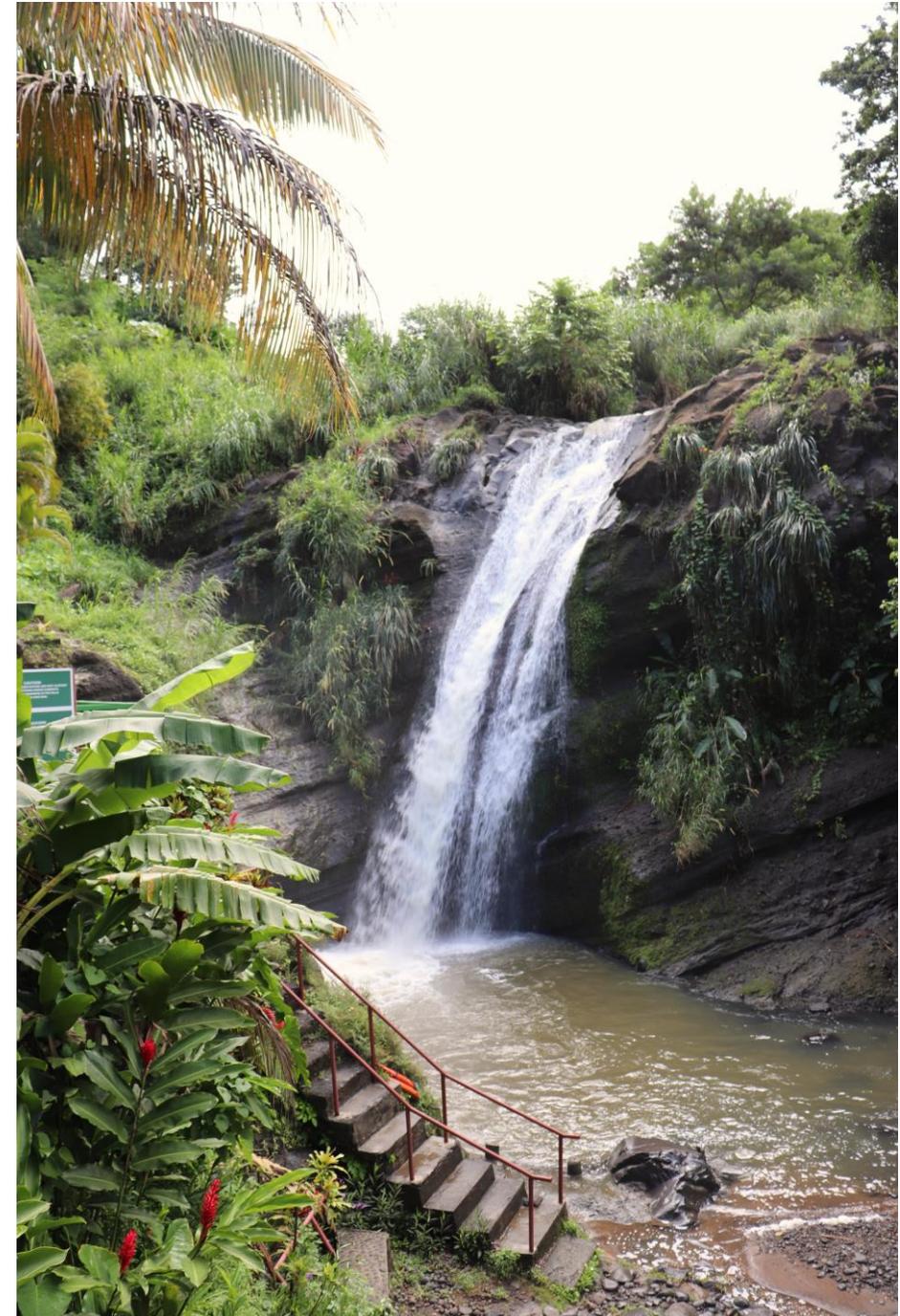




Grenada National Ecosystem Assessment (NEA) Training Series on Foresight Scenarios

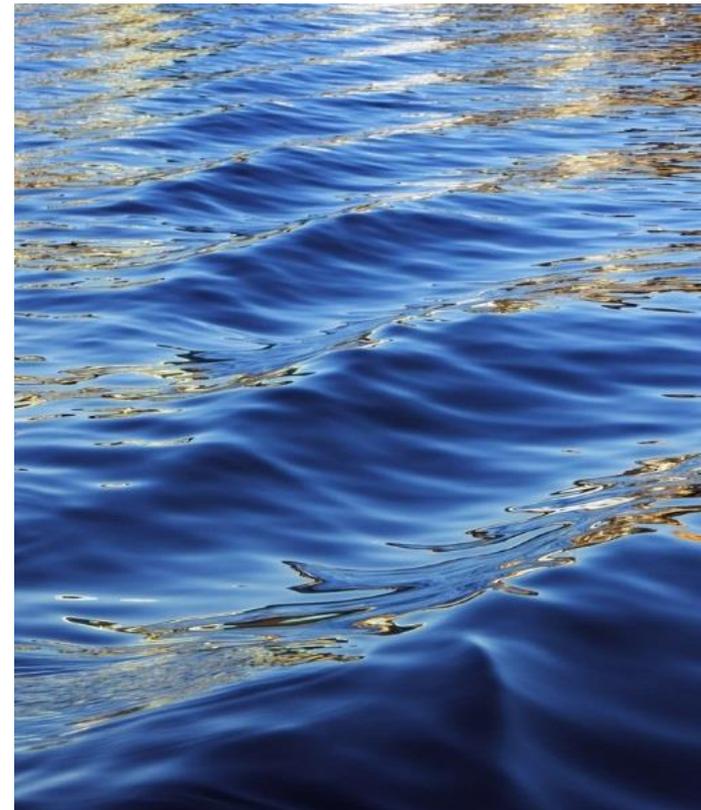
Session 5 – Examples from Literature
2nd September 2021





Foresight scenarios

Session 5: Examples



Outline

- Recap of some of the basics
- Top down or Bottom up approaches
- Drivers and areas of interest
- Examples of foresight scenarios
- Open discussion

Recap - 1

- Determining the focus or the inquiry means identifying what are the objective(s) of developing the foresight scenarios
- This assists in mapping of potential impacts

