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Foresight Manual

Empowered Futures for the 2030 Agenda

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Foresight Manual

Empowered Futures for the 2030 Agenda

UNDP Global Centre for Public Service Excellence
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Foreword

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If, as Dickens' David Copperfield remarked, dreams are dress rehearsals for the future, the vision of the 2030 Agenda for Sustainable Development promises a bright future indeed. Intensely ambitious, the 17 Sustainable Development Goals speak of fundamental change. The spoils of human progress and economic growth will be shared fairly by all. Poverty will be eradicated and the planet protected *"from degradation, including through sustainable consumption and production, sustainably managing its natural resources and taking urgent action on climate change"*.[1]

Regardless of our dreams, however, the world is already transforming at neck breaking speed. The great disruptive forces of the 21st century, like technological innovation, ever increasing flows and networks of trade, finance and people are creating radically new future realities. The World We Want will be realized, not in The World We Have, but in The World We Will Get.

The world in the 21st century is, in many ways, incomparable to previous ones. The past only provides limited blueprints for how development will look like in the Anthropocene Age, in which climate change will radically disrupt our conception and prioritization of (to name just a few) food security, migration, economic growth and security. Technological innovation such as robotics, the Internet of Everything, Artificial Intelligence, will force us to fundamentally rethink what 'decent work, 'quality education' and even 'strong institutions' will look like in 2030. The list goes on and on. It is fair to say that there is an equal need to radically reframe what 'development', as envisioned by the 2030 Agenda, will actually mean in the volatile reality of the 21st century.

Governments looking to turn the ambitious 2030 Agenda into concrete results for their citizens are therefore poorly served by the 'used' futures from the past. They require innovative tools to ideate, shape and realize their own future, leveraging emerging opportunities and minimizing risks.

Foresight is such a tool. It enables public planners to use new ways of thinking about, talking about, and implementing strategic plans that are compatible with the unfolding future. Foresight is a critical capacity of those parts of government responsible for strategic decision-making, strategic management and, crucially, policy coherence.

GCPSE has developed, tested and scaled up a foresight approach that fits the particular context and circumstances of government in developing countries. This *Empowered Futures* framework aims to strengthen local capacities to apply strategic foresight for visioning, strategic coordination, planning and innovation. It builds on existing public service structures, processes and resources in developing countries and promotes the use of foresight in on-going policy cycles which are centered on the formulation of national development plans, and the mainstreaming and acceleration of SDGs in these plans.

The **Foresight Manual – Empowered Futures for the 2030 Agenda** provides a crisp and concise overview of the use of foresight for SDGs implementation. The Manual puts foresight firmly in a development context, emphasizing the importance of foresight capacity in developing countries. It gives concrete suggestions where and how to employ foresight at different levels of the policy cycle, as well as tips on how to effectively use foresight. The Manual ends with a review of the most widely used foresight techniques currently available.

I hope that this Manual will encourage truly empowered futures in developing countries.

Max Everest-Phillips
Director, UNDP Global Centre for Public Service Excellence

1. Resolution adopted by the General Assembly on 25 September 2015, A/Res/70/1

A. Introduction

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Foresight is the umbrella term for those innovative strategic planning, policy formulation and solution design methods that don't predict or forecast *the* future, but work with alternative *futures*. Foresight has been defined as "*a systematic, participatory, future-intelligence- gathering and medium-to-long-term vision-building process aimed at enabling present-day decisions and mobilizing joint action.*"[1] Foresight empowers decision makers and policy planners to use new ways of thinking about, talking about, and implementing strategic plans that are compatible with the unfolding future.

The premise of foresight is that the future is still in the making and can be actively influenced or even created, rather than what has already been decided or enacted in the past by others, there only to unearth or replicate, and passively accepted as a given or 'good practice'.

This is an empowering realisation. Foresight allows governments to construct development narratives of their desired futures in the 21st century, instead of relying on the 'used', 'second-hand' futures from highly developed countries. It enables public service organisations to better frame future policy environments and present decision-makers with more and better choices for inclusive growth and social justice. Participatory foresight breaks with the habit of exclusively relying on (foreign or local) technical experts and invites citizens to participate in discussions and decisions concerning *their* future.

Jennifer Gidley, in her **The Future: A Very Short Introduction** wrote "*For thousands of years we have struggled to predict, control, manage, and understand the future. Our forebears sought advice from oracles; read the stars through astrology; debated concepts of time and future philosophically; wrote utopias and dystopias; and, in the modern scientific era, tried to predict the future by accumulating and interpreting patterns from the past to extrapolate models of the future. But the single, predictable, fixed future that the trend modelling proposes does not actually exist. Instead, what is out there is a multitude of possible futures.*"[2]

Foresight tries to steer a course between the unsettling uncertainty and unpredictability of the future and the need for data, information and intelligence to shape this future, without resorting to wishful thinking, prophecies, predictions or forecasts. Some of its assumptions are captured in the box below. Foresight cultivates crucial skills such as cross impact analysis and synthesis, systems thinking, windtunnelling, and planning for long-term and deep uncertainties. It is based upon a range of skills: situational awareness to possible, probable and preferable futures; a pro-active scanning of the horizon; an ability to sort, sift through and combine open, real-time and emerging data and the creation of tight feedback loops. It entails the exploration of possible scenarios and pathways, the identification of future risks and opportunities, and the systematic rehearsal of potential responses.

1. Miles, Ian, Saritas, Ozcan and Solokov, Alexander, Foresight for Science, Technology and Innovation, Springer Switzerland 2016, p.12

2. Gidley, Jennifer M. The Future: A Very Short Introduction (Very Short Introductions) (p. 2). OUP Oxford. Kindle Edition.

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.

This Manual is intended for decision and policy makers in developing countries and for development organisations interested in applying foresight methods to their policy, planning and innovation efforts. The first chapter describes four specific applications of foresight for the *2030 Agenda for Sustainable Development*. Chapter two gives some practical pointers and caveats for those initiating a foresight process. The third chapter provides some popular frameworks to conceptualize foresight events and gives a first glimpse of the many foresight methods available. The fourth chapter, lastly, gives an overview of some of the foresight methods that are currently in use. This overview does not claim to be complete or comprehensive; a quick internet search would throw up many more. The methods selected and presented, however, in combination with the preceding chapters, will enable governments and organisations to formulate and shape a successful foresight for development process.

For a more in-depth introduction to foresight, see the UNDP GPCSE's publication, *Foresight as a Strategic Long-Term Planning Tool for Developing Countries*[3]

PELS Ted Eytan

OnInnovation Michelle Andonian

3. Available at: http://www.undp.org/content/undp/en/home/librarypage/capacity-building/global-centre-for-public-service-excellence/Foresight.html

B. Empowered Futures for the SDGs

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In September 2015, world leaders gathered in New York for a unique visioning event. The UN Sustainable Development Summit adopted *Transforming our world: the 2030 Agenda for Sustainable Development*, also known as the Sustainable Development Goals (SDGs). The 17 SDGs encapsulate the global vision on how the world could look like in 2030. It proposes that the spoils of human progress and economic growth be more fairly shared by all, poverty be eradicated, governance be improved and the planet protected from degradation. The empowering nature of the visioning process was captured by the slogan 'The World We Want'.

Much of the success of the 2030 Agenda for Sustainable Development will depend on the ability of national and sub-national public service organisations to turn words in tangible results for all citizens. That is not a given. Public administrations in both the developed and developing countries are facing stubborn capacity constraints.

The reality of the 21st century presents additional challenges, in particular:

1. The **complexity** of development issues and the need to produce integrated policy results;

2. The **volatility** and **uncertainty** of the policy implementation environment and the requirement to be resilient and adaptive, and;

3. The changing **nature** of the **relationship** between state and citizens and the demand for more citizen involvement.

Governments need practical tools and 'space' to experiment, learn and adapt to deal with the challenges of SDGs implementation in the volatile reality of the 21st century. The core characteristics of classical public administration are rationality, predictability and hierarchy. Many of its structures, procedures and outputs are based on these principles. Complexity, uncertainty and a demand for meaningful citizen engagement are profound challenges. 'Foresight', with its proven track record and fit in bureaucratic structures, is emerging as an essential addition to conventional planning and policy tools.

The *four* major areas where foresight can make an important contribution to the work of public bureaucracies in SDGs implementation are presented in further text.

1. Alignment of Development Visions

The SDGs (goals, targets and indicators) capture the *global* vision on development in 2030, a negotiated common ground between different development aspirations, priorities and interests *among states*. 'SDG alignment' requires an additional process of 'nationalizing' of the global development vision, in which a broad consensus among national actor on development aspirations is agreed upon; an aspirational national development vision formulated, and; 'local' targets and priorities specified. In the cases where such a national development vision already exists, there will be a need to reconcile the *visions* before any meaningful planning action can be taken. The introduction of the 2030 Agenda might also provide an impetus to

update or improve existing national development strategies.

Public service organisations play an important role in the key processes of vision building.

- In their official capacity, public servants supply politicians with *technical expertise*, often framing what visions of the future are deemed to be 'feasible' and influencing what is prioritized.
- Public sector institutions also function as *intermediaries* between state and citizens and have access to information on citizens' current concerns and needs.
- Civil services combine robust organisational power with structures that deeply penetrate society and can rapidly identify, mobilize and facilitate key stakeholders.

Many bureaucracies, however, lack mechanisms, processes and methods for the kind of engagement that development visioning requires and citizens demand.

The bureaucratic consultative processes can be limited in terms of active engagement (once-off), restrictive in terms of participation (either for ideological or practical reasons), or poor in terms of incorporating recommendations (if they diverge from the expert consensus). Foresight provides a rich repertoire of methods to have realistic but aspirational *deliberations* about the preferred future. These methods provide a platform and a structure for different 'voices' and perspectives to have a meaningful conversation with each other and to produce a document that cannot be ignored.

2. Anticipatory Governance and Strategic Management

The vision of the SDGs is aware and explicit about the complex, interrelated and uncertain nature of the world. During the post-2015 Development Agenda deliberations alone, governments and communities had to deal with the fall out of calamitous events such as the Global Financial Crisis, the Arab Spring, the Refugee Crisis and the Ebola Epidemic. The disruptive potential of global trends, such as urbanization and changing demographics, slowly moved from the periphery to the centre of discussions. But the exclusion of 'slow onset shocks' such as antibiotics resistance, which surfaced after the formal adoption, indicates that the 2030 Agenda only provides limited insights in what the future has in store, beyond 'the world we want'.

Government must explore and anticipate what 'healthy lives', 'quality education', 'economic growth and jobs' etc. will look like in 2030.

- What possible health threats will there be in 2030? What type of education increases the chances for what kind of jobs in 2030?
- What sectors will produce economic growth in 2030, and which not?
- On what kind of markets, and which market mechanisms, will national food security in 2030 depend?
- How will the four disruptive forces of the early 21st century – urbanization, technological innovation, ageing population and global flows of trade, capital and people – impact all 17 Goals?

Foresight enables governments to anticipate some of these emerging trends and to evaluate the implications and impact of their policies under different circumstances. By doing so, foresight helps leaders make better decisions and regain a sense of direction over the future of their nation.

3. Resilient Policy Planning

The SDGs are being implemented in an increasingly volatile, uncertain, complex and ambiguous environment. Globally, governments are experimenting with planning tools that allow for change, complexity and uncertainty. Classical planning methods, with their emphasis on predictable, gradually unfolding, unambiguous change, have been found wanting to deal with the inevitable changes, disruptions and shocks that will happen between 2015 and 2030. Government agencies are often slow to detect the increasing irrelevance of policies, and inattentive to promising opportunities until they have passed by. SDG implementation will require a tool to make classical planning more resilient in the unfolding future.

Foresight is emerging as one of the approaches to infuse classical policy planning with a manageable dose of uncertainty and unpredictability.

Several governments in developing countries use scenario planning to identify risks and opportunities in future policy implementation environment. These scenarios often explore the possible impact of key global or local trends (for example fluctuating energy prices or changing

demographics) on important policies and produce recommendations for policy adjustments or enhancements. Another popular foresight application in a planning context is 'back-casting', in which policy planners work backwards from a 'preferred future' (a vision or a goal) through different implementation scenarios, picking the most 'resilient' path for the policy.

These and other foresight methods are a major contribution to make policies 'work' in society. Foresight not only imbues classical planning with a more comprehensive risk assessment, it also highlights the (unexpected) opportunities and requires adjustments to existing plans in the here and now. SDGs policies will therefore become more 'resilient', that is, effective in a range of different circumstances. By collaborating on foresight with other stakeholders, such as communities, businesses and academia, government agencies can become more attune to the distributed knowledge inside the wider environment, leverages imaginative use of technology and 'sense signals' of emerging change.

4. Policy and Public Services Innovation

The successful implementation of the 2030 Agenda will require innovative policies and public services. The speed of technological innovation, the mobility of people and ideas, the concentration of human activity in large urban centres is changing the way governments and citizens relate and interact with each other. These trends (and many others) are generating a new kind of public space, where co-design, prototyping and collective action create innovative (public) goods and services. In many countries around the world, public service organisations are engaging with policy and service innovation.

There is a comparatively long history of the use of foresight in identifying opportunities for scientific and technical innovation. The first generations of foresight in government from the 1950s and 1960s tried to forecast the next big thing in science or technology (often spurred on by military necessities in the Cold War.) The strength of this tradition is clear from a recent UNCTAD report on the use of foresight in SDGs implementation, in which the researchers exclusively looked at those institutes around the world that focused only on science, technology and innovation.

Recently, foresight has been coupled with a new wave of technological, social and public innovation, creating an electrifying new field of application.

