

# Scenario thinking and usage among development actors

---

*William Robert Avis  
University of Birmingham  
18 October 2017*

## Question

*What approaches to scenario thinking are in use among development actors, private sector and governments? What are their pros and cons? How are the findings used and to what effect in programming and operations/implementation?*

## Contents

1. Overview
2. Scenario thinking
3. Case Studies
4. References
5. Annex: Comparison of the principle scenario development techniques

---

*The K4D helpdesk service provides brief summaries of current research, evidence, and lessons learned. Helpdesk reports are not rigorous or systematic reviews; they are intended to provide an introduction to the most important evidence related to a research question. They draw on a rapid desk-based review of published literature and consultation with subject specialists.*

*Helpdesk reports are commissioned by the UK Department for International Development and other Government departments, but the views and opinions expressed do not necessarily reflect those of DFID, the UK Government, K4D or any other contributing organisation. For further information, please contact [helpdesk@k4d.info](mailto:helpdesk@k4d.info).*

# 1. Overview

Scenario thinking is a strategic planning method that organisations use to make flexible long-term plans. Recent discussions of this method offered by the Foresight Horizon Scanning Centre (2009) define scenario thinking (they refer to it as scenario planning) as ‘a futures technique for medium to long-term strategic analysis and planning used to develop policies and strategies that are robust, resilient, flexible and innovative’.

The basic premise or approach is considered applicable to all kinds of settings, whether generating a knowledge strategy paper, a workshop, or an email debate. ODI (2009) comments that generally, scenario thinking (they refer to it as scenario testing) develops three scenarios: a positive (or optimistic), negative (or pessimistic), and neutral (or middle-of-the-road) scenario. Scenario thinking is considered particularly useful in developing strategies that acknowledge and navigate extreme events such as financial shocks, enabling individuals and organisations to steer a course between the false certainty of a single forecast and the paralysis that often strikes in troubled times.

This five day help desk review provides an overview of academic, policy and practitioner literature that examines scenario thinking. Whilst there exists a broad consensus that scenario thinking can play a useful role in developing organisational strategies, there is debate as to which scenario thinking approach is most appropriate, and how to avoid a number of common pitfalls associated with the use of scenarios. It is important to highlight that the term ‘scenarios’ has a broad application, receiving different levels of attention from various academic, policy and practitioner communities.

There is an extensive literature that discusses the history, development and application of scenario thinking in its various guises. It is important to note that scenarios may be used in a number of ways and the technique has been employed by a variety of organisations (government, private sector and INGO) in pursuit of very particular goals. Broadly, three approaches to developing scenarios have been identified. These include:

**Intuitive logics school:** This approach was proposed by Kahn at the Rand Corporation in the 1960s and adopted by Wack and Royal Dutch Shell. Intuitive logic approach assumes that business decisions are based on a complex set of relationships (economic, political, technological, social, resource, and environmental factors). Scenarios are hypothetical sequences of events constructed for the purpose of focusing attention on causal processes and decision-points.

**Probabilistic modified trends (PMT) school:** These techniques involve the probabilistic modification of extrapolated trends. The underlying principal for the development of trend impact analysis is that traditional forecasting methods rely on historic data extrapolation without considering the effects of unprecedented future events.

**The French School – La prospective:** The underlying principal of this approach is that the future is not part of a predetermined temporal continuity, and it can be deliberately created and modelled. This approach develops normative scenarios of the future and articulates idealistic future images so that scenarios can serve as a guiding vision to policy makers and provide a basis for future action.

Whilst scenario thinking has yielded some insight into how organisations can anticipate and cope with change it has not demonstrated its ability to inform organisation leaders about significant

political, environmental, economic and/or societal change. Whilst this critique is valid, many proponents of scenario planning assert that this technique does not claim to predict the future, rather it enables the telling of multiple stories that cover a variety of plausible future occurrences.

More critically, there has only been anecdotal evidence offered in support of the value of scenarios, even as aids to forecasting. In addition, with so few organisations making consistent use of them – and with the timescales involved reaching into decades – it is unlikely that any definitive supporting evidence will be forthcoming in the foreseeable future.

## 2. Scenario thinking

### Defining Scenario thinking

Scenario thinking (also referred to as scenario planning, scenario testing, scenario analysis etc.) is a strategic planning method that organisations use to make flexible long-term plans.