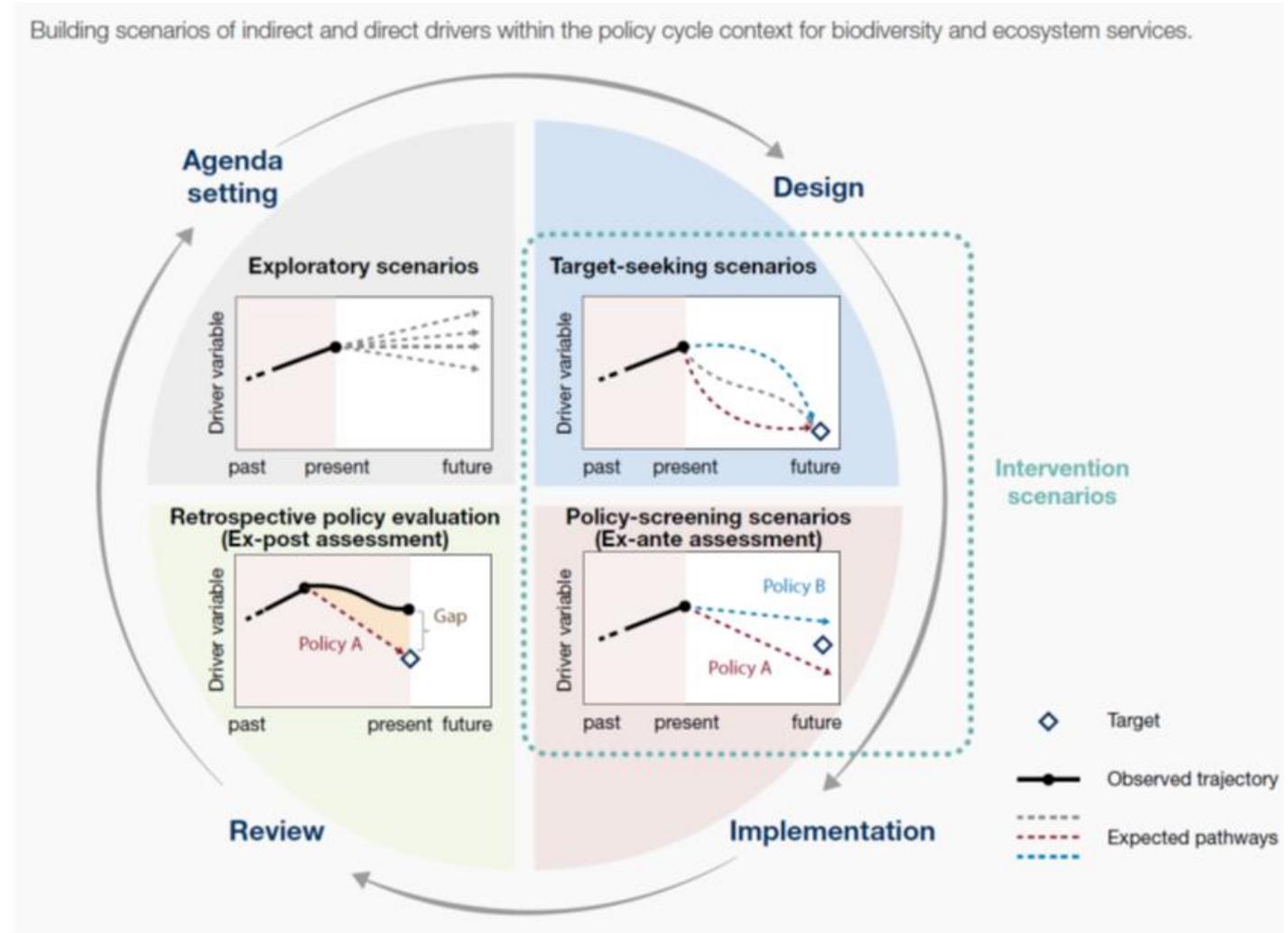
From discussions and feedback the following has been suggested:

"What would be the contribution of biodiversity and ecosystem services to the economy and social wellbeing of Grenada under different scenarios"

Are we happy with this as a starting point?

Recap - 2

- Types of scenarios that could be used:
 - Retrospective
 - Policy screening
 - Target-seeking – Backcasting
 - Exploratory



Recap - 3

- Drivers – Trends – Critical Uncertainties
 - Which of the drivers and trends are we most uncertain about their potential impact and likelihood of happening and their effects on what we are interested in?
- Approaches
 - Archetypes
 - Matrix of uncertainties
- Techniques for getting relevant information
 - Horizon scanning
 - Delphi
 - Future Wheel/Word Café
 - 3 Horizons
 - Cross-Impact Balance

Approaches - use existing scenarios or develop our own?

- As we have seen there are scenarios that have been developed, either at the global or regional scale
- Existing scenarios would have to be adapted either to be applicable to the subject matter or to the geopolitical context of Grenada.
- The alternative would be to develop scenarios that are customised to both the subject matter and geopolitical context.
- There are four potential alternatives which form a continuum from Archetypes to Custom-made

- 'Congruent Scenarios': Translate global scenarios in a direct and linear way into congruent regional/national scenarios – without regional deviations (yet flagging possible inconsistencies)
- 'Consistent Scenarios': Detail regional/national scenarios within the context of global scenarios, aim for general consistency across scales – avoid deviation where possible
- 'Coherent Scenarios': Develop regional/national scenarios, based on broad rationale, assumptions and outcomes of global scenarios - allow deviation where needed
- 'Complementary Scenarios': Construct regional/national scenarios largely independently from global scenarios; add information from global scenarios as may fit

What are your thoughts?

Examples of Foresight Scenarios

1. Caribbean Scenarios for Research on Global Environmental Change and Regional Food Systems
2. GoLoCarSce/Water-aCCSIS Scenarios
3. Latin America and the Caribbean 2030: Future Scenarios
4. Scenarios for land use and ecosystem services under global change
5. Designing Guadeloupian agriculture in 2040

Caribbean Scenarios for Research on Global Environmental Change and Regional Food Systems

- An example of how global scenarios were adapted to the Caribbean
 - Coherent scenarios
- Starting from existing global scenarios from the Millennium Ecosystem Assessment, regional GECAFS scenarios were developed for the Caribbean
- First workshop identified a set of key driving forces that affect Caribbean food system in the context of GEC.
 - future development was largely influenced by regional factors (i.e. endogenous) or by global factors (i.e. exogenous).
 - interactions between driving forces and food systems in the region.
 - together with the global scenario storylines based on the Millennium Ecosystem Assessment scenarios, developed a set of 'zero-order' descriptions of regional developments within four scenarios (of 1-2 pages each) incl. key assumptions.
 - Expanded after workshop to 5-10 pages per scenario
- Second workshop participants refined and detailed the assumptions of how the key endogenous driving forces identified in the first workshop would unfold in each of the four scenarios. Vulnerability of the food systems discussed