Public officials, citizens and entrepreneurs team up in 'social innovation labs' to do a 'quick-and-dirty' exploration of alternative futures, with the creative aim to reframe problems in surprising new ways and to identify high-leverage entry points for innovation. These typically concern short-term cycles, in which the potential of opportunities is tested through prototyping and leveraged by scaling up.

The Empowered Futures Initiative

UNDP Global Centre for Public Service Excellence (GCPSE) has been responding to a growing number of requests from governments from developing countries to strengthen their capacity to productively apply foresight methods to abovementioned areas. Now, to offer a systemic method of support with a focus on SDG implementation, GCPSE has established the' **Empowered Futures Initiative** (EFI).

EFI
EMPOWERED
Futures Initiative

EFI promotes the use of foresight by government in developing countries.

It focuses on foresight for SDGs, foresight for cities, foresight for technological innovation in government, and foresight and the changing state-citizens relationship.

EFI partners with foresight partners around the globe to strengthen the capacity of government to apply and tailor foresight to their strategic, planning and policy needs.

C. Doing Foresight Well

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There are many foresight methods that span the gamut from long-term processes and quantitative data collection/analysis to participatory workshops and qualitative assessment of narratives. Some foresight methods have been widely tested, others less so; some are already practiced in many government departments and others are less known. It is worth remembering, however, that dealing with futures through foresight is not a panacea. There are some common pitfalls in foresight, which might turn into weaknesses if not properly addressed.

From the outset, all 'participants' must be clear about what foresight is and isn't, what it can and can't do, and how it can be used and abused.

- Foresight is not a universal cure to all planning ills.
- Foresight is not a substitute for traditional planning.
- Foresight is not an excuse to skip the hard work necessary to realise the desired future.
- Foresight does not provide an alternative to tough structural choices for organisations to become more adaptable and thorny political decisions for societies to become more 'developmental' and inclusive.

Foresight enhances existing policy and planning methods by broadening our horizon; by enabling development innovation and transformative efforts in an uncertain and unpredictable reality; by opening up space for other stakeholders in the future and by offering a platform to start negotiating values, perspectives and vested interests right from the beginning of our response to or initiation of change.

Innovation Centre, NTU-Singapore Christopher Adams

Foresight is not easy. People's habits of thinking about the 'future' run deep. Humans have a cognitive and social bias to deny change and cast reality in familiar categories. Age-old cultural belief systems, in which a given future is unfolding or the past is eternally repeated, are always lurking in the back. Powerful social processes, such as hierarchy and 'groupthink', shut out alternative views. Experts doggedly protect their prediction monopoly on which their status depends.

As a result, foresight exercises sometimes struggle to get beyond '*the* future' and move on to 'futures', fail to produce new, transformative insights, and leave people and organisations stuck in the 'old' approach of producing the 'used future'. Hence, foresight activities need extensive preparation, including development of non-directive illustrations of 'futures' thinking, selection of methods that emphasise and stimulate creativity (e.g. 'games', 'wild cards', etc.), and identification of strategies that ensures an 'equal playing field'.

Foresight should not become forecasting that extrapolates past data into the future and focused predominantly on feasibility, as seen from the current vantage point.

Instead, we should "pluralize" the future by entering into the whole broad space of possible futures and then recognize the legitimacy of different stakeholders' to have their own future perspectives and aspirations.

The Three P's of Foresight

'Fully-fledged foresight' (as in distinctive from strategic planning, forecasting, risk management, etc.) is **prospective**, **policy-related** and **participative**:

1. **Prospective**. Foresight is decidedly future-oriented. It is concerned with gathering genuine information, knowledge and information about future realities ('emerging' and 'emergency' data), as opposed to simply projecting 'old' data, assumptions and 'hindsights' from the past into the future. Foresight probes the impact of change, shocks and disruptions on future 'realities' in a rigorous, systematic and, in as far as that is possible, unbiased manner. Foresight involves examining and forecasting mid- to long-term change of key factors and drivers and their interaction, creating and appraising integrated and coherent scenarios of (possible, probably, desired, undesired and 'wild-card') future realities, identifying the (strategic/implementation/innovation) opportunities and challenges, and the capacities and actions required.

2. **Policy-related**. Government foresight is integrated in existing policy making processes, structures and timetables, as opposed to be supplied by external parties with their own particular concerns and deadlines. Foresight is sponsored, championed and driven by influential political or administrative actors, 'rather than being ivory tower or outsider analysis'. Foresight uses the longer-term perspective of **strategic planning** and mid-term approach of **policy planning**, connects and integrates compartmentalized lines of results ('**strategic management**') and action ('**policy coherence**'), and increases **anticipatory** and **adaptive** capacities to deal with uncertainty, disruption and innovation. At the strategic level, foresight identifies emerging strategic opportunities (and risks), thereby providing a framework for prioritisation of policy interventions. Foresight can be used to foster **partnerships** around shared concerns and opportunities along 'horizontal' (coordination across policy areas) and 'vertical' (between public, private and civic actors) lines.

3. **Participative**. Foresight accepts and welcomes the fact that in uncertain and complex environments, relevant knowledge is distributed is the wider system, as opposed to being centralized in technocratic or academic settings. Foresight depends on the participation of a broad range of **cognitive perspectives** and the effective use of **collective intelligence** to produce worthwhile images of the future. The **enlargement** of the knowledge base avoids 'groupthink' and the regurgitation of the 'used future' (image of the future derived from the past). The **engagement** of non-traditional actors in foresight

Purpose	Format	Methodology
• To "predict" the future and the impact of current trends • To identify alternative futures and create new strategies for reducing risks and developing resilience • To create preferred futures and focus on changing the present to nurture conditions for such future to emerge • To support broader participatory dialogue by broadening existing perspectives about the future • To develop future literacy and forward-looking attitudes • To identify opportunities for innovation	• One or several events that will provide input to planning, policy, and/or resource allocation • Systemically integrating foresight process into existing methodologies and practices of strategic planning and policy development so that foresight becomes a regular function and process • One or several events that will support programme or project design, or an innovation initiative • Convening foresight dialogue as a part of a broader consultative and partnership development process to develop shared understanding • Using on-line foresight platforms • Future literacy training as an addition to capacity development programmes	• Use one method vs. combine several • Organize a small group of specialized professionals vs. engage a broad scope of stakeholders • Procure external foresight expertise vs. develop internal one • Use external facilitators vs. internal ones • Focus only foresight vs. integrate it with other collaborative methods (planning, policy, innovation, dialogue) • Develop structured methodology vs. provide guidance and support self-organization

broadens the democratic basis of future visions and imparts legitimacy on the processes and recommendations (as exemplified by the World We Want campaign in the run-up to the adoption of the SDGs; see below). Lastly, by carefully **enlisting** key actors (representing different groups of stakeholders), foresight creates new champions of the process, insights and recommendations and contributes to the necessary change management processes that will follow (for example, adoption strategic agenda, inter-ministerial collaboration, public-private co-design and implementation, etc.).

Organizing for foresight

At the very start, we need to identify the purpose, format, and methodological approach of our foresight activities. The most common ones are presented below – for less ambitious foresight the choice of one for each should be made, but the options can be combined for more advanced foresight methodologies.

Foresight, insight, action

Many foresight exercises suffer from a lack of follow-up. Most planning events struggle with translating strategic insights into concrete action, but foresight has some unique problems. ***First,*** sharp focus, appropriate methods and carefully selected participants generate high quality insights. The mere organisation of a planning event, traditional or innovative, is by itself *no* guarantee for quality insights. As described above, foresight is raising the bar for quality insights even higher, by explicitly exploring alternative futures and by asking people to address their cognitive and behavioural biases.

Second, good action plans can only be derived from high quality insights. There are no short cuts. Many planning events insist on the inclusion of action planning sessions, regardless of the quality of the insights. Foresight events should avoid the temptation to cut corners and move on to action planning too quickly.

It the capacity to remain in the ambiguous, "fluid" state of inquiry for as long as possible in order to prevent "early closure" on solutions, that distinguishes great from mediocre foresight outputs.

Third, organisations usually lack the capacity to act upon the results of foresight activities, especially in terms of translating foresight into strategy. Strategic foresight produces scenarios of alternative futures, agile strategies with sets of alternative policies, and short, non-traditional feedback loops. Many bureaucratic structures and procedures do not allow for the kind of adaptability and flexibility required for implementation of action plans derived from foresight (e.g. budget cycles, work plans with strictly sequenced deliverables, long-term evaluation strategies etc.)

A widespread approach is to use the strategic foresight to "upgrade" conventional strategic planning structures. Many governments have dedicated foresight teams in conventional planning divisions or even in strategy units at prime minister or president offices, which churn out meticulously researched reports on emerging trends and give policy recommendations. More mature strategic foresight structures have moved towards a distributed approach and established foresight teams at individual line ministries, in a deliberate attempt to translate insights into action.

This requires integrating strategic foresight into the existing planning methodologies and practices, as well as changing the existing culture.

D. Different foresight frameworks

This part of the Manual provides an overview of the diversity of foresight methodological frameworks. These are not specific methodologies, but different ways in which foresight can be understood, approached, and implemented. It is by using such frameworks that we start developing a specific design of foresight methodologies. Such methodologies should always combine different methods (as presented in the next section), but they also ought to have a core foresight logic and orientation.

The frameworks presented here indicate different purposes of foresight. Sometimes, in particular when the outcome of foresight is a strategy or a strategic plan, the Generic Foresight Process Framework is most suitable. However, when foresight is integrated into the overall policy process then the FORLEARN framework is better. For policy purposes, we might also need to consider the policy design from the "future present".

It is also important to understand the basics of "future literacy". We may apply a "forward" foresight by looking "into" the future from the present, but sometimes we need to start "from" preferable future and backcast into the present. This also relates to different mindsets to change in foresight (inactive, reactive, proactive, and interactive). Finally, this part provides additional clarifications on what "future thinking" represents (key questions, the Futures Triangle, and 6 pillars), and a way in which different methods can be grouped.

Generic Foresight Process Framework

The Generic Foresight Process Framework represents one of the most comprehensive approaches to strategic foresight. It was developed by Joseph Voros (2000) and his colleagues from Australia. It is further elaborated by Maree Conway in "*Foresight-Infused Strategy: A How-to-Guide for Using Foresight in Practice*" (2016). This framework is used *to design customized foresight methodologies*, but it can also be applied *as a diagnostic tool to evaluate existing foresight initiatives*. However, *it can simply be used to understand what foresight is and what it is made of*.

This framework recognizes **4 very different (but interdependent) phases**

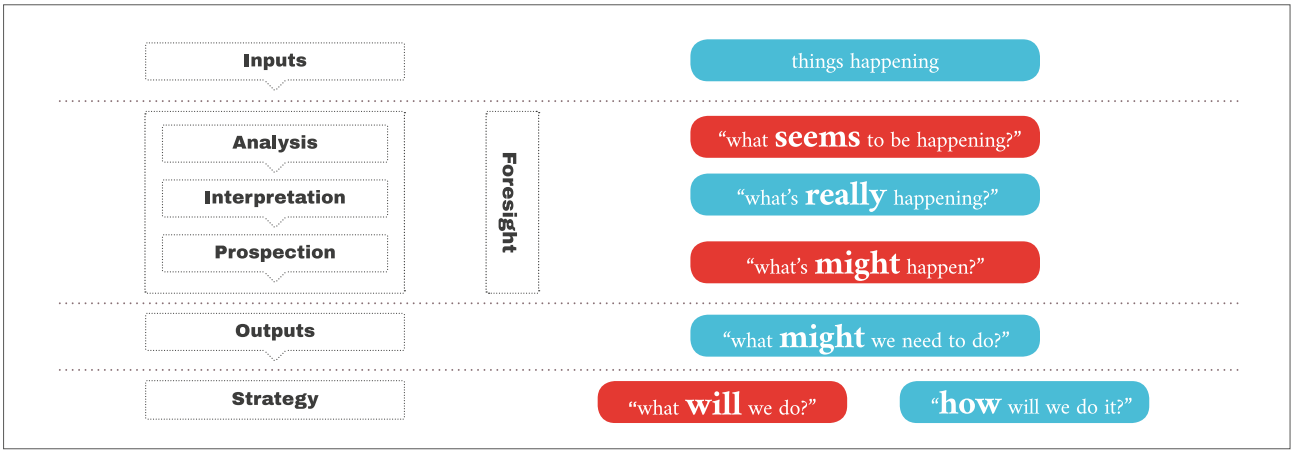
- **Input** (Strategic Intelligence)
- **Foresight** (Analysis, Interpretation, Prospection)
- **Outputs** (Expanded/New Perspectives/Perceptions, or Strategic options)
- **Strategy** (and/or Strategic Planning)

When complete (including all phases and elements), the model looks as presented below (with key guiding questions for methodological design on the right):

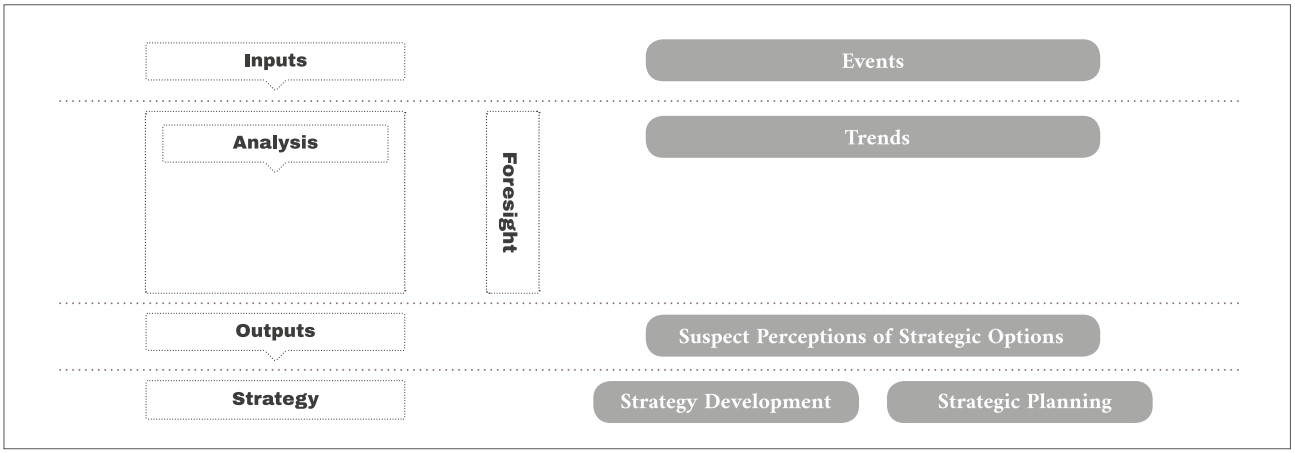
→ See graph 1 (page 16)

Very often, foresight is designed or implemented only partially – with many elements of this generic model missing.