Commentators on scenario thinking have defined the approach in numerous ways; Porter (1985) defined scenarios as an ‘internally consistent view of what the future might turn out to be – not a forecast, but one possible future outcome’. Schwartz (1991) defined scenarios as ‘a tool for ordering one’s perceptions about alternative future environments in which one’s decisions might be played out’. Ringland (1998) defined scenario planning as ‘that part of strategic planning which relates to the tools and technologies for managing the uncertainties of the future’. Finally, Schoemaker (1995) defines scenario planning as ‘a disciplined methodology for imagining possible futures in which organizational decisions may be played out’.

More recent discussions of this method offered by the Foresight Horizon Scanning Centre (2009: 5), define scenario thinking (they refer to it as scenario planning) as ‘a futures technique for medium to long-term strategic analysis and planning used to develop policies and strategies that are robust, resilient, flexible and innovative’. Scenario thinking is often discussed alongside visioning<sup>1</sup> with both tools focusing on the future of an organisation, and enabling imaginative and creative ideas to play a central role in developing and rolling out knowledge strategies (Ramalingan, 2009).

The Foresight Horizon Scanning Centre (2009: 5) continues that ‘scenarios are stories (or narratives) set in the future, which describe how the world might look in, say, 2015 or 2050. They explore how the world would change if certain trends were to strengthen or diminish, or various events were to occur. Normally a set of scenarios are developed (between two and five) representing different possible futures, associated with different trends and events. These scenarios are then used to review or test a range of plans and policy options: the conclusion generally being that different plans are likely to work better in different scenarios. Alternatively scenarios can be used to stimulate the development of new policies, or as the basis for a strategic vision. They are also a useful means of identifying ‘early warning’ indicators that signal a shift towards a certain kind of future’.

---

<sup>1</sup> Visioning is similar to scenario planning. Visioning is a collective exercise, but can also be adapted and used in various other communication activities. The main objective is to make the problem and solution visual. It follows the age-old communication advice: ‘show, don’t tell’.

## Development of scenario thinking

There is an extensive literature that discusses the history, development and application of scenario thinking in its various guises<sup>2</sup>. Discussions of scenario thinking often trace its origins to the work of Herman Kahn at the RAND Corporation and his engagement with the US Military in the 1950s where he developed a technique of describing the future in stories as if written by people in the future (Chermack et al., 2001). Kahn adopted the term "scenarios" to describe these stories. In 1961 he founded the Hudson Institute where he expanded his scenario work to social forecasting and public policy (Erdogan et al., 2009). Concomitantly the Stanford Research Institute offered long range planning services to businesses that considered political and economic forces as primary drivers of business development. Shell was amongst the earliest and most prominent exponent of scenario thinking for business purposes (discussed below).

The US economic recession of the 1980s represented a period of decline for scenario thinking with commentators arguing that scenario planners had misused the tool, over-simplifying the use of scenarios and confusing the nature of "storytelling" with forecasting (Chermack et al, 2001: 12). Scenario thinking, as with many methods, has thus been in vogue at various periods through the 20<sup>th</sup> and 21<sup>st</sup> century. Recent exponents of scenario thinking include the United States Agency for International Development (USAID) and the Japan International Cooperation Agency (JICA) (discussed in the cases studies section).

Broadly, three scenario thinking methods have been identified in the literature. These can be summarised as follows (Amer et al., 2012: 26-27)<sup>3</sup>:

**Intuitive logics school:** Intuitive logics methodology has received most attention in the scenario planning literature. This is an approach developed by Kahn at the Rand Corporation in the 1960s, and adopted by Wack and Royal Dutch Shell. The intuitive logic approach assumes that business decisions are based on a complex set of relationships between economic, political, technological, social, resource, and environmental factors. Scenarios are hypothetical sequences of events constructed for the purpose of focusing attention on causal processes and decision-points. According to this approach, it is important to understand these factors in order to provide insights and improve the decision making process. Intuitive logical approaches can be used to develop flexible and internally consistent scenarios. This technique relies on the knowledge, credibility and communication skills of the team developing the scenario. Some of these key forces are precise, quantitative and predictable, like demographics etc., while many other factors are imprecise, qualitative and difficult to predict, such as attitudes, politics, financial conditions etc. (Amer et al., 2012: 26-27).

