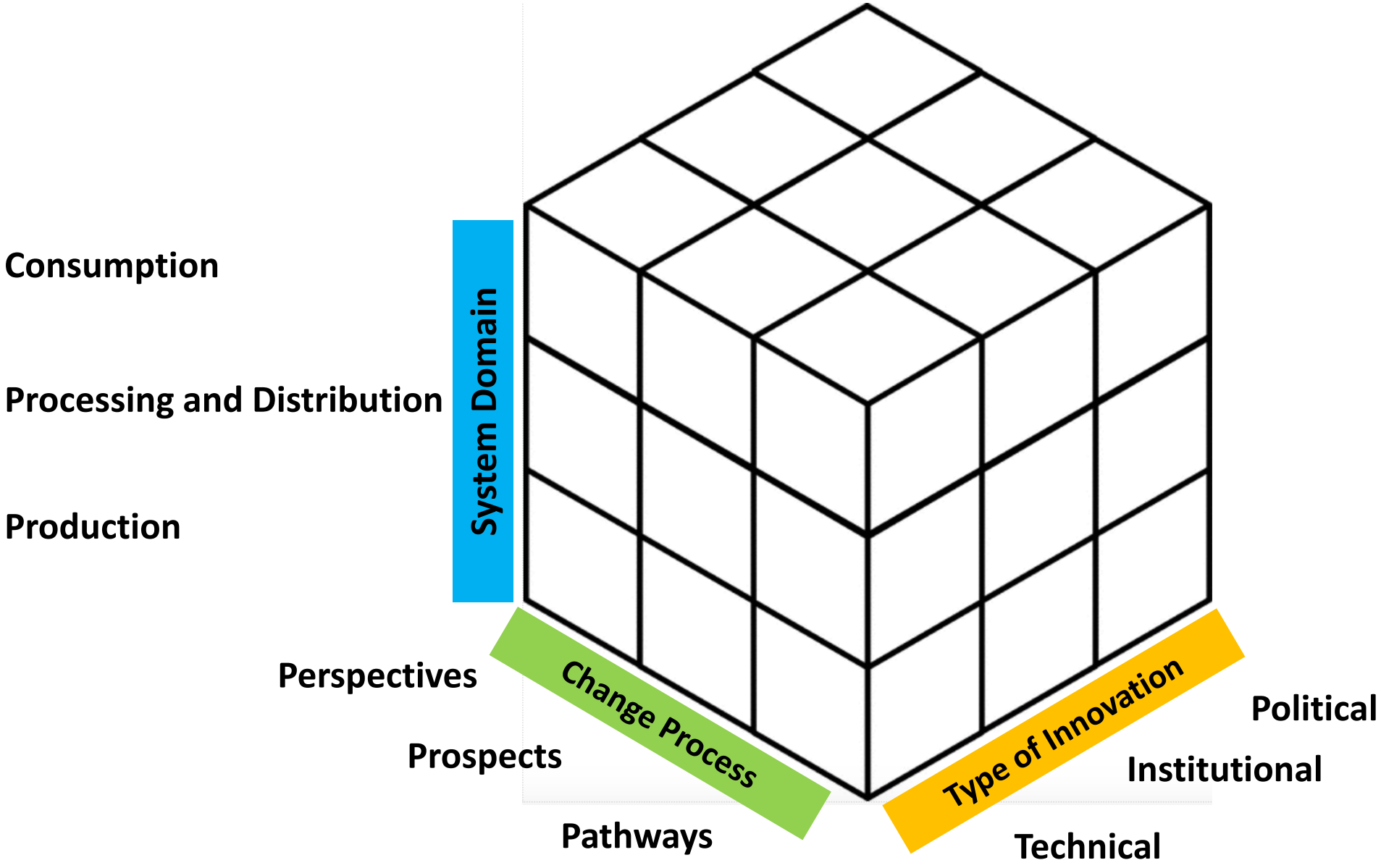
- Identify as many important trends as you can and write these on sticky notes and put on a flipchart
  - Connect then to your picture with a number
- Identify as many important uncertainties as you can and write these on sticky notes and put on a flipchart