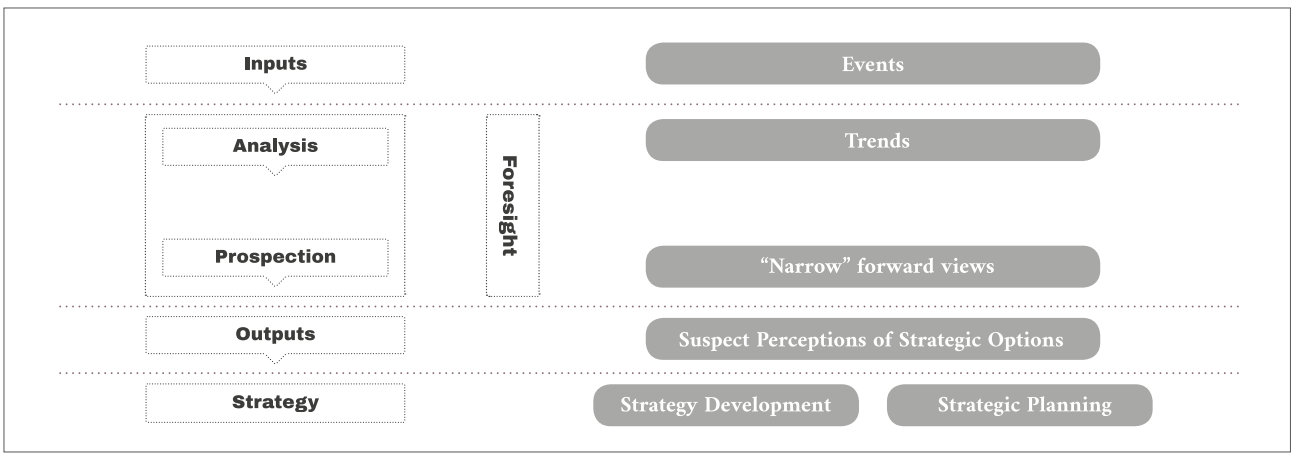
The most incomplete approach is also the most common: the ***"shallow" foresight***. It is the based only on the analysis of trends, and it may often turn out to be mere forecasting. It assumes



Graph 1



Graph 2



Graph 3

that understanding the future is only about collecting and "reading" trends.

→ See graph 2 (page 16)

The second incomplete approach is the ***"narrow" foresight***. It includes prospection (scenarios), but still does not engage in deep interpretation. While it might be sometimes more effective than the "shallow" approach, it is actually riskier because it might lead to a false sense of understanding without core assumptions and beliefs being addressed properly.

→ See graph 3 (page 16)

The only complete approach to foresight is the one that incorporates all phases, including the question of "what's really happening".

This requires the use of systems thinking methods for comprehensive Interpretation - down to the level of "deep system drivers" and "root-causes".

Unfortunately, it is often the case that foresight is not connected to policy, strategy or action at all - it serves no practical purpose and remains an exercise in imagination. This might be a good approach for learning, but does not provide actionable follow-up.

Foresight for Policy

The EU project – FORLEARN – proposed recommendations (Da Costa, et all, 2008) on how foresight might be used more effectively for policy making. Amongst other, it is argued that there is a "bottle-neck" in the process of advising policy from foresight, as represented below:
In terms of how foresight can be used in policy making more effectively, 6 functions of foresight in policy are proposed:

1. Informing policy:
Generating insights regarding the dynamics of change, future challenges and options (along with new ideas) and transmitting them to policy-makers as input to policy conceptualisation and design.

2. Facilitating policy implementation
Enhancing the capacity for change within a given policy field by building a common awareness of the current situation and future challenges, as well as new networks and visions amongst stakeholders.

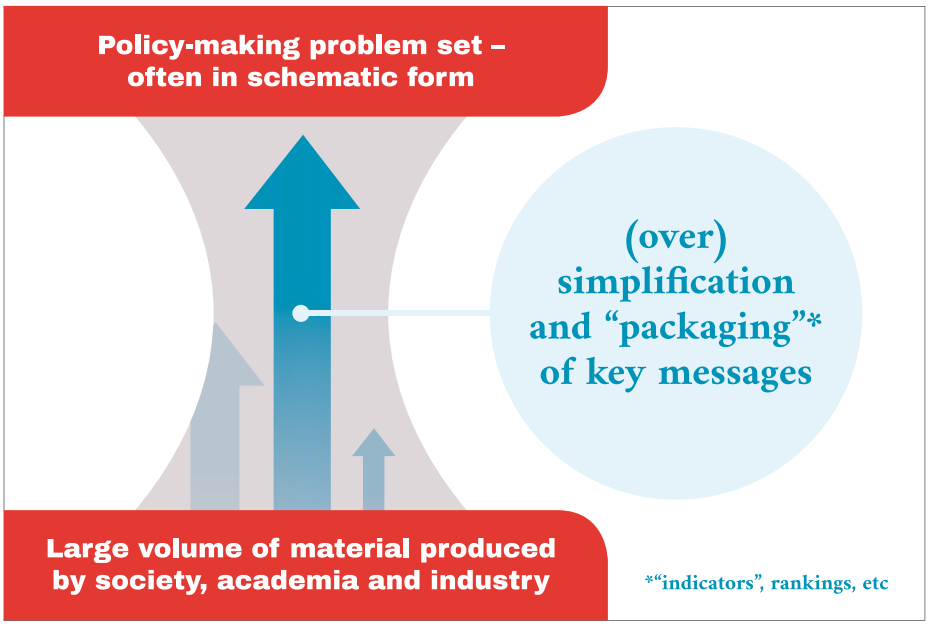
3. Embedding participation in policy-making
Facilitating the participation of civil society in the policy process, thereby improving its transparency and legitimacy.

4. Supporting policy definition
Jointly translating outcomes from the collective process into specific options for policy definition (and implementation).

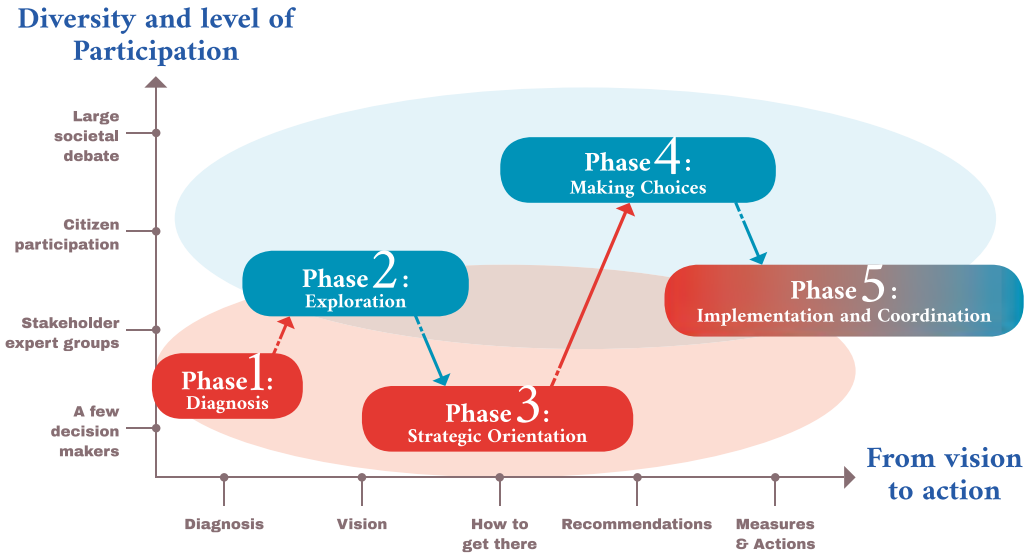
5. Reconfiguring the policy system
In a way that makes it more apt to address long-term challenges.

6. Symbolic function
Presenting to the public that policy is based on rational information.

In their model, it is proposed how foresight should be organized in several phases, each of which relates to functions of foresight in policy. The model was developed in line with the so-called ***"adaptive foresight"***. It is presented below with regard to foresight activities (X-axis) and the diversity and level of participation (Y-axis)



Graph 4



Graph 5

The phases of this process are:

1. **Diagnosis**: policy-makers and experts reflect on the situation of the current system;

2. **Exploration:** building scenarios of possible future evolutions of the system with a wider participation of stakeholders;

3. **Strategic orientation:** policy-makers discuss possible strategies (*with different degrees of involvement of stakeholders – depending on the context*);

4. **Making choices:** open public debate to reach the consensus as large as possible; and

5. **Implementation and coordination**: selected options are translated into policy.

However, what is taken for granted but not fully realized is that the policy cycle can be very long: it often takes several years for a policy to be fully implemented.

Foresight time horizons are also rather long (10-20 years), but we usually start "counting" the years from the current date.

What usually happens is:

- We try to understand what might happen "behind the corner" when the present changes into the future - under the influence of emerging trends and deep patterns (drivers of change).
- Then we try to develop the policy as if the future will "wait" / be "fixed" and not change in the process of us developing this policy.
  - But, this policy will not be implemented immediately – and its impact on society and economy will take even more time to manifest.
- So, by the time we develop the policy and start implementing it, the future will have already be very different – and it will be even more different by the time we expect the policy (at that time already from a long past period) will be implemented and product the expected impact.

One of the ways to prevent this constant "time-lag" of policy is **the policy design from the "future present"**. This approach proposes a rather different orientation (Rava, 2017), which could be described as a ***two-stage foresight framework*** – foresight operating in ***2 time horizons***.

The first time horizon is between now and the "future present" – the situation that we expect to happen when the current policy cycle is finished (5-6 years).

We can assume with relative certainty what might be the implications of actions that we have already taken, or plan to take on mid-term.

The second time horizon is between the "future present" and the "future future" - the situation that could happen 10+ years after the "future present" (so more than 15 years from the current moment)

We cannot assume much about this period with any certainty – and this is the space for development of innovative scenarios for transformative policy.

The minimal steps in this framework include:

a) Conduct horizon scanning to identify trends and describe the "future present".

b) "Locate" the stakeholders in the "future present" (using Experiential Futures).

c) Develop preferable scenarios in the form of social impact that will take place in in the "future future" (when we expect the new policy to be fully implemented).

d) Use Backcasting, Futures Creative, or Horizon Mission (together with systems methods to develop "rich" description) for the period between the "future present" the "future future".

e) Describe the minimal requirements and aim/intention) for the new policy that will be launched in the "future present" – and produce impact in the "future future".

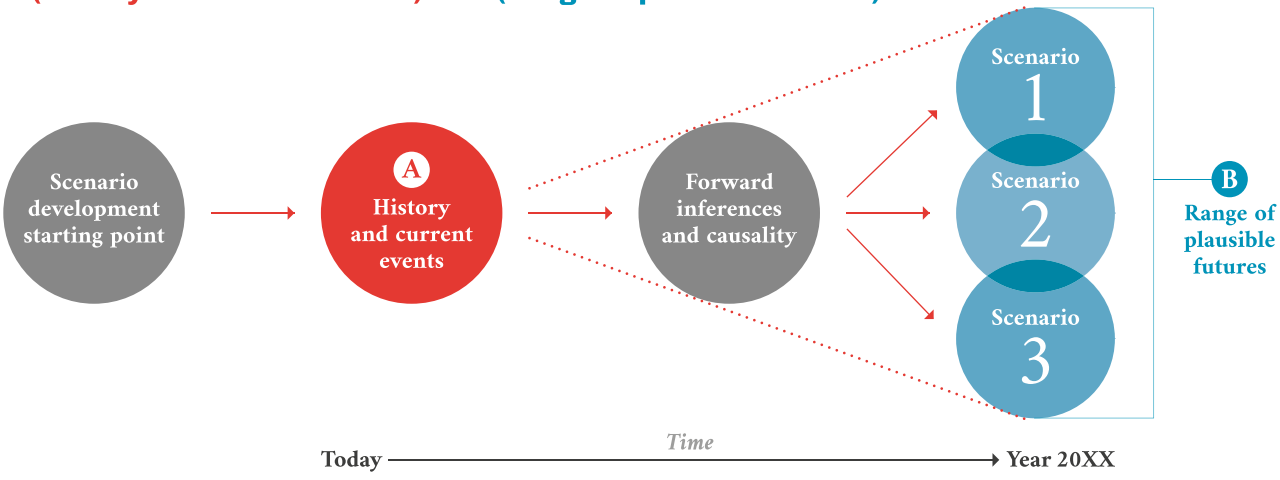
f) Backplan to the current day and develop strategic plan that will lead to the design the new policy by the time it should be launched in the "future present".

Foresight: "From" or "Into" the Future?