**Probabilistic modified trends (PMT) school:** This school of scenario planning incorporates two different matrix based methodologies: trend impact analysis (TIA) and cross impact analysis. These techniques involve the probabilistic modification of extrapolated trends. The underlying principal for the development of TIA is that traditional forecasting methods rely on historic data extrapolation without considering the effects of unprecedented future events. This approach

---

<sup>2</sup> In this help desk report I will deploy the term 'scenario thinking' and include within this umbrella term 'scenario planning', 'scenario analysis', 'scenario testing' etc.. It is important to acknowledge that scenario thinking is a tool used by organisations and individuals to accomplish very specific aims and thus approaches to scenario thinking will be nuanced by institutional goals.

<sup>3</sup> See annexe 1 for a comparison if the principle scenario development techniques.

combines traditional forecasting techniques, such as time series analysis, with the qualitative factors to strengthen the scenario thinking (this approach refers to it as scenario analysis). The underlying principal for the development of this approach is that it is unrealistic to forecast an event in isolation without considering occurrence of other key impacting events. Therefore, cross impact analysis is used to capture the interrelationship between key influencing factors (Amer et al., 2012: 27).

**The French School – La prospective:** The underlying principal of this approach is that the future is not part of a predetermined temporal continuity; rather it can be deliberately created and modelled. This approach develops normative scenarios of the future, and articulate idealistic future images, so that scenarios can serve as a guiding vision to policy makers and provide a basis for future action. This approach gives greater flexibility and more general meaning to the scenarios. In France, scenarios are more often used for public sector planning than corporate level planning, and the scope of scenario work is often narrowly focused. This methodology has been applied to a wide range of public issues including education, environment, urbanisation and regional planning (Amer et al., 2012: 27).

## Features and benefits of scenario thinking

A common feature of scenario thinking is an acknowledgment that at any given point, there are an infinite number of possible future scenarios (McBain, 2017). Scenario thinking does not therefore attempt to predict which of these will occur, rather, through a formal process it identifies a set of examples of possible futures that provide a valuable point of reference when evaluating current strategies or formulating new ones (Foresight Horizon Scanning Centre, 2009:5).

ODI (2009) comments that scenario thinking (they refer to it as testing) is a group learning activity. The basic premise can be used in all kinds of settings, whether generating a knowledge strategy paper, a workshop, or an email debate. ODI (2009) comments that generally, scenario testing develops three scenarios: a positive (or optimistic), negative (or pessimistic), and neutral (or middle-of-the-road) scenario. By actively using 'scenarios', several concerns and outcomes can be addressed at the same time. Participants are able to:

- Identify general, broad, driving forces, which are applicable to all scenarios.
- Identify a variety of plausible trends within each issue or trend (trends that vary depending on your assumptions so you get positive and negative perspectives).
- Combine the trends so you get a series of scenarios (for example, mostly positive trends identified in relation to an issue would give a positive scenario).

Scenarios are thus a way of developing alternative futures based on different combinations of assumptions, facts and trends, and areas where more understanding is needed for particular scenario projects (Caldwell, 2001). According to Caldwell (2001), the building blocks of scenario thinking include:

**Paradigms:** Paradigms are the "unwritten rules of change". It is important to consider what the next paradigms are, and how shifts affect individuals and organisations?

**Trends and driving forces:** Collecting individual trends and grouping them into a few driving forces (e.g. economy, social/political, technological) allows individuals and organisations to garner a sense of where they are heading if current conditions continue.

**Wildcards and uncertainty:** Caldwell (2001) comments that to undertake scenario thinking it is important to acknowledge and state assumptions. Individuals and organisations need to know what they don't know and find more information about those topics. They need to recognise the uncertainty that exists, especially if they plan to construct scenarios far into the future. Individuals and organisations should also expect wildcards to occur (i.e. unexpected events that could have a big impact).

Once these building blocks have been identified – individuals and organisations can develop scenarios: Caldwell (2001) concludes that individuals should proceed by:

- selecting the relevant possible paradigm shifts and use them as an overall guide;
- Cluster trends and see which few (4-6) driving forces are most useful to your situation;
- Consider what is unknown, identify some uncertainties, and a few wildcards;
- Make a few (4) scenarios by mixing the driving forces in different ways to include some wildcards.