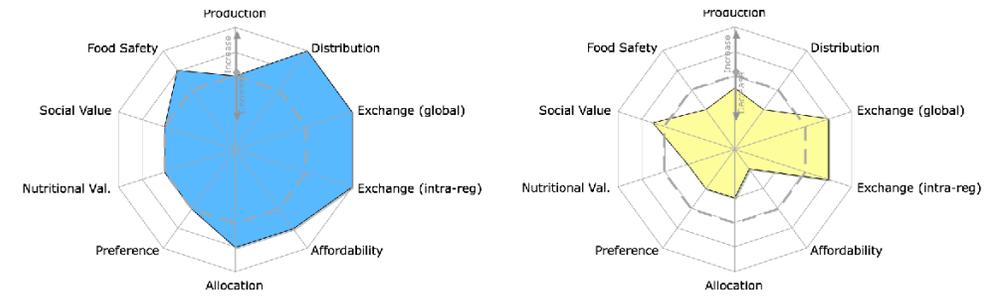
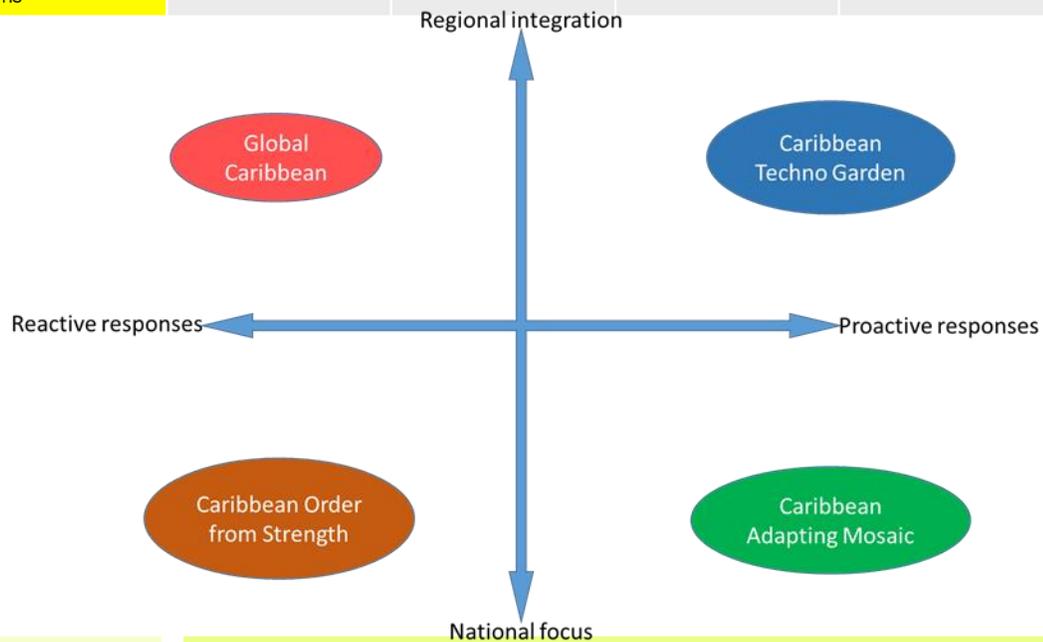
Caribbean Scenarios for Research on Global Environmental Change and Regional Food Systems

Outcome:

- Scenario 1: Global Caribbean (coherent with Global Orchestration);
- Scenario 2: Caribbean Order from Strength (coherent with Order from Strength);
- Scenario 3: Caribbean Techno Garden (coherent with Techno Garden);
- Scenario 4: Caribbean Adapting Mosaic (coherent with Adapting Mosaic).

Table 4.1 Driving forces related to demographic and economic development

	Global Caribbean	Caribbean Order from Strength	Caribbean Techno Garden	Caribbean Adapting Mosaic
Population growth		Continues, lower rate		
Fertility rates	Low (due to high income)		Lower fertility & mortality	
Life expectancy	Increases		Increases	
Age structure	Stable (also in agriculture)	Stable / aging	Aging	
Migration	Decreasing	More selective, "brain-drain" within and also out of region	Selective, within region follows resource availability	Relatively low
Urban - rural	Low in small countries, due more rural development		Less people in agriculture	Less urban, less migration from rural; more small urban centres, rural settlem.
Economic Growth	Relatively high	Relatively low	Relatively high	Low, but steady (maybe initial drop), growth not in traditional economics
Transport Cost / Energy Systems		High		High



Caribbean Techno Garden

Caribbean Adapting Mosaic

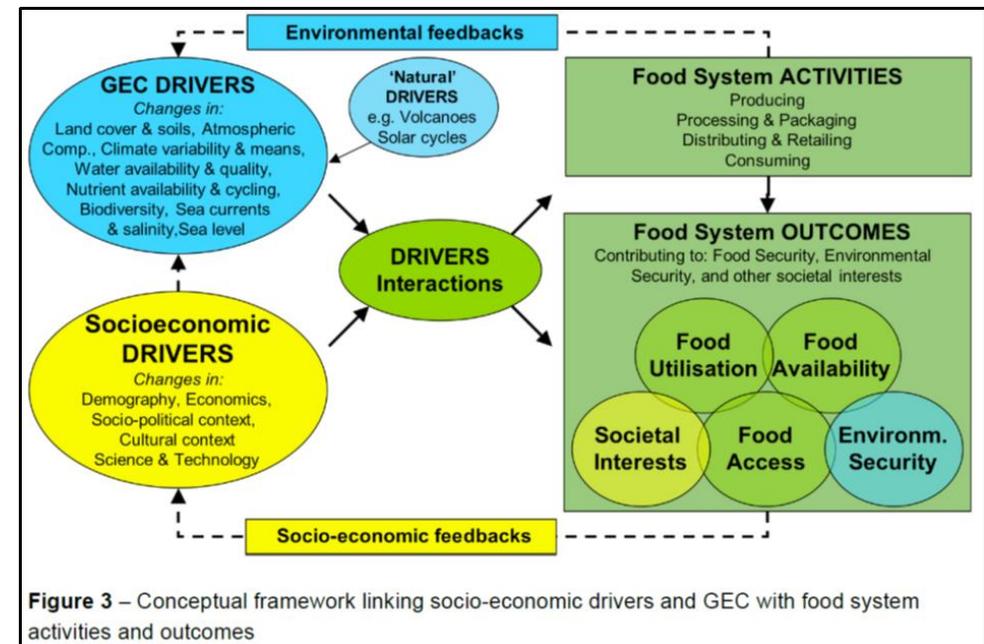
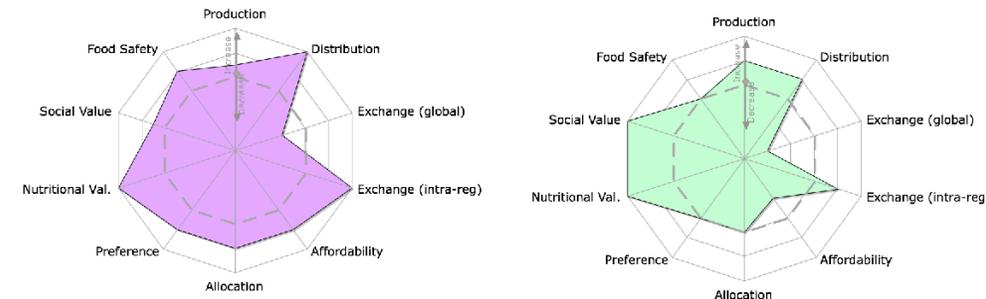


Figure 3 – Conceptual framework linking socio-economic drivers and GEC with food system activities and outcomes

GoLoCarSce/Water-aCCSIS Scenarios

- Employed a mix of methods
 - Literature reviews
 - eDelphi
 - Workshops
 - Cross-Impact Balance
- Scenarios developed and linked to global SSPs
- National storylines were developed
- Second workshop to refine the storylines and identify inconsistencies

GoLoCarSce/Water-aCCSIS Scenarios

“Cool Runnings”

In 2050 globalisation persists and regional integration thrives with Trinidad and Jamaica being the leaders in external trade from the region. The role of government is significantly reduced and private-public partnerships dominate the provision of social services such as health, education and transport. Economic growth throughout the region is moderate with foreign investment facilitating many new projects around the region. Despite the upward trend in economic growth income inequality contributes to the challenge of reducing poverty. The region has an energy mix of fossil fuel and renewable energy consumption however, renewable energy has a larger and growing share in the market. Although there is growing acceptance of renewable energy economic prosperity is paramount and environmental issues are raised only when (i) crisis occur and environmental policy is usually reactive to major events or (ii) when there is economic viability to exploit natural resources for profit.