One of the main issues in foresight is **how to "look" at the future**. Forecasting always "looks" at future from the present - and on the basis of the data from the past (by the time it is collected in the present, data becomes part of the past). Foresight seeks to avoid such extrapolation, but this is always a great challenge due to the inclination to think that future is "ahead" and that is mostly given already.

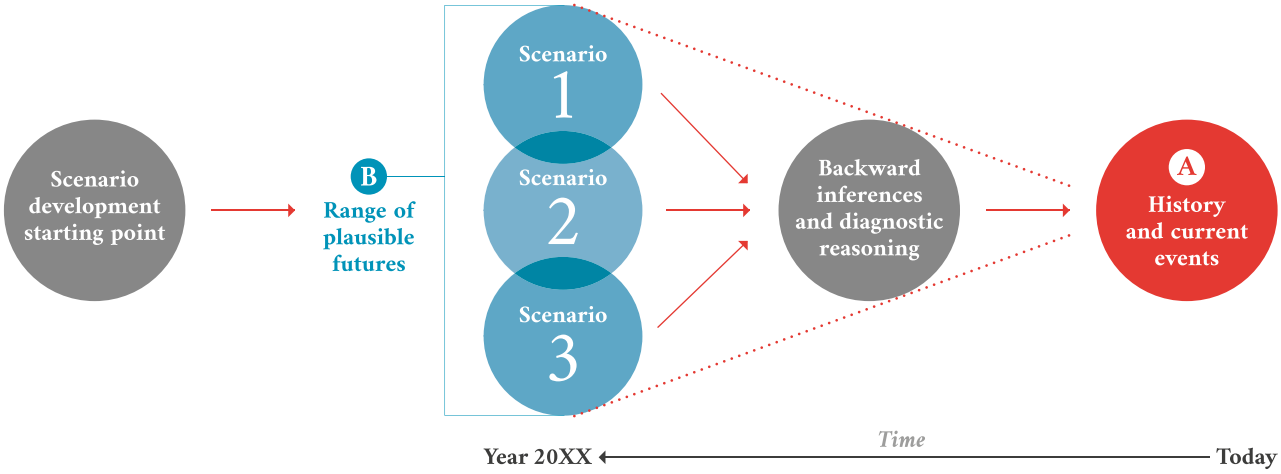
Most foresight methodologies apply the **"forward looking" approach – from the present "into the future"** – considering the future as something that will happen tomorrow on the basis of what has already happened (trends). This is sometimes called the *exploratory (or deductive) foresight* (see in van der Heijden and Sharpe, 2007).

How might events unfold within the scenario time frame to get us from
A (History and current events) to B (Range of plausible futures)?



Graph 6

What must have happened during the scenario time frame to get us to
B (Range of plausible futures) from A (History and current events)?



Graph 7

- *Starting point* for developing scenarios *is the past and the present.*
- We try to identify *the way history and current events might develop in the future.*
- The focus is on *identifying future events (and their implications) that should lead to expected scenarios.*

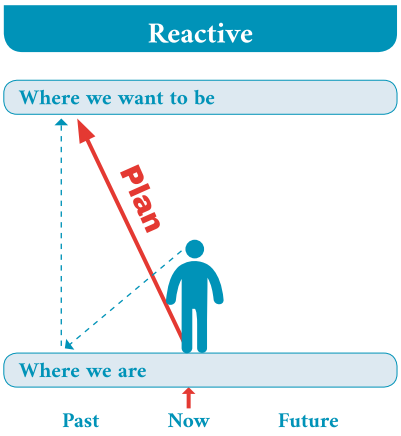
However, there is an alternative approach: *"backward looking" – "from the future" to the present.* Although the word "backward" usually refers to something conservative and non-innovative, this approach proved is all contrary to that – and it proved to be very effective for foresight. It is sometimes called the *anticipatory (or inductive) foresight.*

- *Starting point* for developing scenarios *is the future.*
- We try to identify *how that what might happen in the future influences the present.*
- The focus is on *what must we change in the present to create conditions that will lead to expected scenarios.*

The power of the anticipatory approach is that it seeks to gather the *"feed-forward"* – signals from the future, not from the present or the past (feedback). It tries to understand what our expectations (models of the future) tell us about how we understand the present and emerging trends. *And this is the only safe way to avoid the danger of foresight becoming forecasting.*

One of the most common methodologies for looking "from the future" is *Backcasting*. There are also foresight methodologies that focus on transformative innovation that apply this approach – including *3 Horizons, Futures-Creative, and Horizon Mission*. However, most of the *Experiential Futures* (and Role-playing used in foresight) are also anticipatory in their relationship to the future.

With regard to different relationships to the future in foresight and planning, it is important to understand the **4 different mindsets and orientations** (adapted from Ackoff, 1999). They indicate different ways to design foresight methodologies.



Graph 8

REACTIVE:

walking into the future looking at the past

Mindset: *dissatisfied with the way things are and where they are going.*

- Select a previous state as the objective and deal with problems in an effort to return to that state.
- When faced with a problem, identify its cause or source, and then try to remove or suppress it - if successful, this brings back the state that existed before the problem arose.
- The intention is to avoid what is not wanted (but does not mean getting what IS wanted).

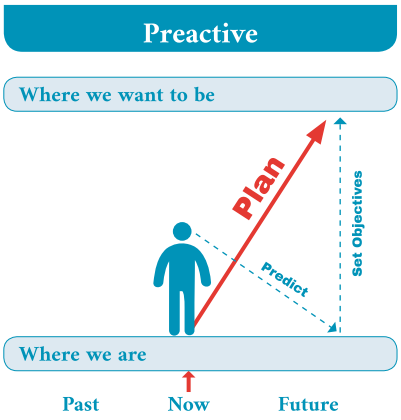
Graph 9

INACTIVE:

don't fix if it isn't broken

Mindset: *Prevent change*

- Unlike the case of the reactive approach, this one is satisfied with the way things are: they may not be perfect, but they are "*good enough*"
- React only in crisis: when the stability or survival of the current organization is at stake.
- When faced with a problem, address the symptoms.
- The intention is to temporary adjust by fire-fighting, and to keep the status quo.



Graph 10

PREACTIVE:

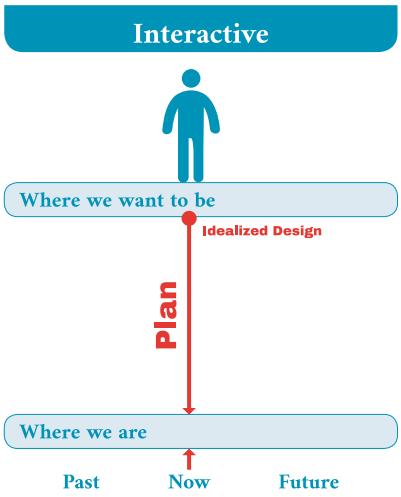
embrace the change that is coming

Mindset: *Future is always better than the present – anxiousness to "reach" the future as soon as possible.*

- Predict the future, establish objectives for it, and accelerate the change by acting towards it.
- When faced with a problem, identify its impact, and prepare for addressing it.
- The intention is to minimize risks and threats and exploit opportunities.

"Picture a person who goes swimming in the ocean and is carried away from the shore by a strong undertow. If he were reactive, he would turn around and try to swim against the tide, back to shore. If he were inactive, he would like his location and try to throw out an anchor and hold a fixed position, despite the tide. If he were proactive, he would like where the tide is going and would try to get on its leading edge and get to its destination before anyone else does. Then he would climb on shore, turn around, and collect a toll from those who arrive later."

However, there is the 4th approach – the one that seeks to *bring the tide under control*. This is not always a dream: people have been reversing the flow of rivers for centuries.



Graph 11

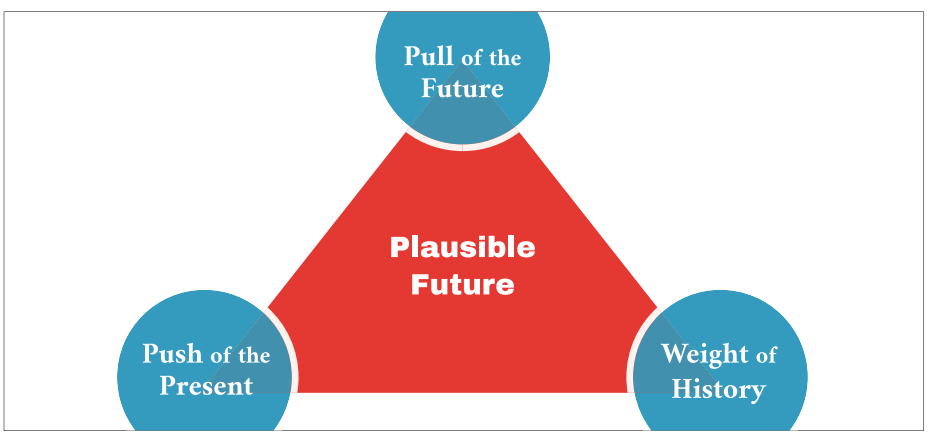
INTERACTIVE:
we create the future by the way we act in the present
Mindset: Future is open (and not linear) and we create it in the present - If we do not know where we would be right now if we could be wherever we wanted, how can we possibly know where we will want to be 5-10 years from now?

- Identify the desired present that will lead to the preferred future - not: what we do not want, or try to avoid, or should minimize.
- Develop actions and behavioural patterns that will approximate the desired present to the current state – keep working on "closing the gap".
- The intention is to "create as much of the future as is possible" by acting differently in the present.

Futures Thinking

With regard to futures thinking, Inayatullah (2008) lists **6 sets of futures questions**:

- What do you think the future will be like? What is your prediction? More and more progress and wealth? A dramatic technological revolution? Environmental catastrophe?
  - Why?
- Which future are you afraid of?
  - Do you think you can transform this future to a desired future?
  - Why or why not?
- What are the hidden or taken-for-granted assumptions of your predicted future?
- What are some alternatives to your predicted or feared future?
  - If you change some of your assumptions, what alternatives emerge?
- What is your preferred future - which future do you wish to become reality for yourself or your organization?



Graph 12

- How might you get there - what steps can you take to move in toward your preferred future?

His **Futures Triangle** maps today's views of the future through 3 dimensions:

- The *image of the future* pulls us forward.
- The *pushes of the present* are drivers and trends that are changing the future.
- The *weights of history* are the barriers to the change we wish to see.

By analysing the interaction of these three forces, the futures triangle helps us better understand the challenge and guide us towards developing a plausible future.

The **6 pillars framework** for comprehensive future approach is known as MATDCT:

- Mapping
- Anticipation
- Timing the future
- Deepening the future
- Creating alternatives
- Transforming the future

Popper's Foresight Diamond

One of the common ways to understand different foresight approaches was proposed by Popper (2008) in his Foresight Diamond. He distinguished the following dimensions of foresight: *Creativity vs. Evidence*, and *Expertise vs. Interaction*. This means that the Diamond maps methods depending on whether the approach is based more on expertise (e.g. expert panel) or the interaction between stakeholders (e.g. citizen panel). On the other axis, methods differ from those that seek empirical evidence (e.g. modelling) and those that are based on creative work (gaming). Moreover, the Diamond groups methods depending on the extent to which they are *quantitative* or *qualitative* - with some methods putting more focus on numerical data (e.g. bibliometric) and others on observational insights (scanning). Several methods combine the two approaches (e.g. Delphi).

It should be noted that the methods presented in the Diamond are not all originally from foresight, but can be adjusted for the use in foresight.

Foresight Diamond
Popper (2008)

Graph 13

E. Foresight methods and approaches

→

Foresight methods and techniques selected for inclusion in this guide are particularly useful for framing policy discussions and convening national dialogues, developing visioning and strategic planning processes, and informing decision-making and priority setting. However, some of those methods can contribute to ongoing policy and strategy implementation as well, and provide additional perspectives when conducting outcome and impact evaluations through the "feed-forward". Therefore, they may be used in various stages of the policy cycle and in combination with other methods. A full-scale foresight exercise rarely relies on one single method, so developing mixed-method approach customized for particular application and purpose of foresight is necessary.

1) Horizon scanning and Trends

Environmental or Horizon Scanning is the method of systematically exploring the external environment to:

1. better understand the nature and pace of change, and

2. identify potential opportunities, challenges, and likely future developments relevant to the organisation in focus.

It is often called "horizon" scanning because it goes beyond probable or even plausible into the whole scope of possible futures and trends.

Scanning should be applied to the whole 360 degrees of awareness.

Scanning should also clarify the "arena" (the locus: sector, industry, policy issues) and the "audience" (who will use the insights and results).

Scanning is different from forecasting because:

- Scanning does not seek to make predictions, but to identify and explore new, innovative ideas, as well as underling patterns of change.
- Scanning tries to avoid extrapolating present into future (with data on trends coming mostly from the past) and quantitative calculations of probabilities.
- Scanning is more oriented towards being on the "look-out" and searching for "weak signals" that might emerge into powerful trends. Moreover, it requires proper design of the scanning process to avoid the trap of confusing signals for trends or even drivers of change.

The increasing availability of large amounts of open data (Big Data), including from *massive online surveys and consultations, social networking platforms or crowd-sourcing tools*, is also changing the way traditional environmental scanning or ground-sensing can be conducted.

Scanning *can become a regular function and be conducted continuously for the purpose of monitoring the external environment*. That requires a dedicated team (not necessarily very large) or integrating scanning tasks into existing ones on policy and strategy development. However, it can also be used in combination with strategy development, dialogue, or policy change. Most importantly,

scanning is focused on external situation so it requires additional methods to properly use scanning insights to translate them into those that are of particular relevance for individual organization and to further lead to policy, strategic, or organizational change.