Scenario thinking is considered particularly useful in developing strategies that acknowledge and navigate extreme events such as financial shocks (if used correctly – see critique section). Roxburgh (2009) comments that scenarios enable individuals and organisations to steer a course between the false certainty of a single forecast and the confused paralysis that often strike in troubled times. According to Roxburgh (2009), when well executed, scenario thinking can be beneficial to organisations in a number of ways:

**Scenarios can expand your thinking:** Organisations and individuals think more broadly if they develop a range of possible outcomes, each backed by the sequence of events that would lead to them. By demonstrating how, and why, things could become much better or worse, increases readiness for the range of possibilities the future may hold. As a result, individuals and organisations find themselves testing a range of hypotheses involving changes in a variety of underlying drivers. They learn which drivers matter and which do not, and what will affect those that matter enough to change the scenario.

**Scenarios uncover inevitable or near-inevitable futures:** A sufficiently broad scenario-building effort yields another valuable result. As the analysis underlying each scenario proceeds, individuals and organisations may identify powerful drivers of change. These drivers result in outcomes that are the inevitable consequence of events that have already happened, or of trends that are already well developed. In developing scenarios, individuals and organisations should search for predetermined outcomes, particularly unexpected ones, which are often the most powerful source of new insight uncovered in the scenario-development process.

Roxburgh (2009) identifies four kinds of predetermined outcomes:

- *Demographic trends.* Changes in population size and structure are among the few highly predictable aspects of the future.
- *Economics.* Every economic *action* has a predetermined *reaction*. These reactions are often ignored in strategy. If uncovered through scenario planning, however, they can generate powerful insights.
- *The reversal of unsustainable trends.* Organisational plans often extrapolate into the future trends that are clearly unsustainable. Often, optimistic projections are

accompanied by bold claims of a new paradigm. Strategists need to be cautious about alleged new paradigms.

- *Scheduled events.* Scenarios must take into account scheduled events beyond typical corporate planning horizons. Although scheduled events ought to be common knowledge, they tend to be overlooked in planning exercises because they fall beyond the next 12-18 months. Scenarios should account for scheduled events that could have a big impact in the 24–60 month time frame.

While some errors can be avoided by recalling certain fundamental economic and demographic facts or scheduled events, problems of timing will continue to exist. Roxburgh (2009) concludes that the realisation that something *must* happen, even if it is not clear when, leads to the inclusion of at least one scenario that accounts for such developments.

**Scenarios protect against ‘groupthink’:** Often, the power structure within organisations inhibits the free flow of debate. Scenarios allow organisations to break out of this trap by providing a political “safe haven” for discussion.

**Scenarios allow people to challenge conventional wisdom:** In large organisations, there is typically a strong status quo bias. Scenarios provide a less threatening way to lay out alternative futures in which the assumptions underpinning existing strategy may no longer be true.

According to ODI (2009) the scenario thinking or testing process will involve the following steps:

- Invite participants who have knowledge of, or are affected by, the proposal or issue of interest.
- Invite participants to identify the underlying paradigms or unwritten laws of change; trends or driving forces and collect into general categories (economy, socio/political, etc.); and wildcards or uncertainties.
- Consider how these might affect a situation, either singly or in combination, using these steps:
  - Review the big picture
  - Review general approaches to future studies
  - Identify what you know and what you don't know
  - Select possible paradigm shifts and use them as an overall guide
  - Cluster trends and see which driving forces are most relevant to your scenario
- Create alternative scenarios (similar to alternate scenes in a play) by mixing wildcards with trends and driving forces; keep the number of scenarios low (four is ideal because it avoids the 'either/or' choice of two, and the good/bad/medium choice of three).
- Write a brief report that: states assumptions and a future framework; provides observations and conclusions; gives a range of possibilities; and focuses on the next steps coming out of this study. Each scenario should be about one page.