GoLoCarSce/Water-aCCSIS Scenarios

“Island in the Sun”

Over industrialization and mass levels of pollution from the major economies cause a drastic shift in lifestyles aimed at reclaiming the earth’s natural state. This revolution sparks rapid investment in renewable energy. Globally, it has been mandated that all countries conform to the use of renewables and this change promotes large multilateral funded projects centred on renewable energy. The Caribbean is fully integrated and its energy production is driven mainly by renewable energy sources. Health and wellness tourism are key sectors in the economies in addition to the recycling and reuse industry. Throughout societies there is shift away from the “need” for material wealth and possessions with greater emphasis on physical and mental well-being. Traditional parliamentary systems exist however, within a regional agenda. National agendas are aligned with regional mandates as there is a general consensus that green technology, renewable energy and “green” industries are the best option for Caribbean sustainability.

GoLoCarSce/Water-aCCSIS Scenarios

“The Harder They Come”

At the global level regional rivalry is increasing, compounded by weak coordination among global institutions. Protectionist policies are becoming more widely used at the regional and national level with a focus on security and food imports. The Caribbean economies struggle to maintain economic growth, and are characterized by obsolete economic sectors. Many countries have increased demand for foreign goods, this along with slow growth result in high debt levels. Governance is centralized with only political officials and technocrats formally being involved in policy-making. However, technology allows for citizens to organize mass rallies to place pressure on those in power in order to influence policy.

GoLoCarSce/Water-aCCSIS Scenarios

“Pirates of the Caribbean-Paradise Lost”

The collapse of the US economy pushes most of the world into an economic depression. Global institutions have been disbanded due to high distrust between countries and border security is critical to protecting limited resources. Before the collapse of countries were focused on reaching new “global commons” however, after the meltdown, investment shifts towards military and defence budgets. The worsening economic performance of the rest of the world negatively impacts the Caribbean economies. Reduced investment and limited job opportunities push many persons into poverty. Increased trafficking of drugs and arms create unstable societies where crime is the main concern for many. Environmental policy is crises oriented rather than proactive and there is little urgency for environmental conservation.

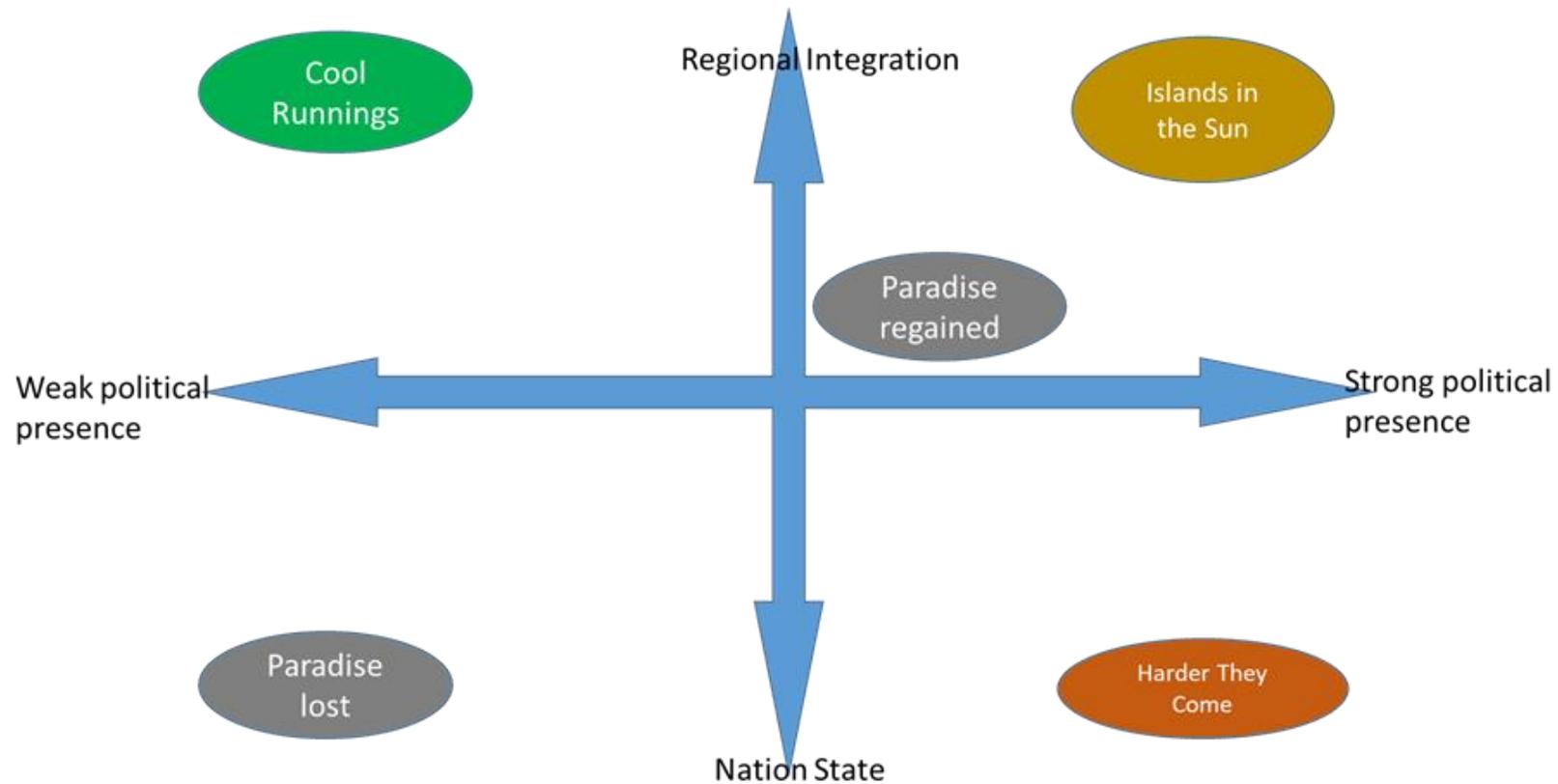
“Pirates of the Caribbean-Paradise Regained”

The economic depression negatively affects the Caribbean economies however, the crisis creates the necessary expediency and political momentum for regional integration to become a reality, with rapid moves to economic and political integration. Public investment at both a regional and national level focuses heavily on security. These efforts, through strong regional coordination keep the worst excesses of crime at bay, although the heavy financial investment that is required in this area slows improvements in other social services such as health and education. Governance is relatively transparent with a regional focus and acts of corruption occur infrequently but are policed and sanctioned severely. Caribbean societies start to move together due to stronger regional ties, with Trinidadian and Jamaican cultural influence predominating through the strong economic, and political power, that they hold.

GloLoCarSce Scenarios

Here's a video on the scenarios developed

<https://www.youtube.com/watch?v=5yXlxl4veA&t=2s>



Downscaling 'Cool Runnings' to Carriacou

- water governance arrangements

Governance	Institutional Framework Public Private & Civil society Regulation, service provision, coordination and capacity building	Enabling Environment Laws Policies Financing	Management Instruments
Rule of Law	Generally the rule of law is observed as social and economic stability is an essential part of the functioning of the economic system. There is provision for judicial review under certain circumstances. The continuation of cabinet style rule means that parliamentary oversight is limited and there are few formal review mechanisms e.g. parliamentary committees of inquiry.	There are fines and penalties for poor performance of all parties and these are enforced. The use of ICT and AI has meant that many of these are generated automatically. Much of the 'thinking & argumentation' will be carried out by machines.	EIAs & Planning Oversight Boards are a feature. There is a set of regulatory reporting requirements which are complied with e.g. provision of investment plans, responsiveness to complaints. There are processes for appeals against penalties but these are not very efficient or effective.