Key concepts in scanning

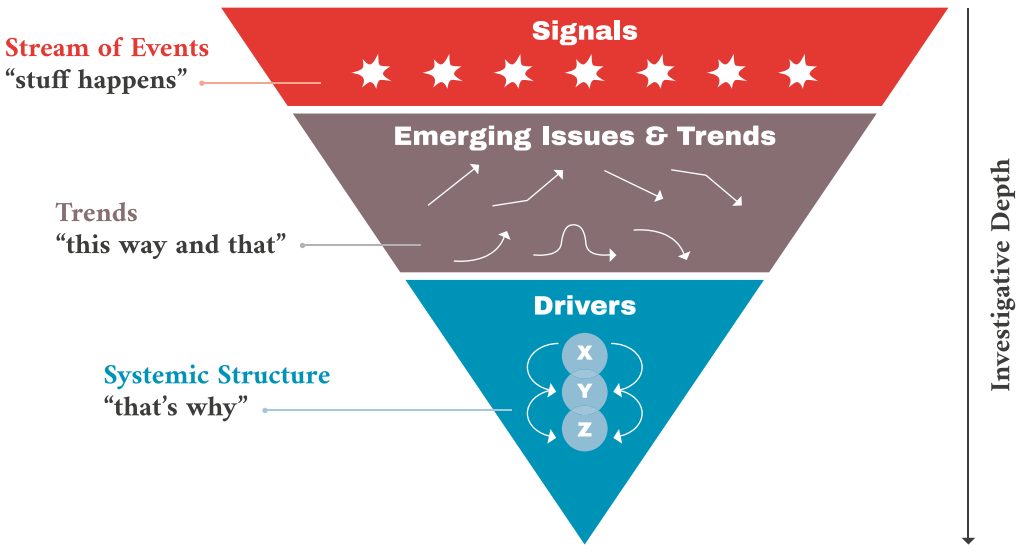
Scanning is not meant to predict what will happen, but to identify what might emerge. Therefore, it is very important to distinguish between the following:

- *Signals* are individual events and issues (data points), and confusing them with trends might lead to thinking that current news are indeed manifestation of mature trends. Signals also should be distinguished from "noise" – events and issues that are either not relevant for our foresight purpose, or are "masking" the actual trends.
- *Trends* are underlying patters of change that have a relatively clear direction of change. We can identify different "maturity" of trends.
- *Drivers* are most mature trends that have obvious impact across a wide range of sectors and industries (e.g. globalization).
- *Uncertainties* are emerging issues that are happening but we cannot "agree on" how they would evolve and in which direction (used for the 2x2 scenarios, as well).

In a typical scanning process, there might be 100+ signals, 20+ trends, and 10+ drivers. The number of uncertainties can vary considerably depending on the complexity and unpredictability of the focus of scanning.

Foresight is focused on identifying weak signals and wild cards, as explained below.

- *Weak Signals* are less advanced, noisy or socially situated indicators of change in trends and systems. They constitute raw informational material for enabling anticipatory action. Wild cards may or may not be announced by weak signals. In policy processes, weak signals can anticipate the agenda setting or when "the policy window" of an issue might open.
- *Wild Cards* (*or "Black Swans"*) are low-probability but high-impact events that seem too incredible or unlikely to happen. Considering the extreme impacts of a Wild Card may lead to the discovery of new opportunities and risks and the establishment of simple early warning systems of their potential arrival. Variations include: "grey swan" (predictable to a certain extent, e.g. earthquake), "dirty-white swan" (surprising only due to cognitive bias) and "red swan" (in reality not really impactful). Other related notions are "*red herring*" (misleading or fake signal), "*dragon king*" (large, extreme events that do not really come out of nowhere but most did not expect, e.g. 2008 global financial crisis), and "*white elephant*" (everybody aware of it, but most do not want to recognize its presence or relevance).



Source: Hogson and Sharpe, 2007

Graph 14

Scanning Modes	Information Need	Information Use	Amount of Targeted Effort	Number of Sources	Tactics
Undirected Viewing	General areas of interest; specific need to be revealed	"Sensing" Serendipitous discovery	Minimal Medium	Many	"Touring" Scan broadly a diversity of sources, taking advantage of what's easily accessible
Conditioned Viewing	Able to recognise topics of interest	"Sensemaking" Increase understanding	Low	Few	"Tracking" Browse in pre-selected sources on pre-specified topics of interest
Informal Search	Able to formulate queries	"Learning" Increase knowledge within narrow limits	Medium	Few	"Satisficing" Search is focus on an issue or event, but a good-enough search is satisfactory
Formal Search	Able to specify targets	"Deciding" Formal use of information for planning, acting	High	Many	"Retrieving" Systematic gathering of information on a target, following some method or procedure

Graph 15

Applying horizon scanning

Scanning should *start with the following questions*:

- What questions we need to respond to?
  - What is important and what is less important?
- What do we think we know (known knowns)?
- What do we need to know (known unknowns)?
- What do we expect that we do not know that we do not know (unknown unknowns)?

The last question is particularly important because our cognitive and behavioural biases prevent us from even being aware that we do not know something. This area is the most important for scanning because these "blind spots" are where most of the "weak signals" are coming from.

We should also determine the preferred and specific *modes of scanning*, each of which requiring different tactics and different resource allocation. The most widely used approach comes from Choo's famous "The Art of Scanning the Environment", as presented below.

Due to the wealth of information that can be collected and the need to organize it in a meaningful and useful manner, scanning is based on *segmentation of signals and trends into pre-determined categories*.

- The most usual approach is STEEP, which refers to Social, Technological, Economic, Ecological/Environmental, and Political domains. When information is collected, it is organized into those categories and analysed.
- Other categories to consider include Legal, Demographic, Ethnical, Regulatory, and Value domains. More recently the PESTL+V (Politics, Environment, Society, Technology, Legal, and Values) approach became most common.

For the purpose of expediency or convenience, the so-called "*scanning of scanning*" can be conducted. It is based on analysis of existing scanning reports – collecting, analysing, and synthesis – and it could be done in a matter of several days. However, it usually does not provide customized or targeted insights for the particular purpose or organization.

Scanning is usually applied as *the first phase of the broader foresight process* that then leads to scenario development. It is useful to identify the boundary and the focus of scenarios, but can also narrow the scope of new perspectives. Therefore, scanning can also be used *after* scenarios are developed – and the preferred one is identified – in order to introduce the feasibility aspect to consequent strategy and action planning.

The Big Events Of Our Time: The Future Of Urbanization In The 21St Century

Rwanda →

Title:

Foresight for Strategic Planning and Policy Development/ Foresighting Service Delivery in Secondary Cities

Development Context:

Rwanda has undergone a remarkable transformation in the 21st century, with impressive economic growth, hugely improved public services, poverty reduction, social stability, etc. Its ambition is to become a prosperous middle income country within the next 10 years. Kigali has been a major driver of this metamorphosis and the government is looking to the secondary cities to provide additional impulses to growth, thereby opening up new possibilities for rural development.

Development Challenge:

Sustainable Development Goal 11 aims 'to make cities inclusive, safe, resilient and sustainable'. 95% of urbanization in the coming decades will take place in the developing world, presenting both challenges and opportunities for human development. Urbanization will interact heavily with other key drivers of the 21st century, such as of climate change, technological innovation, global movement of trade, people and ideas, etc. These interactions will create new development realities (climate refugees, smart cities, driverless cars, etc.) with new strategic opportunities for economic and social development for which 19th and 20th century templates provide limited guidance.

Objectives:

1. To apply foresight to the future of urbanization and rural development;
2. To reflect upon necessary and feasible organizational tweaks to incorporate foresight techniques at different planning and policy development stages;
3. To identify strategic opportunities for economic growth and basic service delivery in the secondary cities.

Foresight methods used:

- Horizon scanning and trends
- Cross-impact analysis
- Trend impact analysis
- Scenarios – Generic Images
- Backcasting

Methods and technique related to scanning

The following can be used separately from horizon scanning, but when used together they improve the quality of foresight insights and results.

Moreover, some of these methods introduce additional aspect of participation, while other bring in the system thinking or more advanced quantitative and qualitative analytics.

Delphi method

The Delphi Method is a technique to structure group communication processes to deal with complex issues. It involves expert survey responses in a series of iterative learning rounds. Delphi first establishes the group's initial view, presents instant feedback on differing opinions, and goal seeks an agreed position in the final round. Contributors to the group analysis do not have to meet in person and can see the results as they, and their colleagues, add their views in real time. At the beginning, the organiser(s) formulate questions about the future and present these to contributors. Contributors respond by adding their rankings and comments. The organisers then modify the anonymous comments received to formulate better questions. The process is run again, in a series of rounds, until a consensus answer is arrived at.

Causal Layered Analysis

Causal Layered Analysis, or CLA for short, is an exercise in deconstructing stakeholder narratives surrounding an issue or strategic option about the future. CLA identifies the driving forces and worldviews underpinning diverse perspectives about the future and what it means to different groups through discussion and deconstruction of conventional thinking. Based on that, CLA is able to produce a shared view of possible future outcomes that can break existing paradigms of thinking and operating. It is particularly useful when different groups hold different perspectives on the future of an organisation and what strategy should be used.

Futures wheel

A futures wheel is a graphical visualisation of direct and indirect future consequences of a change or development. Futures Wheels can also be used in decision making (to choose between options) and in change management (to identify the consequences of change). The tool is especially useful during the brainstorming stage of Impact Analysis.

Cross-impact analysis

Cross-impact analysis is a family of techniques often thought of as an extension of the Delphi technique. CIA is an analytical approach for consistently estimating the probabilities of a set of events. Like its name entails, it involves identifying and evaluating the impact of trends or events upon each other using a matrix format.

Trend impact analysis

Trend impact analysis examines the cause, nature, potential impact, likelihood and speed of arrival of an emerging issue of change. Some trends are relatively predictable like global population growth but most trend extrapolations deteriorate over time the further out the projection goes. TIA seeks to look at the envelope of possibilities that deviate from the expected norm.

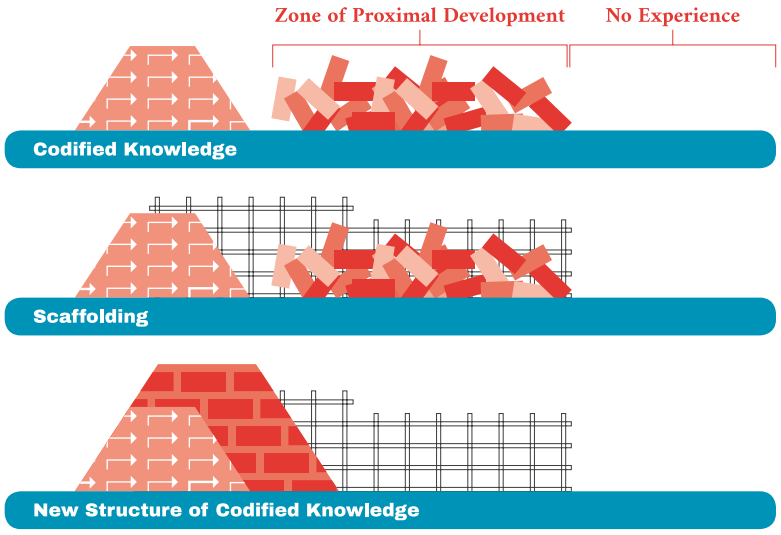
Morphological analysis
Morphological analysis is often used in conjunction with a relevance tree that is used to identify new product opportunities. This technique involves mapping options to obtain an overall perspective of possible solutions. This type of analysis explores all the possible solutions to a multi-dimensional, non-quantified, complex, usually 'wicked', problem.

Modelling, simulation and gaming
Modelling, simulation and gaming are techniques to help decision makers see the effects of policies in advance. Modelling, simulation and gaming has grown in influence as computerisation of the structure and rules allows complex systems dealing with many variables to be presented dynamically and graphically. As computer gaming technology becomes more sophisticated and monitoring devices become ever more ubiquitous we can expect these foresight methods to become ever more pervasive and exciting to use. For instance, virtual worlds too are very large simulations hosting smaller simulations and these are growing in power exponentially.

2) Using Scenarios

In foresight, *scenarios represent narratives of alternative futures* - the emerging environments in which today's decision play out - both with intended and unintended consequences.

- Scenarios are not predictions, and they are not policies, strategies or plans - they represented perspectives, hypothesis, expectations, and assumptions about the past, present, and future of a particular issues, organization, system, or broader development.
- Scenarios identify a limited set of examples of possible futures that provide a valuable point of reference when evaluating current policies and strategies or formulating new ones.



Graph 16

Scenario development/building can be used for different foresight purposes.

When we seek to help stakeholders develop shared understanding and improve collaboration without necessarily seeking imitate action, we use *"scenario learning"*. Scenarios then represent "scaffolding" for sense-making, dialogue and innovation. The example of developing knowledge through scenarios used as "scaffolding" is presented below (from van der Heijden 1997).

However, if we want foresight to lead to practical initiatives, scenarios need to be connected to policy design, strategy development and/or action planning – which is the aspect of foresight that is rarely effectively addressed.