## Usage of scenarios

It is important to note that scenarios may be used in a number of ways and the technique has been employed by a variety of organisations (government, private sector and INGO) in pursuit of very particular goals. Use of scenario thinking has increased significantly during the last decade. Research indicates that there is correlation between adoption of scenario thinking techniques and uncertainty, unpredictability and instability (Amer et al., 2012). In what follows I provide a brief account of how different types of organisations have deployed scenario thinking. More broadly, the usage of scenarios has been explored by Mercer (1995: 37-38) who suggests it can contribute to the following as follows:

**Containers for the drivers/event strings:** Most basically, scenarios are a logical device, an artificial framework, for presenting the individual factors/topics (or coherent groups of these) so that these are made easily available for individuals and organisations – as useful ideas about future developments in their own right – without reference to the rest of the scenario. It must be stressed that no factors should be dropped, or even given lower priority, as a result of producing the scenarios. In this context, which scenario contains which topic (driver), or issue about the future, is irrelevant.

**Tests for consistency:** At every stage it is necessary to iterate, to check that the contents are viable and make any necessary changes to ensure that they are; here the main test is to see if the scenarios seem to be internally consistent – if they are not then the writer must loop back to earlier stages to correct the problem. It is important to stress once again that scenario building is ideally an iterative process. It usually does not just happen in one meeting, but takes place over a number of meetings as the participants gradually refine their ideas.

**Positive perspectives:** Perhaps the main benefit deriving from scenarios comes from the alternative 'flavours' of the future their different perspectives offer. It is a common experience, when the scenarios finally emerge, for the participants to be startled by the insight they offer – as to what the general shape of the future might be – at this stage it is no longer a theoretical exercise but becomes a genuine framework (or rather set of alternative frameworks) for dealing with that.

## Scenario thinking: Shell

Sadri and Sadri (2009: 13) trace the practical development of scenario forecasting (to guide strategy rather than for the more limited academic uses) to its uptake by Pierre Wack in 1971 at the Royal Dutch Shell group of companies. Shell has, since then, led the commercial world in the use of scenarios – and in the development of more practical techniques to support these.

According to Schwartz (1991), the company publicly estimates that this planning process made their company the largest in the world. However, other commentaries on Shell's use of scenario planning have suggested that few if any significant long term business advantages has been accrued to Shell from use of scenario thinking (de Geus, 1988). Whilst the intellectual robustness of Shell's long term scenarios was seldom questioned their practical use was seen as being minimal by many senior Shell executives. The use of scenarios was audited by de Geus's (1988) team in the 1980s and they found that the decision-making processes following the scenarios were the primary cause of the lack of strategic implementation, rather than the scenarios themselves.

The contemporary use of scenario thinking by Shell (2013) has been outlined in their 2013 report titled *New Lens Scenarios: a Shift in Perspective for a World in Transition*. The *New Lens Scenarios* and *A Better Life with a Healthy Planet* are part of an ongoing process – scenario-building – used in Shell for more than 40 years to challenge executives’ perspectives on the future business environment. According to Shell (2013) these are based on plausible assumptions and quantification, and they are designed to stretch management thinking and to consider events that may only be remotely possible. Scenarios, therefore, are not intended to be predictions of likely future events or outcomes, and investors are advised not to rely on them when making an investment decision with regard to Royal Dutch Shell securities. An example of Shell’s deployment of scenario thinking is provided in the analysis of Germany’s energy scenarios (Shell, 2017):

### Germany’s energy scenarios

The Shell Energy Scenarios for Germany (Shell, 2017) look at potential opportunities and challenges in the various sectors of the German economy in light of the politically agreed CO2 reduction targets. They go on to identify high-level drivers that may have the largest impact on how those sectors may evolve between now and 2050. The scenarios are not “predictions” or likely outcomes. Rather, they ask “what if” type questions, and apply Shell’s scenario experience to explore where those plausible assumptions and quantifications may lead. Shell identifies five high level drivers likely to have an impact on how the key sectors in Germany may evolve between 2025 and 2050 (Shell, 2017: 10-12):