- About 45 minutes


conversion rate other area to forest
forest area
other area
conversion rate forest to agriculture
long term price expectation
nutritional value of the consumption
demand surplus
post harvest losses along the value chain
consumption / food requirement ratio
consumption
conversion rate agriculture to other area
agricultural land
total food production
food inventories
supply
demand
effect of food consumption ratio on food spending
mortality rate of children under 5 years
supply / demand ratio
effect of price in supply
plant production
net import
price
willingness for total food spending
food requirement
slaughter rate
world market price
diversification of consumption patterns
population
plant residues (including micronutrients)
fodder inventories
animal stock
farm income
manure (including micronutrients)
plant yield
spending for other goods and services
weather and climate factors
greenhouse gas emmission
veterinarian inputs
other income of farmers
working age population
capital in other sectors than agriculture
soil quality
mineral fertilizer, pestizides, and other variable inputs in plant production
spending for input allocation
income of non farm households
gross domestic product
labour in agriculture
total labour force
improved plant varieties
capital in agriculture
spending on agricultural subsidies
labour in other sectors than agriculture
irrigation
access to external capital
taxes
spending on technology develeopment
state budget
run-off of micronutrients
spending on education
adequacy of farm management practices
human capital
effect of groundwater parameters on health
ground water level
ground water quality
Color Code for Variable Names
green = GEC Driver
blue = Socioeconomic Driver
orange = Food System Activities
red = Food Security Outcomes
black = Social Welfare Outcomes
brown = Environmental Welfare Outcomes


Investments and infrastructure
Trade
Energy prices
Grain stocks
Oil prices
Climate chainge
Biofuels
Prices
Crop production
Income
Investments and infrastructure
Agriculture technological advances
Distribution
Cropland use (food production)
Crop yield
National and international conflicts
Climate chainge
Crop production
Availability
Accessibility
Stability
Utilization
Urbanization
Income
Demand
Food disposal
Population
Prices
Income
Trade
Dietary requirements
Food preferences
Food consumption per capita
Replica

AgriFood Transformation – a rubics cube!



Focus

Pathways to Diversification

Diversifying agriculture in the Eastern Gangetic to support sustainable, inclusive and resilient food systems

Foresight and scenarios for innovation and change towards 2050

Technical Prospects

Focus – impacts of:

- WEF interactions
- Role of Gender
- Migration
- Trade

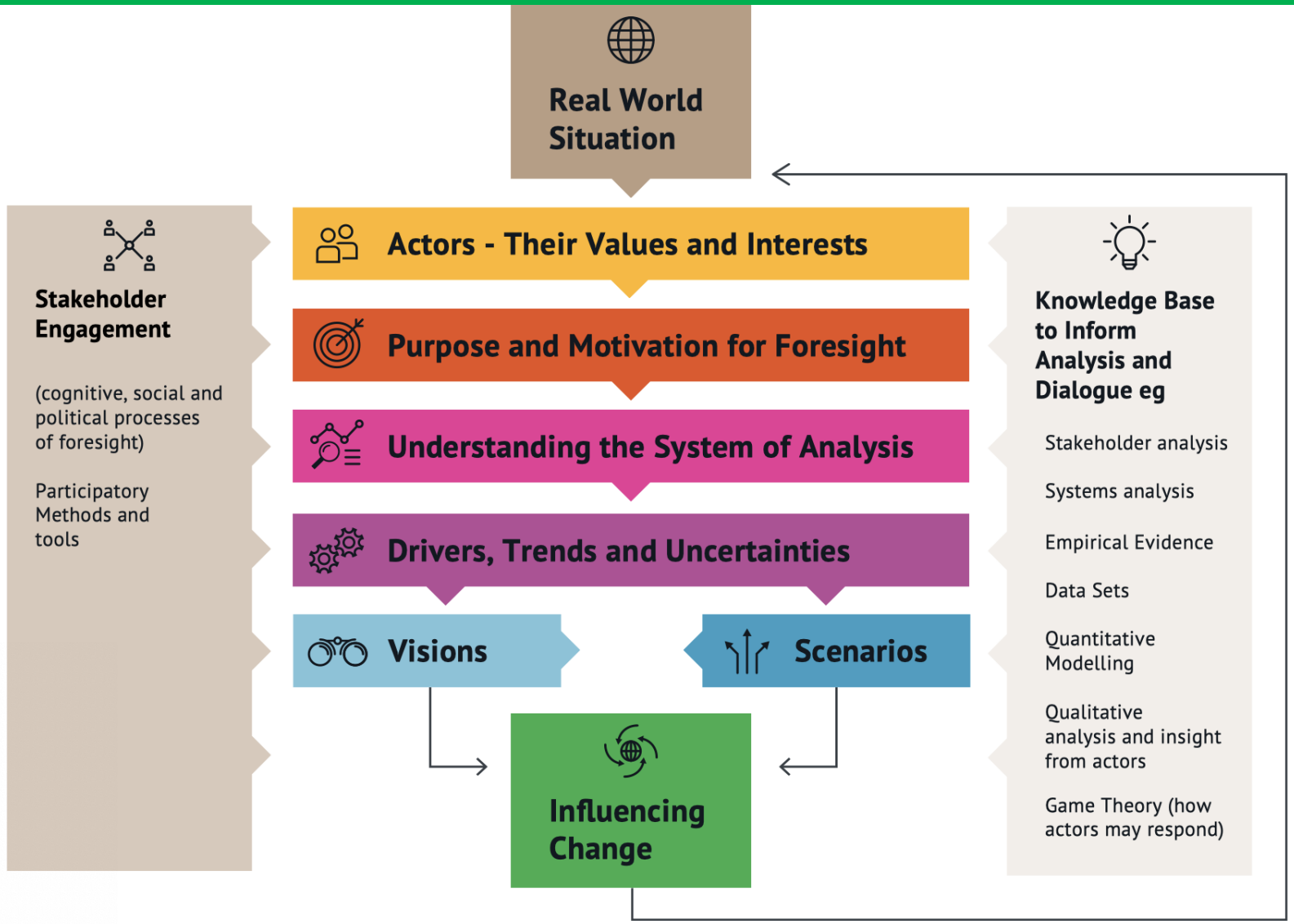
Influencing Change (Theories of change)