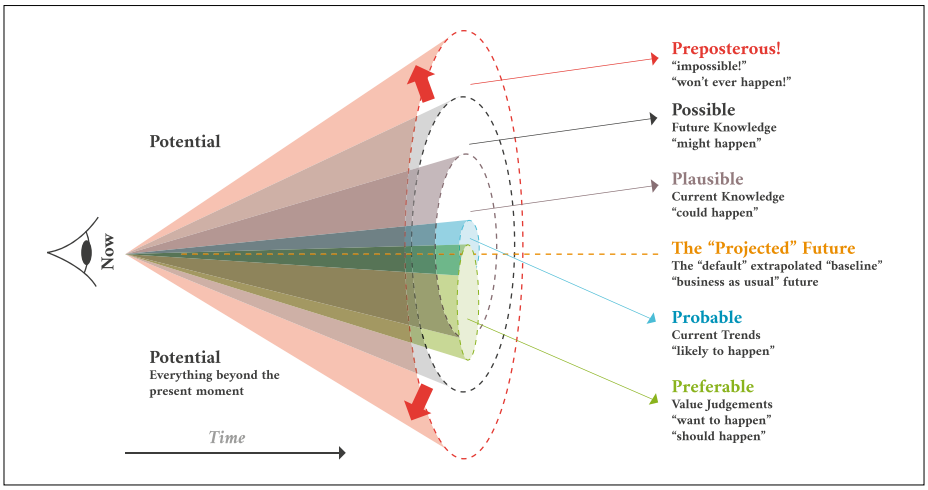
If scenarios do not translate into change (learning or action) they often remain "make-believe" exercises or merely end up being presented in reports that do not provide much practical value.

The *number of scenarios varies*: from one (visioning or backcasting) to a dozen or more. The more scenarios we generate, the more difficult it will be to consolidate them and translate into action.

The rule of thumb: there should be maximum 4-5 scenarios in one foresight initiative.

Scenarios can take different forms.

- They can be presented as *"kernel"* – the essence of the future situation formulated in one or several short statements.
- When we need to understand how some future might develop, we seek to elaborate scenarios in terms of *"how it all came to be"*. Such scenarios are full description of the pathways from present to the future.



Graph 17

Graph 18

- We may describe only the future situation (the future point in time, like in "day in life", or specific outcomes) as *a story "about" the future* - without the explanation of how this future emerged.

What kind of scenario format will be used depends on the purpose of foresight and specific methodology designed for it.

Do not forget when constructing scenarios:

To be effective, scenarios need to be presented as *"rich picture" with the whole spectrum of insights, feelings, relationships, and problems and opportunities*, etc. about the future situation.

Name each scenario – give a title – that resonates with stakeholders' understanding of it.

Scenarios should *avoid mere extrapolation of current trends*, but they also need to be *convincing, consistent, and plausible*.

When more than one scenario is developed, they *should not be overlapping or correlating.*

When working with more than one scenario, it is highly important to *populate the whole space of alternative futures* – as presented in the "*future cone*" below.

We should avoid "projected" (forecasted) future: instead, we should try to include not only probable or plausible futures but cover all that is considered possible. In that whole space of possible futures - when foresight methodology focuses on normative scenarios - we identify preferable futures. Only some cases (for instance, when using Horizon Mission) do we want to go beyond the scope of possible futures into the so-called "preposterous" futures.

Scenarios are most effective when used for the "long-tail" – for the periods of at least 10 years into the future, or at least 5 years after the current cycle of policy or strategy is expected to end.

Relating Scenarios and Strategies

As mentioned, *scenarios are not effective if they do not serve a particular purpose – be it learning or action*. With regard to action, it usually relates to policies, strategies and plans, but this section will put emphasis on strategies.

Relating scenarios to strategies is a rather demanding and challenging process and failure to succeed can undermine the whole foresight process.

First and foremost, the relationship between scenarios is not a one-step exercise and it is not one-directional.

To ensure the proper fit between strategies and scenarios we need to iterate them and to identify how a set of scenarios influences a set of strategies, and vice versa.

The most difficult aspect of this relationship is that *scenarios refer to environment while strategies refer to organizational level.* So, relating scenarios and strategies effectively means relating alternative environments to alternative organizational action and change (business idea) - as presented by the model below (van der Heiden, 1997).

The second major issue is the extent to which individual strategies (or policies) are aligned across several alternative futures / scenarios.

This is best addressed by *windtunnelling.* It helps to test how future changes might affect the ability to deliver a particular project or set of strategic objectives.

By inviting participants to imagine how they would meet their objectives in different scenarios, windtunnelling helps them identify critical planning points where strategy needs to be flexible and adaptable and what policies may need to be strengthened.

The technique of this kind of assessment is called 'Scenario-Strategy Matrix', in which each strategy is related to each scenario on the basis of four criteria for evaluating strategic options: Strategic Fit, Cultural Fit, Financial/Economic Performance, and Risk Performance.

This further leads to *grouping strategic options into strategies*, as follows:

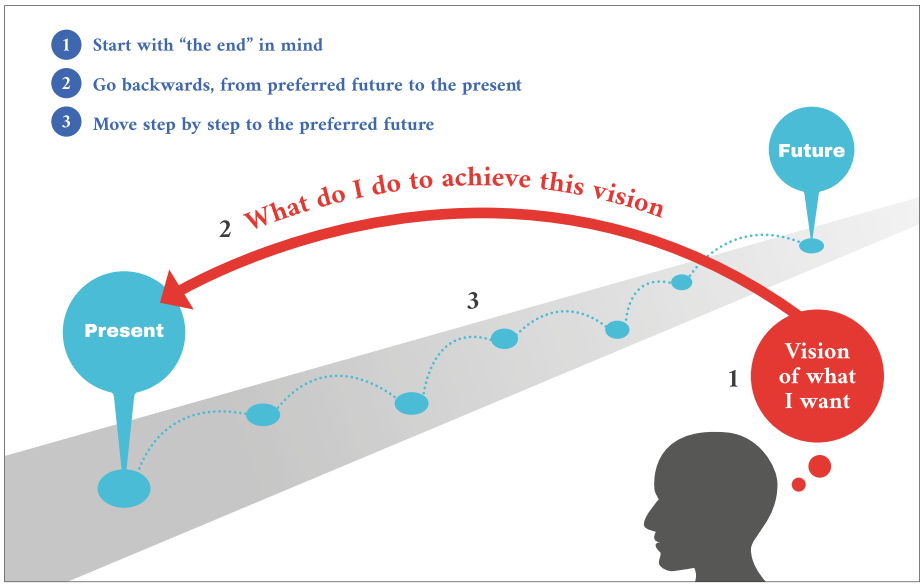
1. **Robust:** performs moderately over the full range of scenarios – it has least risk, but might be a relatively conservative response to unpredictable changes.

2. **Flexible:** performs well in most scenarios, but in some much better than in other – it keeps the options open and in high uncertainty might be considered better than the robust strategy.

3. **Multiple-coverage:** performs moderately in almost all scenarios – it is extensive and expensive approach based on a portfolio of strategic actions.

4. **Gambling:** performs exceptionally well in one or several scenarios but poorly in all other – it is the riskiest approach but the most innovative, and it might lead to transformative results if preferable scenario/s indeed takes place.

Each of the above implies a different combination of risk and innovation, and the choice is made based on preferences and needs, as well as the resources of the organization conducting foresight that is based on scenarios leading to strategic action.



Graph 19

Visioning/ Incasting

Visioning is a *method for identifying, developing and enriching a compelling, preferred future.* Visioning is the first step in creating a powerful strategy or transformative policy. In foresight visioning is sometimes called "incasting" because it goes in-depth into one particular scenario – which is the contrast to the visioning approach in conventional strategic planning that focuses on "vision statement". Moreover, visioning in foresight is usually done for period of at least 10 years in the future.
Participatory elaborating and enriching a vision is one of the most effective mechanisms for engaging a team, organisation or community and getting them excited to push forward into new territory. A successfully designed policy, plan, or service should aim to impact the thoughts and behaviours of society and culture, and serve as an example of the mindset and values of its creators – and visioning helps develop that. *Creating a clear and compelling vision is a precursor to strategic planning, and a key to creating the conditions to mobilise a group of collaborators around a common policy.*

Ultimately, visioning in foresight is not about creating my vision, but about creating a shared vision co-owned by the stakeholders.

Backcasting

This method was originally developed by Robinson (1990) with the intention *to prevent extrapolation of the present into the future that is common in forecasting.* It is closely related to the concept of "anticipatory models" in which insights come from the expected future situation (feed-forward) rather than in relation to expectations (goals/objectives) set in the past (feed-back). There are different ways to apply backcasting, but *backcasting should never be mere "back-planning" because it does not plan from future to the present, but attempts to understand how a particular future situation might develop*. Backcasting can be used as a very useful addition to visioning, or any other scenario method.

- The process starts by developing a normative (preferred/desirable or in some cases, idealized) future and then working backwards to identify major events and data points (signals) that generated that future.
- It leads to identifying a potential trajectory or "how it all might happen".
- This allows organisations to consider what actions, policies and programs are needed today that will connect the future to the present.

Backcasting reminds participants that the future is not linear, and can have many alternative outcomes depending on decisions made and the impact of external events on an organisation. It focuses on changing the present to try to change the conditions toward creating the desired future.

Strategic Opportunities for Development in the 21St Century

Cabo Verde →

Title:

Participatory Visioning, Resilient Planning and Innovative Solutions through Foresight

Development Context:

The Government of Cabo Verde has set out an ambitious development vision for the country. In it, the Government stresses the need for new ideas and approaches for economic growth that is private-sector driven and geographically and socially equally spread; for citizens' wellbeing, social inclusion and human capital development new, and; for responses to the changing relationship between citizens (and private sector) and state.

Development Challenge:

The 21st century present radically new opportunities and challenges for development, limiting the relevance and usefulness of 20st century templates for economic growth, human capital development and responsive institutions. Strategic planning in Cabo Verde therefore needs to look to the future to identify opportunities for each strategic priority instead of simply repurposing other countries' 'used future'. These future strategic opportunities also need to capture the complex interactions with, for example, climate change, technological innovation, social transformation etc., if the Strategic Plan (PEDS) is to provide strategic coordination and policy coherence.

Objectives:

1. Identify future strategic opportunities, challenges and risks to achieve the PEDS (Plano Estratégico de Desenvolvimento Sustentável) strategic objectives
2. Identify resilient and coherent priority policy areas/programs to realize the identified strategic opportunities
3. Explore and identify existing and newly required government structures to deliver collectively and coherently to strategic (i.e. sector transcending) objectives.

Foresight methods used:

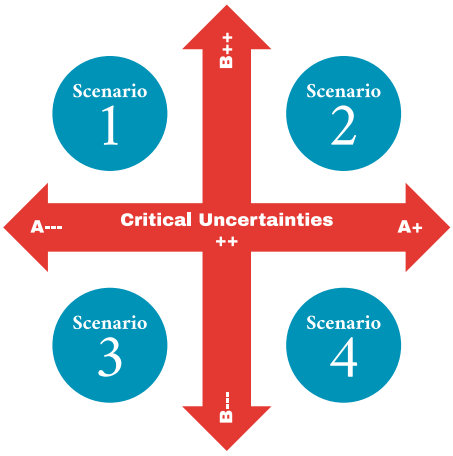
- Horizon scanning and trends
- Cross-impact analysis
- Trend impact analysis
- 3 Horizons
- Scenarios – Generic Images
- Future headlines/Cover page/Day in life

Future Headlines/Cover page/Day in life

It is a simple technique to *uncover (and challenge) assumptions and aspirations of stakeholders about what might happen in the future*. The approach is to ask to describe (or draw) the cover page of a newspaper with main headlines in a certain year in the future (for instance: on 1 January 2021).

A version of this is "day in life", which describes how a particular persona goes about one typical day in the future.

The next step is to facilitate dialogue on why this might happen (or what might happen differently). It can be a stand-along exercise, or be combined with any scenario method.



Graph 20

2x2 Matrix / GBN

The so-called "2x2 Matrix" is *one of the most widely used methodologies for scenario building*. It emerged from early foresight and was developed by Pierre Wack for Royal Dutch Shell in the 1970s. It was further systematized by BGN and described by Peter Schwartz in one of the most famous books on foresight: "*Art of the Long View*" (1991). It remains the most preferred approach to generating alternative scenarios because of its uncomplicated methodology that, in a relatively short period of time, generates 4 divergent scenarios. However, *it is not without a number of challenges, one of which is to properly identify critical uncertainties*.

- It is called "2x2" because it is based on a matrix with two dimensions of uncertainty (polarities).
- The 4 cells represent 4 combinations of the poles of the two uncertainties, in which kernels (essence of a scenario) of alternative futures are developed.
- Each kernel is then elaborated into a complete narrative / scenario with implications for the focal issue addressed by foresight.

While it is relatively easy to apply, the challenge is in identifying genuine critical uncertainties – and then selecting only 2 of those to use in foresight.

Uncertainties are very different from trends (we do not know what might happen) and they need to develop in only 2 future directions. Moreover, uncertainties should be able to be represented in their extreme manifestations.

The 4 scenarios emerging from those 2 uncertainties:

a) cannot be correlated,
b) should all be plausible, and
c) should all be relatively preferable (avoiding "good" vs. "bad" scenarios).

Futures: / Forces:	Grow	Collapse	Discipline	Transform
Population	Increasing	Declining	Diminished	Posthuman
Energy	Sufficient	Scarce	Limited	Abundant
Economy	Dominant	Survival	Regulated	Trivial
Environment	Conquered	Overshot	Sustainable	Artificial
Culture	Dynamic	Stable	Focused	Complex
Technology	Accelerating	Stable	Restricted	Transformative
Governance	Corporate	Local	Strict	Direct

Graph 21

Generic Images

On the basis of comparative analysis of diverse foresight applications, Jim Dator (the founder of the prominent Manoa School at the Hawaii Research Center for Future Studies) and his colleagues (Dator, 2009) identified that most of those produced 4 types of generic "alternative futures". *These futures are "generic" because the varieties in each them share common theoretical, methodological and data bases that are very different from those in the other 3 futures*. This approach was first applied for the participatory development of the "*Sustainable Hawaii 2050*" and consolidated the methodology.