- **Demographics and immigration challenges:** assuming two different levels, either, Germany successfully manages to stabilise declining demographics and to keep the population stable by 2050, or Germany experiences greater challenges to counterbalancing the decline in population through immigration, resulting in a decline in the population.
- **Economy:** A key question will be how flexible the German economy will be in coping with new challenges from international competition, and how automation will play into demographics as technology impacts the share of labour in production.
- **German politics:** Will political parties agree to promote the wider good? Or would a likely trajectory be more ad hoc political coalitions that focus temporarily on specific policy goals, with more tactical and short-term objectives at the expense of institutional stability and long-term thinking?
- **Technology challenge and how this will shape productivity:** Societal acceptance of new technologies cannot be taken as a given. On the other hand, Germany’s response to developing and being a test ground for new technologies will be an important factor in determining whether it remains an innovation frontrunner, or will have to surrender its position to other nations able (and willing) to be more flexible and fast-moving – with the consequence that such new industries potentially move to these more flexible, vibrant places.
- **External developments:** Changes to the balance of trade and collaboration with other EU member states could trigger a re-framing of the economic model away from exports. A more balanced German economy could be a positive gain.

Given these drivers, Shell has developed two scenarios to frame investment decisions. These are discussed below (Shell, 2017: 13):

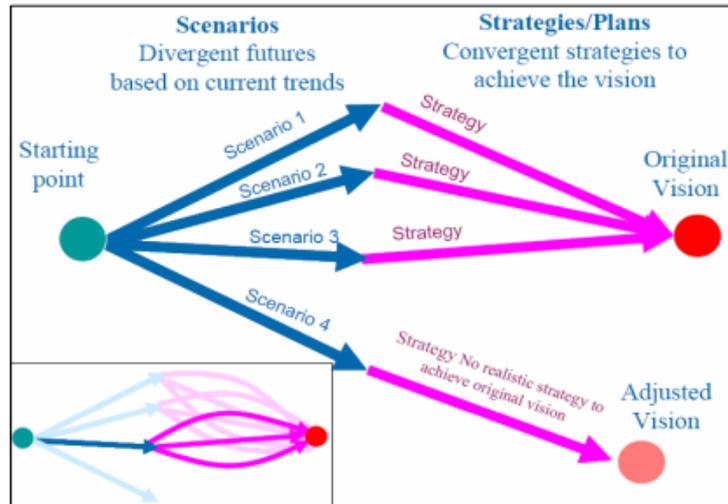
- **“Winning The Marathon”** is a normative scenario. This means that Shell have focused on how the energy system and energy mix in Germany could develop over time specifically to deliver the Green House Gas reduction target of at least 80% by 2050 (versus 1990). This scenario reveals that the target could be reached by pulling all possible levers and stretching them to the maximum. In this scenario, the transition plays out like a long race with many hurdles to overcome. Some of these will be easier to leap, while others will prove more difficult, and one or two may lead to stumbles. But ultimately Germany will complete the “marathon hurdle race” by successfully reaching its goals.
- **“Slowing Momentum”** builds on the same drivers, but with different quantifications. It assumes that the speed of overall change will be slower, with population and GDP growth also smaller. This scenario starts with high momentum in energy transition by the German government and in society based on proven successes of the last 10-20 years. Germany has ambitious targets, but due to internal and/or external factors, unexpected roadblocks will arise, delaying further implementation, slowing the momentum and therefore changing the trend. This will ultimately result in below-target decarbonisation of 70% by 2050. As the world around Germany continues to move fast, its lead position in exports will be challenged.

## Scenario thinking: International Water and Sanitation Centre

The International Water and Sanitation Centre (IRC) embarked on a scenario thinking initiative in 2004/2005 to explore a number of questions (IRC, 2005) what will have happened in the water, sanitation and hygiene (WASH) sector by the time the MDG target year of 2015 is reached? What will the operating environment be for a Northern NGO working in knowledge development, information management and capacity building? The report *WASH scenarios for 2015: A trends analysis paper* sought to address these questions. It was developed as part of a process of strategy development undertaken by the IRC. The report includes the outcome of a process of sector trend analysis, and scenario building that was developed over a period of about a year as part of the development of a new five-year business plan for IRC for the period 2007 to 2012.

This IRC paper is written from a very particular point of view, namely that of a medium-sized non-governmental resource centre, based in the Netherlands but operating exclusively in the Global South. The scenarios presented by IRC emerged from a “trend identification” meeting which was carried out at the beginning of 2005 as part of IRC’s process of strategic planning. It was hoped that the paper would contribute to wise choices, and so to the fulfilment of the WASH MDGs by 2015, or soon thereafter.

Figure 1: Vision, scenarios and strategies to achieve the vision



Source: Moriarty et al. (2005) cited in IRC (2005: 3).