Group Instructions

- Develop a pitch for running foresight and scenario work in your location
  - Why is this needed
  - What would be the key elements
  - How could it be organized
- What would be the content focus of the work
- What could/would be the contribution to longer term change processes
- Who would you be trying to engage and why?
  - Who
  - What scale
  - How

- What analysis would be needed
- What would be your engagement strategy
  - Who
  - How
  - What scale

Foresight Framework



Scenario

Scenario 1: Crocodile lunch

Scenario 2: Lucky escape

Scenario 3: Smooth ride

Scenario 4: unseen dead end

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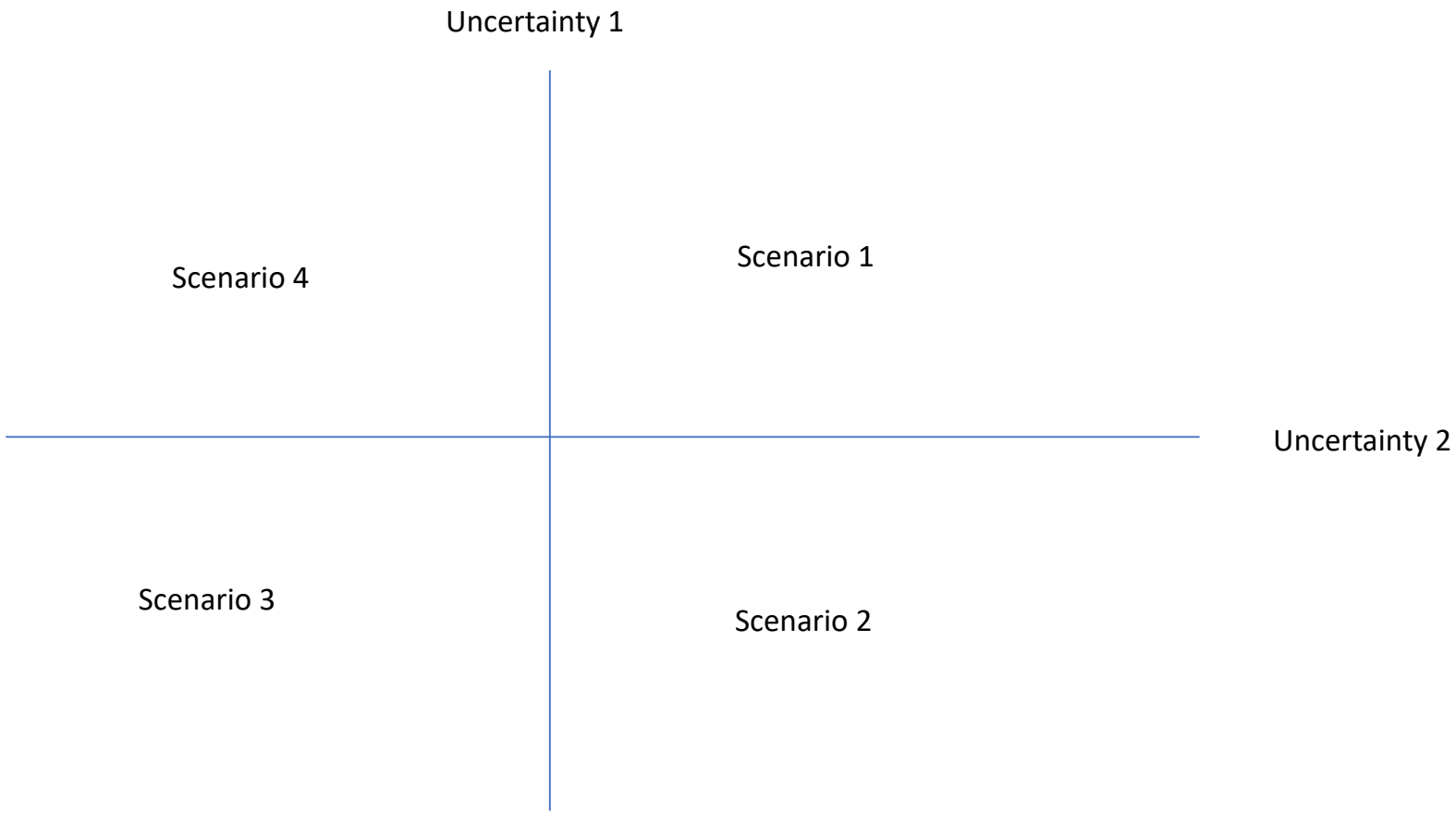
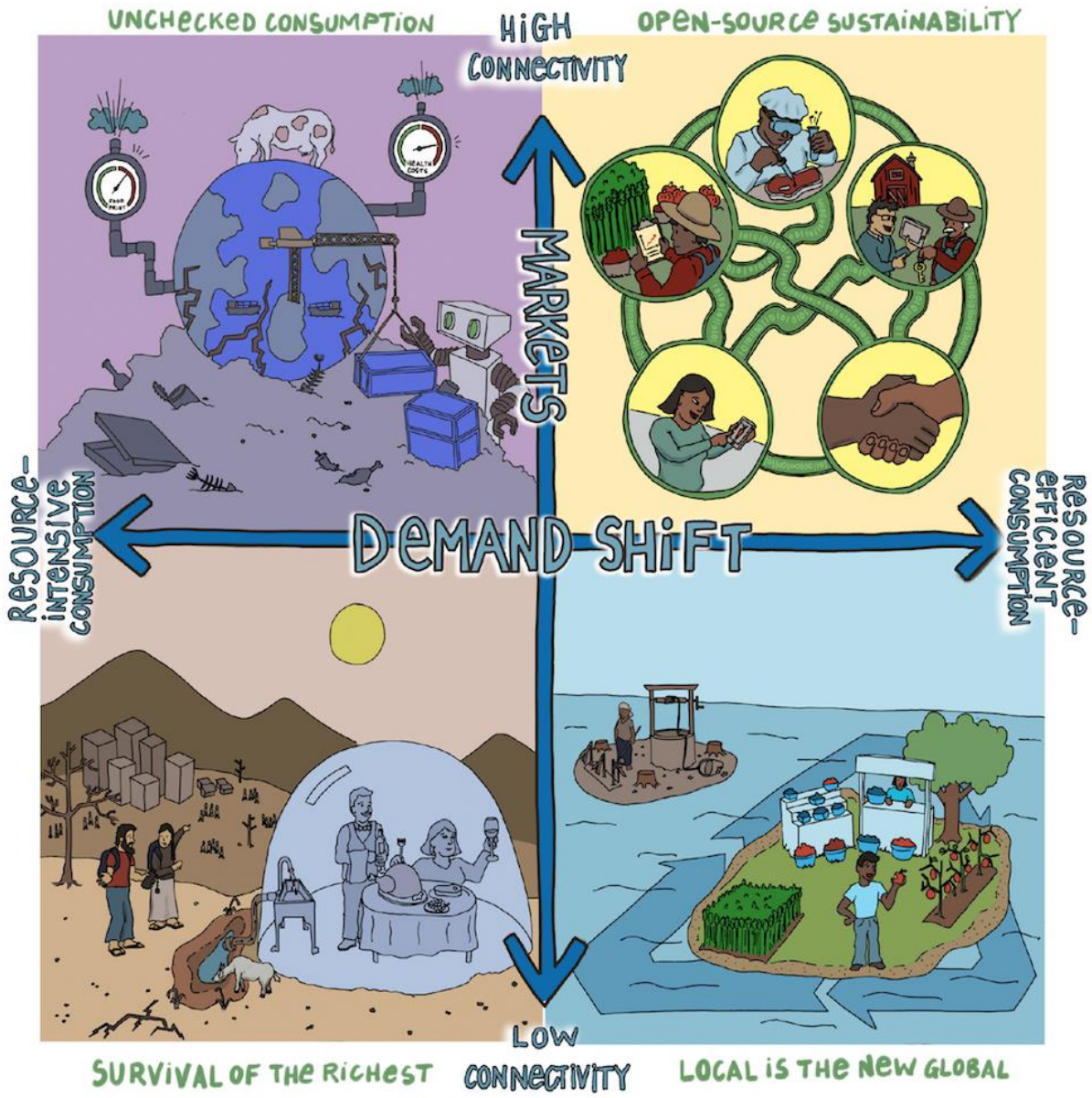
Scenarios – a common approach