The generic futures are:

- "Growth" (or acceleration the present)
- "Collapse" (fundamental break of the present)
- "Discipline" (highly controlled/ regulated future),
- "Transformation" (radically different future)

These are not "standardized" futures because each generic form has a large number of specific variations.

The matrix below presents how typical driving forces change in each:

It is one of the best alternatives to the 2x2 matrix and increasingly common methodology for foresight in governments.

- Instead of generating scenarios from scratch, this approach starts by assuming 4 different contexts and then moves to deepening each towards formulating 4 specific scenarios.
- The context is given in advance in many aspects, so what differs is the focus on particular question or issue that the foresight exercise seeks to address.
- The 4 scenarios are then broadened to cover the whole space of possible futures (the "future cone"), so that all possible developments are incorporated.

In order to immerse the stakeholders into the future situations (experiential futures), this methodology often includes setting up 4 different rooms, each providing deep experience (including "artefacts from the future") specific to the 4 generic scenarios.

Institutional Innovation to Escape the Middle Income Trap

Mauritius →

Title:

Towards an Innovative Civil Service in Mauritius

Development Context:

Mauritius is a middle income country on the cusp of gaining higher income status. However, the prospect of the middle income trap looms large. There is a growing awareness that a successful transition will require both economic and institutional transformations. The public service, so instrumental in the 'Economic Miracle' of the 1980s, needs to innovate if it is to provide the political government with strategic policy frameworks fit for transformation in the 21st century and to provide the citizenry, changing and more demanding, responsive basic services.

Development Challenge:

Many successful developing countries are facing profound difficulties to progress from the original economic growth model that exploited a certain advantage (e.g. low wages) towards a more high-value-added type of economy. With the initial advantage fading, investments diminishing and efforts to diversify stalling, these countries look for emerging economic opportunities and innovations to escape the 'middle income trap' and propel the economy in the 21st century. This will require an institutional environment that is anticipatory and adaptive instead of backward looking and 'business as usual'.

Objectives:

1. To construct generic scenarios of Mauritius in 2025, based on the future (interaction between) three key drivers: technological innovation, changing relationships between the public, private and civic sector and, emerging patterns of public services delivery;
2. To gain new insights in the opportunities and challenges posed by (the interaction between) these key drivers for the performance of the Civil Service;
3. To develop, prototype and fine-tune realistic and actionable opportunities for innovation in public services delivery.

Foresight methods used:

- Horizon scanning and trends
- Cross-impact analysis
- Trend impact analysis
- Scenarios – Generic Images
- Prototyping service innovation

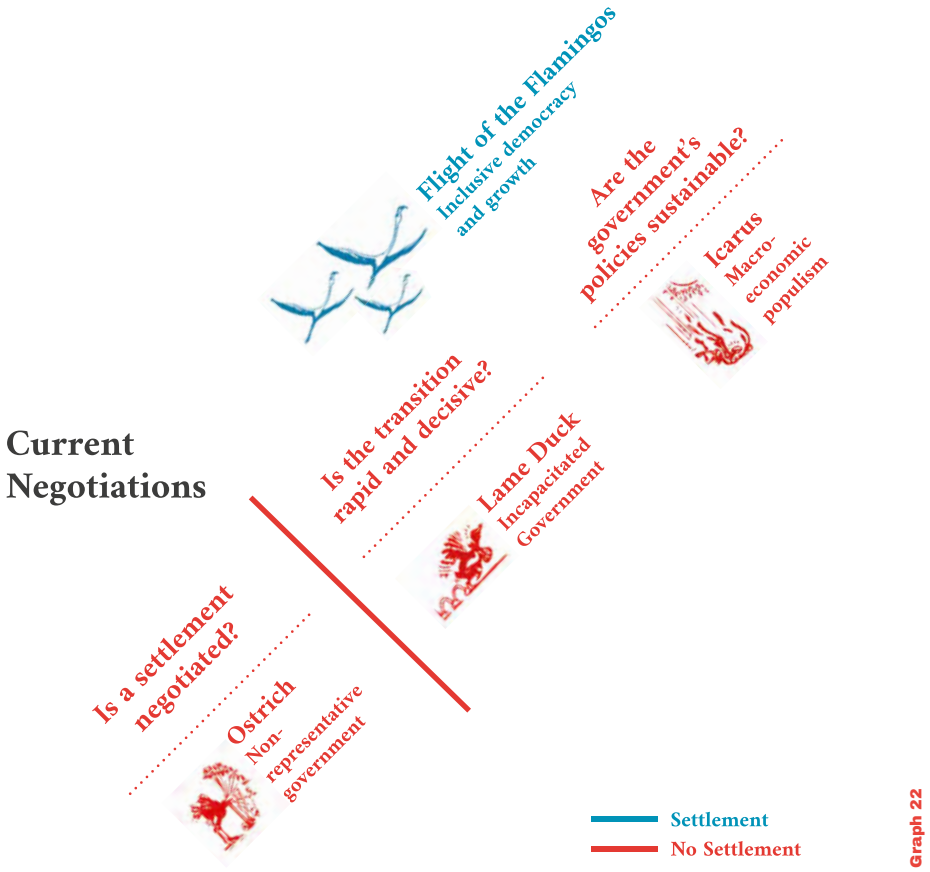
Branching scenarios

One of the most famous foresight initiatives involving broader stakeholders was the *Mont Fleur Scenario Exercise in South Africa in 1992*. It is now known as the Transformative Scenario Planning (as used by Adam Kahane), but in essence this methodology is based on branching scenarios. It is relatively simple to apply, but requires proper facilitation and dialogue, as well as linking it properly with policy, strategy and action.

- The methodology is based on a series of critical decision – each of which can be answered by "yes" or "no".
- At each of those steps (basically, a decision-tree), two diverging scenarios emerge.
- The branching can be continued for as long as it is necessary, but it is important not to create too many scenarios because it might drastically complicate the consequent strategy development and action planning.

This approach is a proactive one because it envisages very different possible futures and provides opportunities to prepare or adjust to them.

Most important is the awareness of the implications of decisions and the need to develop conditions that would lead to those decisions that lead to preferable futures.



Graph 22

3) Foresight, Dialogue, and Innovation

There is a number of methods, techniques, and methodologies from outside the discipline of foresight that can be adjusted and used in foresight. Most of those come from systems models, dialogue, and innovation.

- A selected number of dialogue approaches (*Appreciate Inquiry, Liberating Structures*) are presented with reference to their use in foresight. *Conference model* is a general dialogue or consultative approach, but has been used extensively for foresight and future research.
- There are methodologies that are usually considered a part of foresight, but their purpose is not scanning or scenario building but innovation (*3 Horizons, Horizon Mission*).
- One of those methodologies presented here (*Futures-creative*) comes from complex social systems domain, but it is presented here with regard to specific foresight application.
- Finally, the use of *Experiential Futures* and *Role-playing in foresight* helps embed stakeholders in future situations.
  - While some of those are often used in other methodologies (Experiential Futures in Generic Images; and Role-playing in most other scenario development approaches), they are presented here with the emphasis on making artefacts and wisdom "from the future" more tangible.

Graph 23

Appreciative Inquiry

Appreciative Inquiry (AI) is a process of change that focuses and builds on the positive things that are considered to already be effective. It is *a cooperative, co-evolutionary search fort the best in people, their organisations and communities, and the world around them*. It involves *systemic discovery* of what gives "life" to an organisation or community when it is most effective and most capable in economic, ecological, and human terms.

AI is often used as a dialogue method applied for foresight because of its emphasis on addressing the diversity of perspectives on the future and how to act upon those. Although it requires a skilled facilitator, it is relatively easy to organize.

The main phases of the AI are presented below:

- Starting with Discovery (appreciating the past); and then moving to Dreaming (creating future) and Design (co-constructing action/strategy); it ends with Destiny (sustaining change)
- The cycle can be iterated many times.

AI assumes that every organisation of community has many "untapped and rich accounts of the positive"—what people talk about as past, present and future capacities—the positive core.

AI links the knowledge and energy of this core directly to an organisation or community's change agenda, and changes never thought possible are suddenly and democratically mobilised.

Liberating structures

The idea of Liberating Structures was introduced by William Tolbert in 1991 and was further enriched and elaborated by a group of practitioners from a community of dialogue facilitators. The most recent consolidated approach to Liberating Structures is presented by Lipmanowicz. and McCandless (2013) in "The Surprising Power of Liberating Structures". *Their main argument is that conventional structures for collaborative interaction (dialogue-related or otherwise) are either too inhibiting or too loose to creatively engage people.* The usual sentiment is one of frustration or exclusion, and the outcome fails to meet the needs and expectations, as well as decreasing trust in the power of collaborative work.

Therefore, they developed so-called "micro-structures" for dialogue that can accommodate both small groups and larger groups (100 or more), while providing distributed control of the content and intention.

There is a variety of techniques of the Liberating Structures (currently

33), and several of those are used for foresight and innovation, including the following:

- 1-2-4-All
- 9 Whys
- 25/10 Crowdsourcing
- 3 Ws Brief (What, So What, Now What)
- 15% solutions

The most important aspect of Liberating Structures is that they are genuinely about dialogue; easy to learn and use; and usually take between 30min and 1h. Therefore, they are useful for combining with more substantive foresight methods.

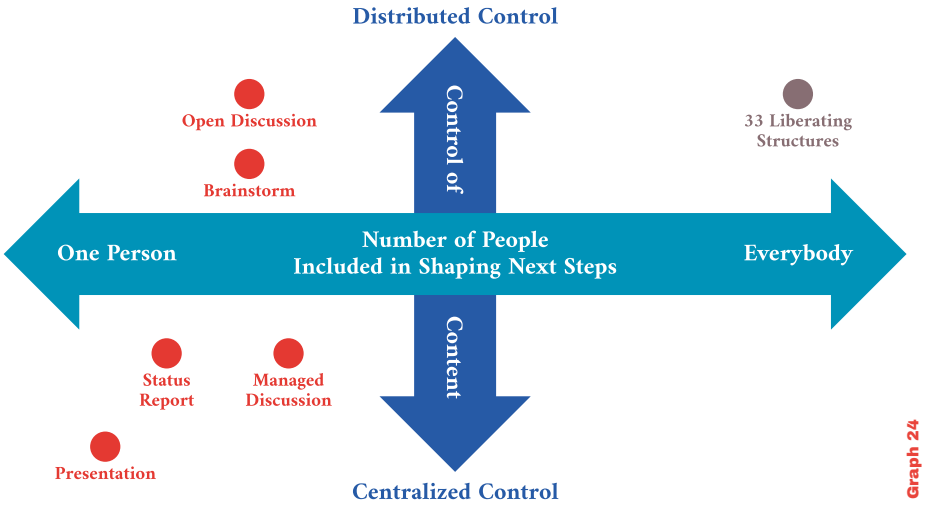
Conference model

The Conference Model was one of the first foresight approaches engaging large numbers of people in system-wide change through a series of integrated future-oriented events. Based on Socio-Technical Theory, search theory, and experiential/ creative methods, the model consists of three elements:

- Series of integrated conferences
- Walkthrough process
- Commitments / Pledges for change

The Conference Model creates an open exchange of information, increased understanding of the system under consideration, new agreements and actions, and enhanced relationships among participants – all in the future setting.

It is also useful for involving internal and external stakeholders in the redesign of processes and



Graph 24

organisations. Conference Model applications include redesigning processes, creating organisational futures, developing new organisational cultures, integrating organisational units/processes, creating self-directed work teams, improving union/ management cooperation, and creating organisational alignment with new strategic directions.

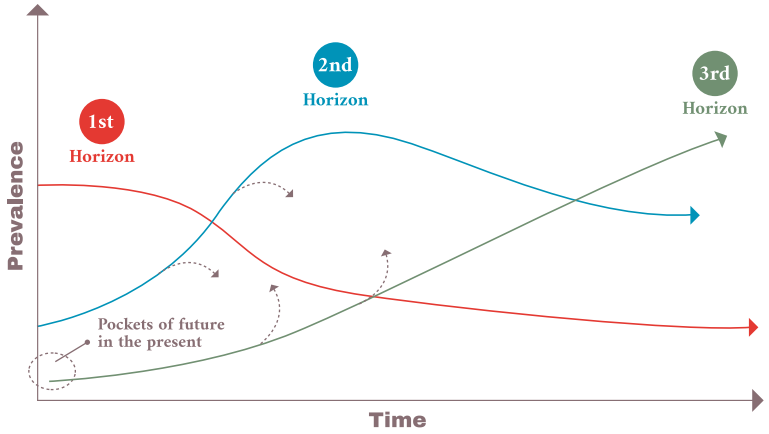
3 Horizons

One of the novel methodologies for foresight that is rapidly becoming popular is the 3 Horizons. *Although it might be used for scenario development or even scanning, it is most effective for innovation of current policies, strategies, and plans*. It can also help identify implications of alternative policy proposals or strategies in relation to broader, emerging change in the environment.

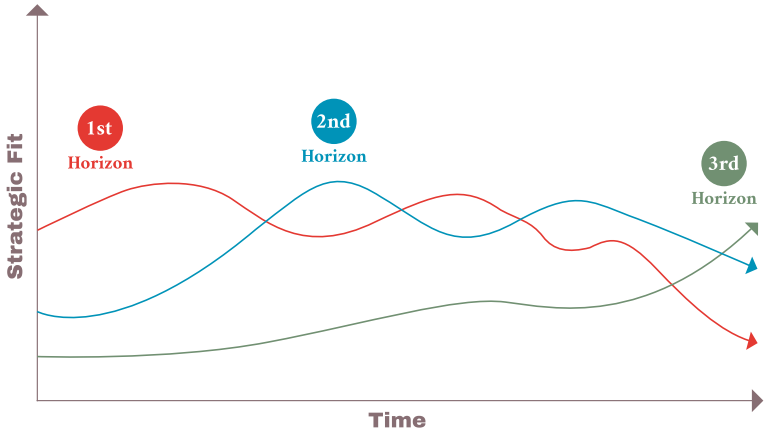
Besides being used as practical methodology for foresight, 3 Horizons also describes the 3 generic mindsets of people (in terms of how they relate to risk, change, and opportunity) and the ways how to reconcile them for collaboration and joint action.