The trends reflected the factors considered the most important to IRC and its vision. To identify these, IRC looked at possible developments in five different fields:

- General development trends, not specific to the water sector but which might have an impact;
- Financial trends in the water sector;
- Implications for approaches to working within the sector;
- Information-related trends;
- Water and sanitation content trends (a more general analysis).

Factors were initially identified during a brainstorming workshop by IRC staff, and were then elaborated and fleshed out by a small team. One key limitation was the lack of time to analyse beyond national average data, which was considered to hide national variations in key factors. Based on this analysis, and drawing on material in the trend analysis, four different scenarios emerged for possible future operating environments for the sector, indicating a variety of conflicting directions in which the WASH sector may develop in order to achieve the MDGs. These indicated a variety of conflicting directions in which the water, sanitation and hygiene sectors could develop.

**Scenario 1: Business as usual - many gain, many left behind.** Strong Dutch support to the sector, predominance of bilateral aid with a strong construction emphasis within the sector.

**Scenario 2: WASH dream - but beware of the capacity cowboys.** Strong Dutch support to the sector, predominance of bilateral coordinated aid and a strong emphasis on knowledge within the sector.

**Scenario 3: Sector Wide Approaches succeed - but instability and emergencies soak up aid.** Strong Dutch support to the sector, increase in multilateral aid and focus on hardware provision.

**Scenario 4: WASH nightmare.** Dutch disengage, MDGs left in the dust. Little Dutch support to the sector and Africa left to find its own way.

IRC (2005) comments that these four scenarios have been written with the intention of being as different from one another as possible, based on a combination of the most important and, at the same time, uncertain trends. It is important while reading to bear in mind that these are just stories - in some cases exaggerated (although not impossible) ones. IRC posits that the question is not 'are they right?' or 'do I agree with everything in them?' or 'aren't they too radical?' Rather, it is 'are they possible?' It is necessary to explore different potential futures to be sure that a chosen strategy (or strategies) is sufficiently robust for an organisation to achieve its vision.

It is also important to understand how the stories were created. The broad lines - the big differences - come from the important and uncertain factors. Into these are woven the other trends - especially the important but certain ones. IRC conclude that all four stories share a strongly developed Asia, a Latin America that is more or less as it is now, and development in sub-Saharan Africa that is lagging behind. Three reflect scenarios in which the Dutch remain an important sector actor - but with radically different behaviour. A fourth represents a scenario in which the Dutch decide to withdraw from the sector and from aid more generally.

## Critiques of scenario thinking

Whilst scenario thinking has yielded some insight into how organisations can anticipate and cope with change, it has not demonstrated its ability to inform organisation leaders about significant political, environmental, economic and/or societal change (Chermack et al., 2001). Whilst this critique is valid, many proponents of scenario planning assert that this technique does not claim to predict the future, rather it enables the telling of multiple stories that cover a variety of plausible future occurrences (McBain, 2017; Caldwell, 2001).

Sadri and Sadri (2009: 13) continue that there has only been anecdotal evidence offered in support of the value of scenarios, even as aids to forecasting; and most of this has come from one company – Shell. In addition, with so few organisations making consistent use of them – and with the timescales involved reaching into decades – it is unlikely that any definitive supporting evidence will be forthcoming in the foreseeable future. For the same reasons, though, a lack of such proof applies to almost all long-range planning techniques. For all these benefits, there is a downside to scenarios. Inexperienced people and organisations are prone to fall into a number of traps as summarised by Roxburgh (2009):

**Don't become paralysed:** Creating a range of scenarios that is appropriately broad, especially in today's uncertain climate, can paralyse an organisations leadership. The tendency to think we know what is going to happen is in some ways a survival strategy: it makes us confident in our choices (however misplaced that confidence may be). In the face of a wide range of possible outcomes, there is a risk the organisation becomes confused and lacking in direction, and it changes nothing in its behaviour.

Roxburgh (2009) suggests that to counter this tendency, organisations must to pick the scenario whose outcome seems most likely and to base a plan upon that scenario. It should be buttressed with clear contingencies if another scenario—or one that hasn't been imagined—begins to emerge instead. Ascertain the “no regrets” moves that are sound under all scenarios, or as many as possible. Ultimately, the existence of multiple possibilities should not distract an organisation from having a clear plan.