Trends

Scenarios



Example of Scenarios



Different ways of mapping scenarios

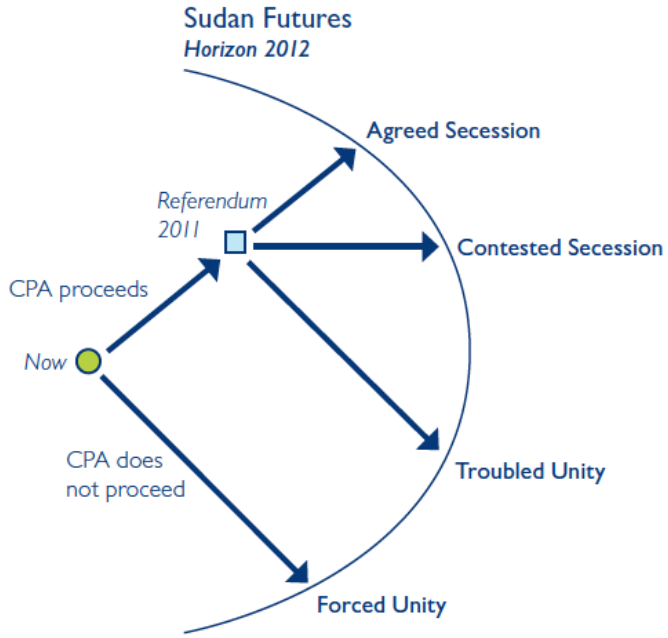


Figure 2: Sudan 2012 scenarios

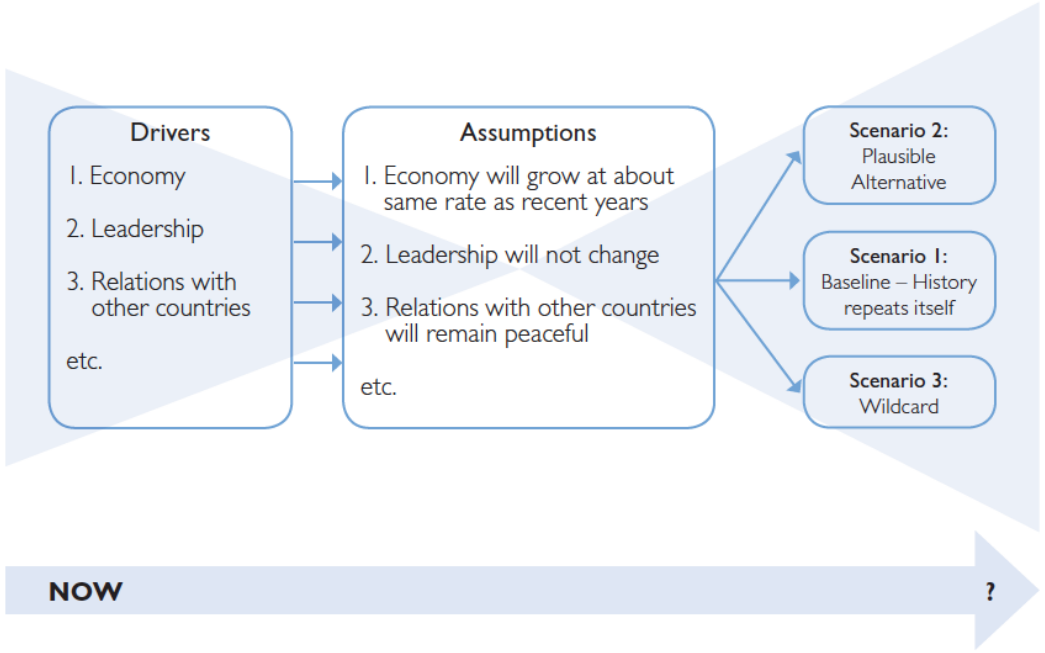


Figure 3: India in 2020

Scenario Planning Guidance Note
Foresight Horizon Scanning Centre, (UK)
Government Office for Science