Socio-economic background

Agriculture has moved away from broadly subsistence to commercial agriculture employing fewer persons. Commercial agriculture includes agro-processing to add value to crops. Whilst there is some livestock farming this has become a marginal activity and the focus is on crop cultivation. This is conducted on a large scale in areas that have been designated as agricultural development areas, undertaken by a few operators. This form of agriculture makes use advances in seed technology as well as developments in ICT, automation and greenhouse technology. A high degree of agro-processing takes place within a small number of facilities as well as some artisanal products. Though the agricultural products supply the local market the majority, being specialised food products are for export.

Water supply

The provision of water supply services is undertaken by a private sector provider under a long-term public-private partnership agreement. The provider not only supplies water but also provides a range of services around the optimisation of water use. Although rainwater harvesting still forms a part of water supply options, the water supplier has operational responsibility for it and controls its use.

Policy implications

There would have to be a divesting of responsibility for service delivery though not asset ownership from the state to the private sector. Underpinning this would also have to be legal protection against arbitrary actions of the part of the state that would interfere with the commercial provision of service.

Latin America and the Caribbean 2030: Future Scenarios (IDB - 2016)

- Uses findings based on the International Futures forecasting system enhanced by qualitative insights
- Explores past development trends to understand interactions that drive development outcomes. Poses questions:
 - What will global growth look like?
 - How will changes in international trade affect the region?
 - Will and imbalanced world drive Latin America apart?
 - How resilient are Latin America's democracies?
 - Will Latin America take on much needed but delayed social and economic reforms?
 - How will governments respond to an increasingly complex and competitive global economy?
 - How will countries respond to climate change?
- Critical trends:
 - Demographic shifts (including urbanisation);
 - Human development (including health and education);
 - Sticky economics (growth, the middle classes, labour informality, commodities)

Latin America and the Caribbean 2030: Future Scenarios (IDB - 2016)

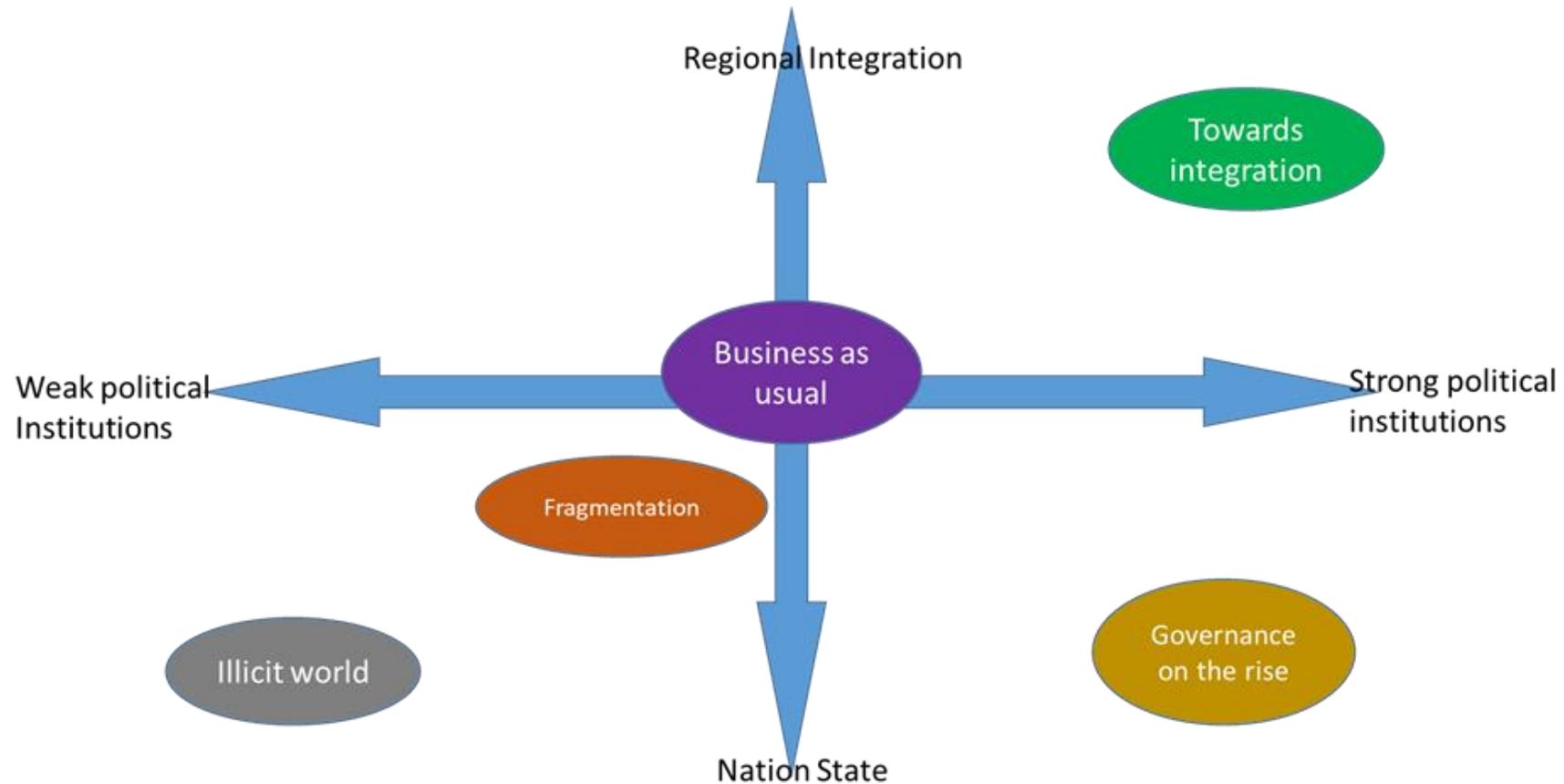
Developed 3 major scenarios, 2 corollary scenarios and a vignette on climate change

It identifies five themes to shape the future:

- Strive for resilience;
- Build and inclusive society;
- Create a dynamic, innovative economy;
- Prioritise green policies, and;
- Embrace democratic norms.