The overall conceptual and methodological approach is

Graph 25



Graph 26



consolidated in the book by Bill Sharpe: "*Three Horizons*: *The Patterning of Hope*" (2013). While the concept of 3 Horizons might seem a bit complicated, the actual methodology is rather easy to use and does not require more than one workshop to be applied (at least initially).

These horizons are (in the order in which they are usually addressed in the methodology) described as follows:

- ***1st Horizon***: the current, prevailing system as it continues into the future when it loses "fit" over time as its environment changes.
  - It contains the "pockets of the future" which might lead to the 3rd Horizon
- ***3rd Horizon***: ideas or arguments about the future of the system, which are mostly considered marginal (or idealistic) in the present.
  - This horizon has the greatest potential to respond to the changes in the external environment that emerge.
- ***2nd Horizon***: the transition space of change and innovation where the 1st and 2nd horizons interact and usually clash over competing future perspectives and values.
  - This is the where innovation opportunities are to be found.

In most foresight methodologies scenarios tend to describe a static situation in relation to each other – not how they might interact more dynamically. They are also seen as linearly progressing from the present to the future, so they often cannot accommodate complexity.

The 3 Horizons addresses that gap by introducing 3 pathways that progress together while influencing each other, and each other's strategic fit with the environment.

While the basic model shows optimized pathways, additional versions of the map can represent a series of different other interactions. For instance, there can be a situation in which the 1st horizon and 2nd horizons "oscillate" continuously

The World we Have-Get-Want: New Development Opportunities for the 2030 Agenda

Lesotho →

Title:

SDG Foresight Workshop

Development Context:

The Ministry of Developmental Planning, on behalf of the Government of Lesotho, is working on Vision 2066 and the National Strategic Development Plan 2 (post 2017). The global, continental and regional agendas (SDGs, Agenda 2063 and SADC RISDP) are used as a benchmark for these visioning and planning processes. As a landlocked LDC, Lesotho's situation present unique opportunities and challenges for the realization of the many ambitions of these agendas.

Development Challenge:

The sheer ambition of the SDGs and the volatile new reality of the 21st century call for innovative approaches to identify emerging strategic opportunities and to turn good policies in cumulative results for citizens. It is no longer sufficient to look only towards the past for answers; if anything, governments need to sharpen their ability to look towards the future to realize the grand vision inherent in 2030 Agenda. However, existing foresight practice, which is very resource intensive, needs to be adapted to the circumstances and constraints of LDC like Lesotho.

Objectives:

1. To identify and explore the added value of foresight in a strategic visioning, management, planning and implementation processes, such as the SDGs and National Development Strategies;
2. To generate visions of preferred futures, scenarios of strategic sectoral opportunities and resilient plans for alternative operating systems;
3. To identify opportunities for introducing foresight methods in Lesotho's national, sectoral, urban and local strategic planning processes.

Foresight methods used:

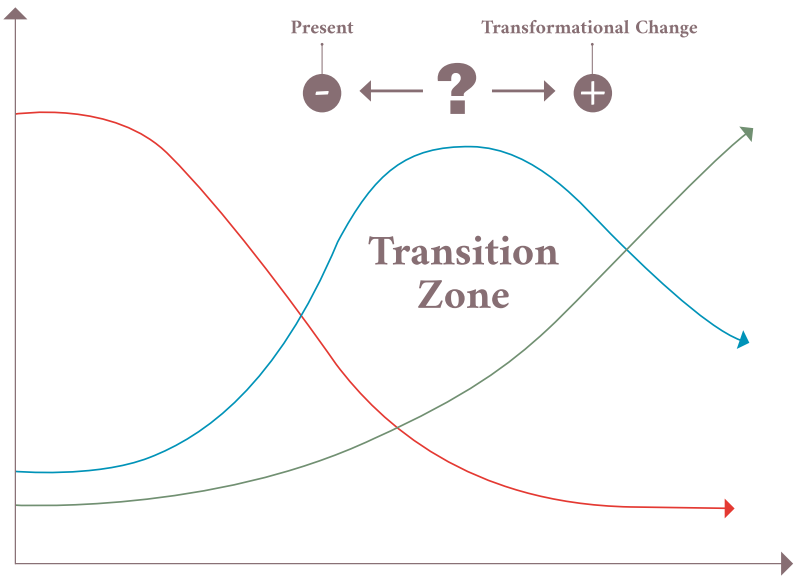
- Horizon scanning and trends
- Cross-impact analysis
- Trend impact analysis
- Scenarios – Generic Images
- Future headlines/Cover page/Day in life

replacing each other in terms of dominance over the system. *Each use of this methodology should include clarify the shared understanding of the expected dynamics of the 3 horizons.*

After identifying the 1st and 3rd Horizons (which can be done in iterations), the focus is put on the 2nd horizon. It is the zone, which looks "both ways" and *where innovation opportunities are to be found.* Some of those require modification of the present ("- ") while other lead to transformational change ("+") – as presented below:

Horizon Mission

The Horizon Mission methodology represents a specific application of the backcasting approach, but with a very different purpose. While usually applied for technological innovation, *this version of backcasting is one of the best approaches to identify disruptive, transformative innovation in any field.*



Graph 27

This methodology helps not to understand how certain future might emerge, but to work from the future situation that is considered to be close to impossible.

It was developed for NASA by John Anderson to help engineers decide on the research and development pathways that might lead to transformative innovation. When forecasting, we are bound by disciplinary backgrounds and tend to recommend incremental rather than breakthrough change. Anderson applied a different approach

- Firstly, they created a fantastical mission ("horizon mission"), one that was considered completely infeasible given the existing technology (in this case: 1-day mission to Jupiter which would actually take several months).
- The second step was to "decompose" that mission by asking: "Supposing that such a mission had actually taken place, what technologies would be required?"

They did not found a way to accomplish that mission (and that was not the purpose), but they ended up understanding that most of technologies for that mission was already available, or just emerging.

Working backward from an impossible future got them out of the present where they identified major future innovations.

Futures-creative / ISM

Another way to avoid extrapolating present into the future for the purpose of innovative breakthrough

First Dallas Regional 2015 Greg Heartsfield

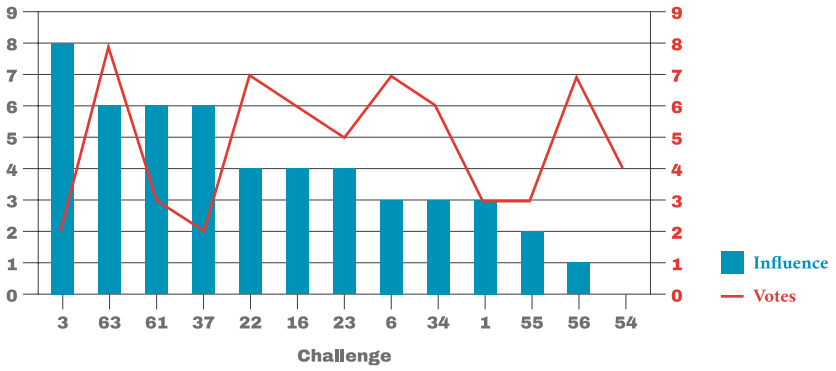
is the "futures-creative" model used in the Structured Dialogic Design (SDD). *The SDD is a methodology applied for different purposes – from understanding the current set of problems and engaging in the reconnaissance of emerging issues to foresight – and it incorporates, amongst other, the Interpretative Structural Modelling (ISM) method that identifies leverages (degrees of influences within a system).*

One of the most important aspects of this methodology is that uses particular dialogue framework to avoid the so-called "erroneous priorities", which are produced by "group-think" and cognitive biases (for instance, thinking something is important only because it is urgent or represents a "big" issue).

- The graph shows the difference between how stakeholders perceived priorities when using the usual priority voting technique, and the use of ISM to identify the leverage (systemic influence).
- It shows, for instance, that the challenge No. 3 was not considered a priority (2 votes only), but his indeed the most important for systemic change and innovation.

The "futures-creative" model uses ISM (in combination with other methods) in 4 phases:

- The stakeholders try to better understand system relationships in an "idealized" future. This is a normative, "willed" future that should not have any consideration of current perspectives on feasibility.
- The same approach is applied on the present situation and for analysis of trends and developments.
- Finally, ISM is applied for identifying the "barriers" for reaching the "idealized" future given the present trends and development.
- This then leads to preparation of a specific policy, strategy, or action plan. Whether or not the "idealized" future becomes feasible is, at the end, less important because the purpose is to innovate in the present for transformative change in the emerging future.



Graph 28

Future artefacts / Advice from the future

Working with foresight is often very challenging because ideas are presented in abstract manner. This approach addresses that issue by deeply "immersing" of stakeholders into specific future situations.

Instead of looking "at" the future, stakeholders are invited to briefly "be" in the future by experiencing what it would feel like.

When the focus is on producing future artefacts (tangible objects) or be embedded in designed future situations, the approach is known as *Experiential Futures.* This approach is developed at the Situation Lab by Stuart Candy and Jeff Watson.

- It is becoming increasingly used in the social foresight through organization of participatory exhibits and installations, or at online social platforms.
- The future is represented in rich variety of formats and presentations, so that stakeholders can fully "experience it".

Another way to embed stakeholders in future situations that they can deeply experience is by Role-playing. The foresight-specific technique is called "*Advice from the Future*" and focused on the wisdom "from the future".

- Stakeholders are asked to assume the role of specific personas that represent "advisors from the future" - policy makers or strategists who live and work at least 10 years into the future.
- It starts with a short, scripted narrative about the future situation, and then continues by asking the panel of future "advisors" to address a "triggering question" (or specific "wicked problem") by advising the stakeholders on how to develop new policy, strategy or a plan in the present.

Changing Healthcare Delivery through Design Ted Eytan

OnInnovation Michelle Andonian

Main Literature

Ackoff, R. (1999) Re-Creating the Corporation: A Design of Organizations for 21st Century, Oxford University Press

Choo, W.C. (1999). The Art of Scanning the Environment. Bulletin of the American Society for Information Sciences. February-March, 21-24

Conway, M. (2016) Foresight Infused Strategy: A How-to-Guide for Using Foresight in Practice, Thinking Futures

Da Costa, O., Warnke, P., Cagnin, C., and Scapolo, F. (2008) The Impact of Foresight on Policy-Making: Insights from the FORLEARN Mutual Learning Process. Technology Analysis and Strategic Management, 20 (3)

Dator, J. (2009) Alternative Futures at the Manoa School, Journal of Future Studies, November 2009, 14(2), 1-18

Dreyer, I. and Stang, G. (2013) Foresight in Governments: practices and trends around the world. YES publication.

Hogson, T. and Sharpe, B (2007). Deepening Futures with System Structure, in van der Heijden, K. and Sharpe, B., Scenarios for Success: Turning Insights into Action, Wiley.

Evely, A., Reed, M., Alister, S. and Hardman, M. Future Tools Literature Review. Accessed from http://neat.ecosystemsknowledge.net/futures-tools.html on 25 September 2014.

Gidley, Jennifer M. The Future: A Very Short Introduction (Very Short Introductions) (p. 2). OUP Oxford. Kindle Edition

Inayatullah, S. (2008) Six Pillars: Futures Thinking for Transforming, Foresight, 10(1), 4-21
Jackson, M. (2013) Practical Foresight Guide, Shaping Tomorrow, Available at http://www.shapingtomorrow.com/media-centre/pf-complete.pdf.

Lipmanowicz, H. and McCandless, K. (2013) The Surprising Power of Liberating Structures: Simple rules to unleash a culture of innovation. Liberating Structures Press

Nicolini, F. and Bagni, M. (2012) Inventory of Foresight Methodologies and Studies, WP 5, STAR-IDAZ 7th Framework Programme Cooperation, Theme 2. Accessed http://www.star-idaz.net/wp-content/uploads/2012/10/WP5-Inventory-of-Foresight-Methodologies.pdf on 25 September 2014.

Ogilvy, J. and Schwartz, P. (1998) Plotting Your Scenarios, Global Business Network

Popper, R. (2008) "How are foresight methods selected?" *Foresight* 10(6), 62-89

Rava, N. (2017) Policy Design: Towards Understanding and a Methodological Framework, Explorations in Design, sLab/OCAD

Robinson, J. B. (1990) Futures Under Glass, Futures, 22(8), 820–842

Schwartz, P. (1991), The Art of the Long View, Doubleday/Currency

Sharpe, B. (2013) Three Horizons: The Patterning of Hope, Triarchy press

UNDP Global Centre for Public Service Excellence (GCPSE) (2014) Foresight as a Strategic Long-term Planning Tool for Developing Countries, Available at: http://www.undp.org/content/undp/en/home/librarypage/capacity-building/global-centre-for-public-service-excellence/Foresight.html United Kingdom Government Office for Science (2014) The Futures Toolkit: Tools for strategic futures for policy-makers and analysts. UK: Government Office for Science

Van der Heijden, K. (1997) Scenarios, Strategy, and the Strategy Process, Presearch, 1(1)

Voros, J. (2003) A Generic Foresight Process Framework, Foresight, 5(3), 10-21

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