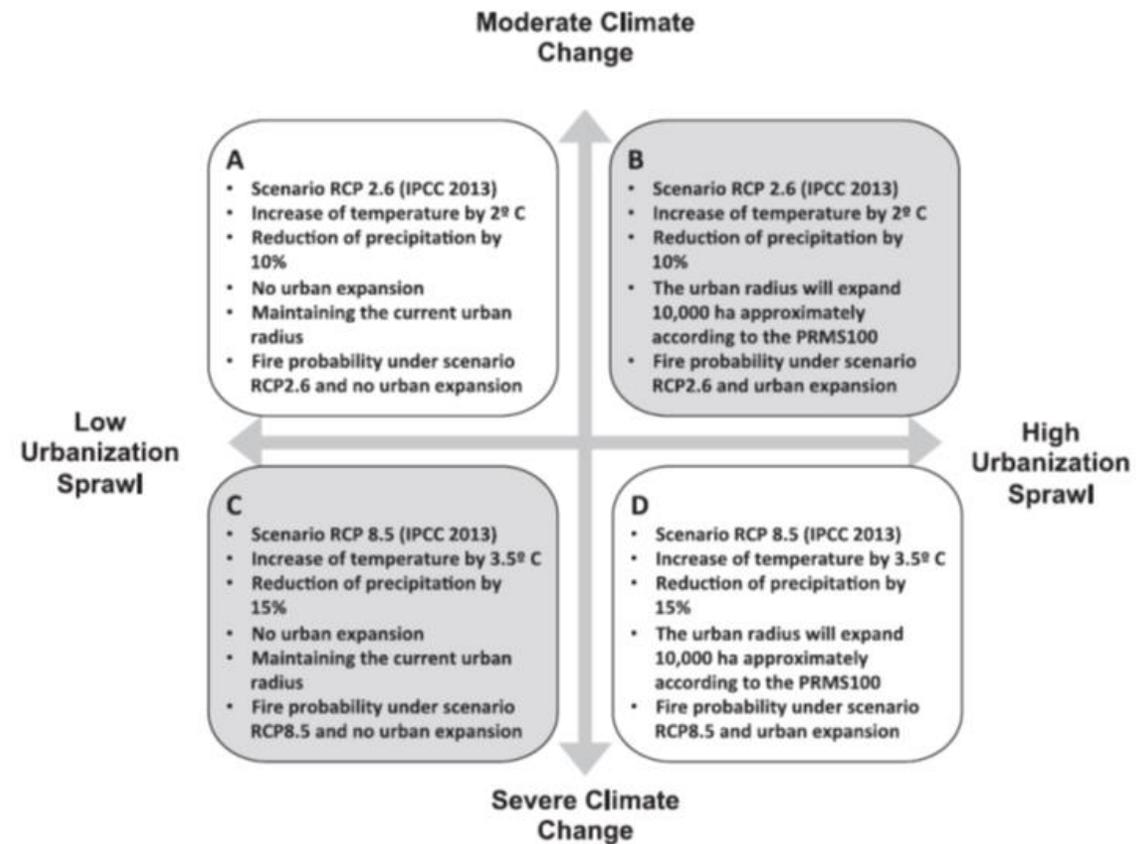
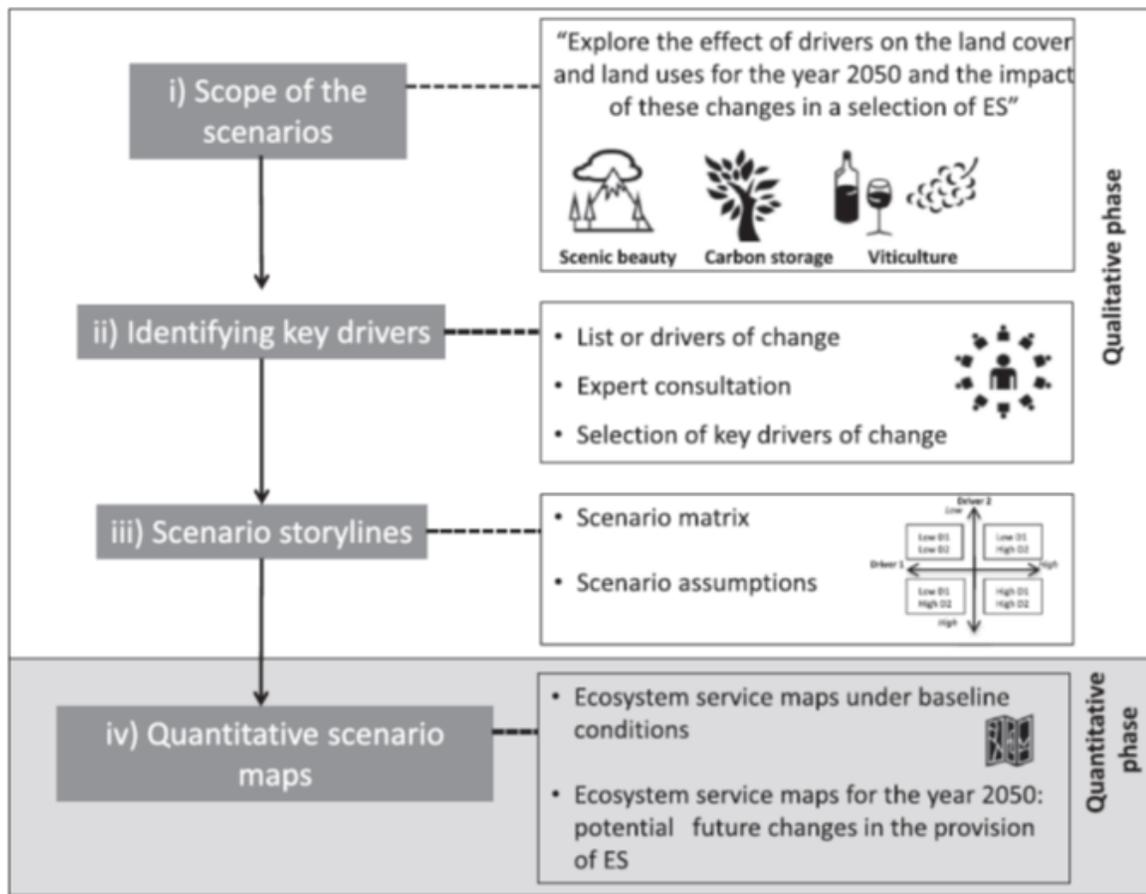
<p>Muddling Through is major scenario where both the global and regional systems play out along a path consistent with their historical development. In essence, it's the base case. This is a starting point for examining how the future of Latin America and the Caribbean might unfold. This scenario considers governance, regional integration, and how the region adapts to climate change as possible key ingredients for success—or failure. Among its findings: The share of people defined as middle class increases by 57 million to reach 345 million by 2030.</p>	<p>The Illicit World Afloat corollary scenario, in contrast, imagines an erosion of governance. Corruption is pervasive and weakened rule of law reduces state capacity, paving the way for global crime syndicates. Insecurity drives a brain drain, while foreign direct investment falls. One result: Foreign direct investment shrinks by more than 50 percent.</p>
<p>Governance on the Rise, another major scenario, imagines how strengthened democracies across the region might enact politically difficult but necessary reforms. It focuses on the central role the middle class plays in pushing governments to enact these reforms. The scenario also dissects the economic and social benefits that accrue with greater government transparency, stronger institutions, and increased social accountability. Here, the regional economy grows by an additional 7 to 10 percent.</p>	<p>The Fragmentation Prevails corollary scenario considers how a globalized world might continue to pull the region's countries toward different economic, political, and social poles. In following this path, the level of exports declines by \$200 billion annually.</p>
<p>The Toward Integration major scenario explores a future in which regional integration leads to better economic performance. It examines the impact of integration largely in terms of increased investment in infrastructure and human capital, but also considers collaboration among countries in finance and energy integration. It assumes infrastructure investments will reach nearly 5 percent of gross domestic product (GDP), with the result for Central America being a jump in GDP by over 9 percent.</p>	<p>The Climate Change scenario vignette imagines a future in which the region experiences the inevitable consequences of climate change. However, it also envisions an opportunity for Latin America to become the world's bread basket and the global green leader.</p>

Latin America and the Caribbean 2030: Future Scenarios (IDB - 2016)



Scenarios for land use and ecosystem services under global change (Chile 2017)

- Focused on Central Chile as a region experiencing rapid transformation from natural landscapes to urbanization and agricultural development.
- Key drivers of change were identified as climate change, urbanization, and fire regimes.
- Scenarios were developed to assess the combined effects on carbon storage, wine production, and scenic beauty for the year 2050
- Four main steps for building scenarios:
 - Define the scope and the focal question
 - Identify the key drivers
 - Construct qualitative scenario storylines
 - Quantify and map the provision of ecosystem services



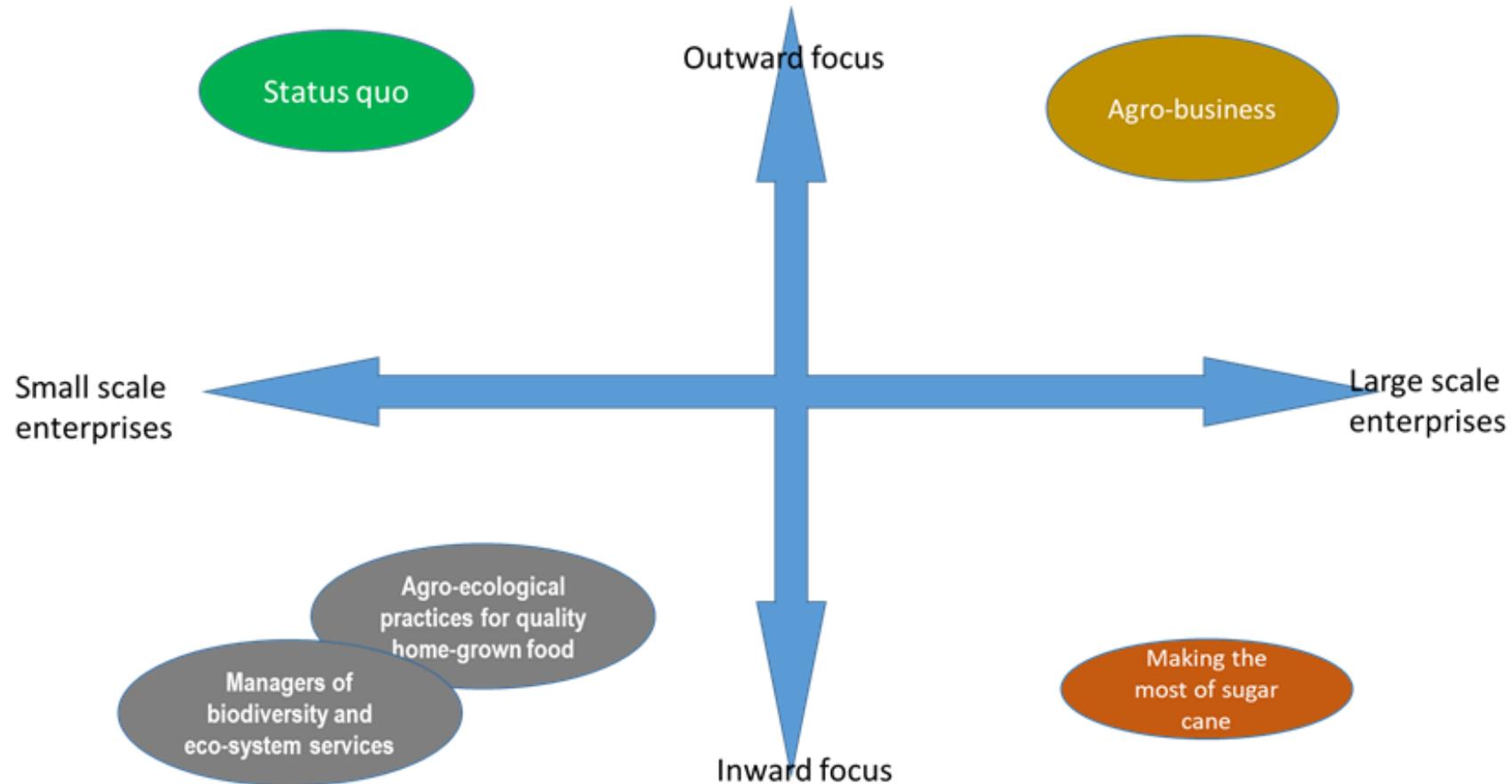
Scenario storylines according to climate change and urbanization drivers. All scenarios were implemented with and without fire

Fig. 2. Methodological framework of the scenario building process.

Designing Guadeloupian agriculture in 2040

- This study (translated from the original French) focuses entirely on the development trajectories of agriculture on Guadeloupe. Five scenarios are described, interpreting their focus they are either focused on an export market or satisfying internal demand – to varying degrees of import substitution and also on the relative size of agricultural holdings. The five scenarios are:
 - The status quo: declining agriculture and increased dependency,
 - The end of peasant farmers, as agro-business thrives,
 - Making the most of sugar cane! Multi-functionality and quality form the basis of rural development,
 - Managers of biodiversity and eco-system services, and
 - Turning towards agro-ecological practices for quality home-grown food.
- The last two share many similarities but differ in their overall objective, in the case of Scenario 4 the focus is on biodiversity whilst Scenario 5 focuses on public health and well-being. In terms of the mapping they are almost identical, the difference would be in the policies that support them.

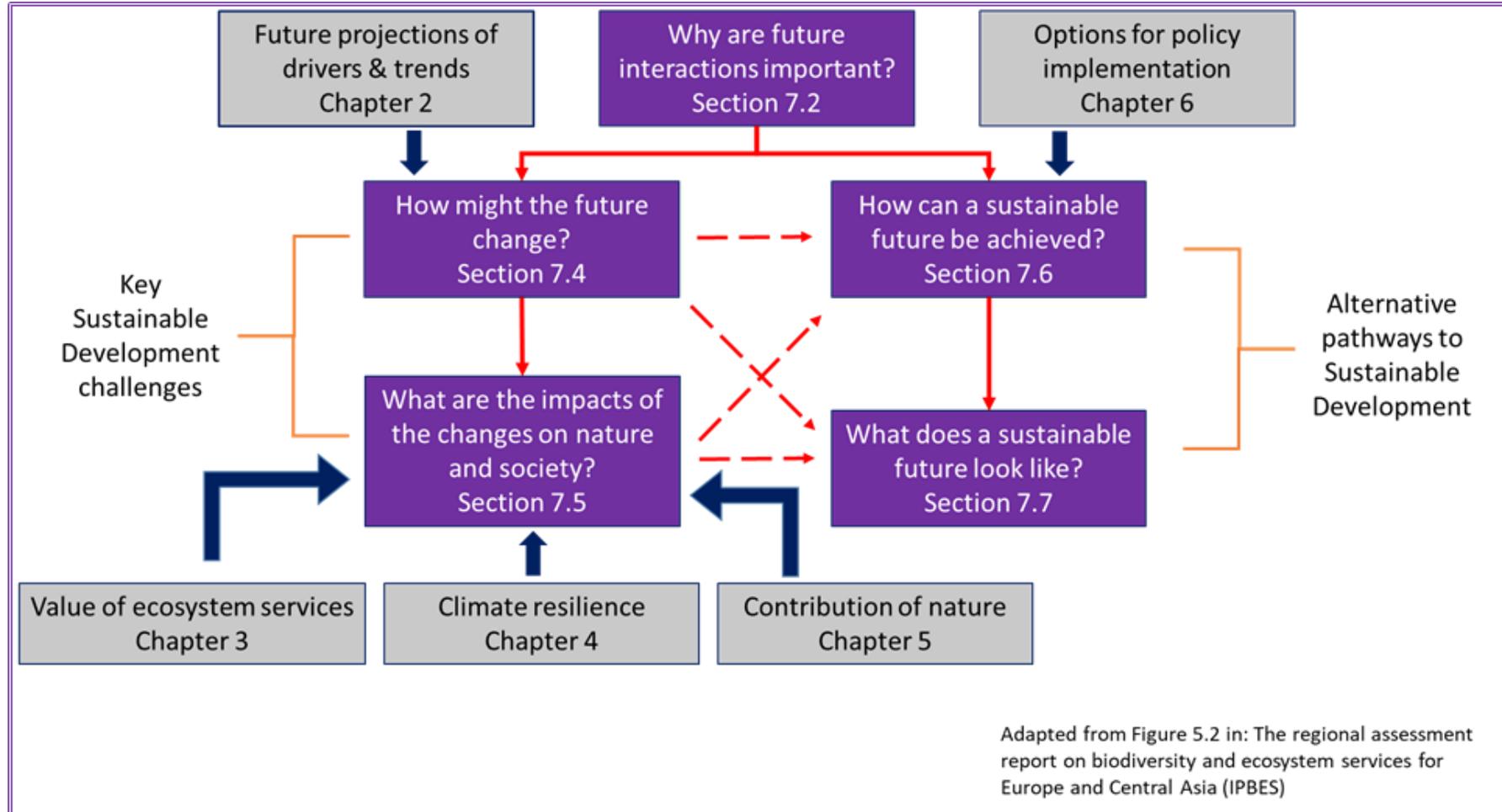
Designing Guadeloupian agriculture in 2040



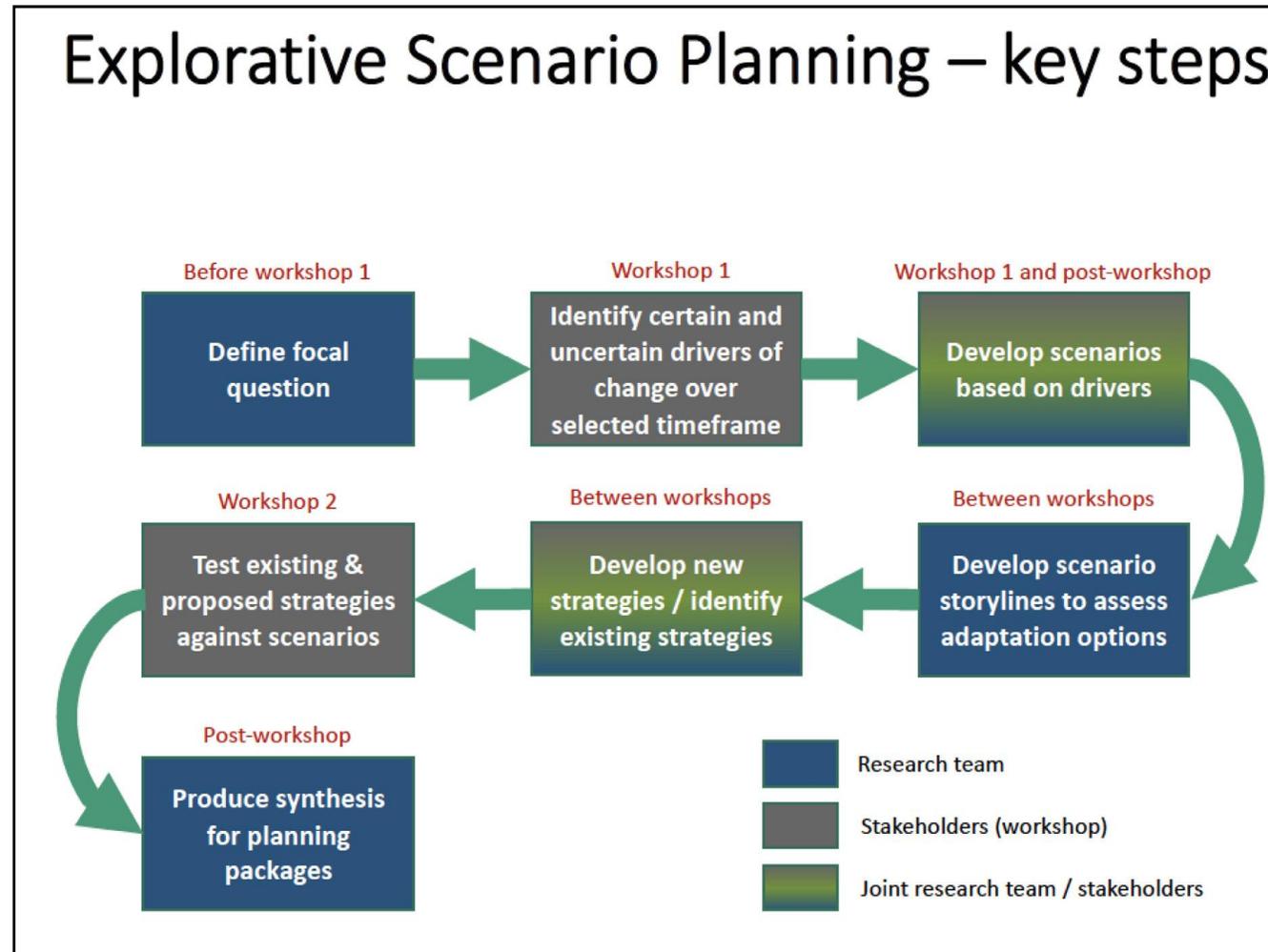
Discussion break

Reaction to the case studies

Input from other chapters



Process of scenario development



Key Questions for Chapter 7

- Time horizon? 2050 - 2070

“What would be the contribution of biodiversity and ecosystem services to the economy and social wellbeing of Grenada under different scenarios”

- What policy areas might we address this question to and how should we decide?

-
- | | |
|-------------------------------|----------------------|
| • Coastal & marine ecosystems | • Health & wellbeing |
| • Terrestrial ecosystems | • Tourism |
| • Water & food security | • Energy |
| | • Case studies |
-

- What approach to scenario development should we consider?
- What process of scenario development could we use?

Key Questions for Chapter 7

- Role of the writing team
 - Developing the drivers
 - Participation in workshops
 - Developing story lines
 - Assessing policy implications
- Way forward

Recap

- Revisited some of the key aspects of foresight scenario building
- Introduced to the idea of congruent-consistent-coherent-complementary scenarios
- Gone through examples
- Given some thought as to the way forward.

Questions – Comments – Thoughts - Suggestions



That's all folks