**Don't let scenarios muddy communications:** Roxburgh (2009) highlights that the former CEO of a global industrial company once suggested that scenarios are an abdication of leadership. His point was that a leader has to set a vision for the future and persuade people to follow it. Roxburgh (2009) comments that leaders can use scenarios without abdicating their leadership responsibilities but should not communicate with the organisation via scenarios.

Organisational leaders must provide clear and inspiring leadership. That doesn't mean these leaders should not study and prepare for a number of possibilities. Understanding the range of likely events will embolden leaders to feel prepared against most eventualities and allow those leaders to communicate a single, bold goal convincingly. A wide range of scenarios—even if not publicly discussed—can help prevent leaders from making statements that can be proven wrong if one of the more extreme scenarios unfolds.

**Don't rely on an excessively narrow set of outcomes:** One of the more dangerous traps of using scenarios is that they can induce a sense of complacency. In this regard at least, they are not so different from the value-at-risk models employed by the financial sector. Those models typically provided the financial sector with probabilistic projections of what would happen 99% of the time. This induced a false sense of security about the potentially catastrophic effects of an event with a 1% probability. Creating scenarios that do not cover the full range of possibilities can leave you exposed exactly when scenarios provide most comfort. Even when constructing scenarios, it is easy to be trapped by the past.

The breadth of a scenario set can be tested by identifying extreme events—low-probability, high-impact outcomes—from the past 30 or 40 years and seeing whether the scenario set contains anything comparable. Organisations cannot build all possible events into their scenarios, and should not spend too much time on the low-probability ones. But they must be sure of surviving high-severity outcomes, so such possibilities must be identified and kept on a watch list.

**Don't chop the tails off the distribution:** According to Roxburgh (2009) when people are presented with a range of scenarios, they tend to choose one or two immediately to the right and left of reality as they experience it at the time. They regard the extreme scenarios as a waste because “they won't happen”. By ignoring the outer scenarios and spending their energy on moderate improvements or deteriorations from the present, organisations leave themselves exposed to dramatic changes—particularly on the downside. Strategists must include “stretch” scenarios while acknowledging their low probability.

**Don't discard scenarios too quickly:** Sometimes the most interesting and insightful scenarios are the ones that initially seem the most unlikely. This raises the question of how long organisations should hold on to a scenario. Roxburgh (2009) asserts that scenarios ought to be treated dynamically. Depending on the level of detail they aspire to, some might have a shelf life numbered only in months. Others may be kept and reused over a period of years. To retain some relevance, a scenario must be a living thing. Scenarios get better if revised over time. It is useful to add one scenario for each that is discarded; a suite of roughly the same number of scenarios should be maintained at all times.

**Remember when to avoid scenarios altogether:** Finally, Roxburgh (2009) concludes that strategists will not want to use scenarios when uncertainty is so great that they cannot be built reliably at any level of detail. Just as scenarios help to avoid groupthink, they can also generate a groupthink of their own. If everyone in an organisation thinks the world can be categorised into

four boxes on a quadrant, it may convince itself that only four outcomes or kinds of outcomes can happen.

**Don't use a single variable:** The future is multivariate, and there are elements that strategists will miss. They should therefore avoid scenarios that fall on a single spectrum (“very good,” “good,” “not so good,” “very bad”). At least two variables should be used to construct scenarios—and the variables must not be dependent, or in reality there will be just one spectrum.

### 3. Case Studies

#### Scenario thinking: USAID

In 2005, the Department of State and the US Agency for International Development (USAID) undertook a detailed programme with over 24 civilian and counterpart federal agencies entitled “Project Horizon.” Project Horizon, inspired by USAID Administrator Andrew Natsios, looked at various “world scenarios” using trend and futures analysis and focused on what capabilities the US government maintained to deal with those scenarios. Project Horizon conducted scenario planning exercises aimed at strengthening US interagency coordination. Despite undertaking this ambitious project, within two years of implementation, the US government partners abandoned the exercise, likely overcome by other pressing requirements (i.e., Afghanistan, Iraq, Pakistan earthquake response, famine in the Sahel, etc.) (Grieco, 2015: 39).

In 2011, USAID embarked on another round of scenario planning generating scenarios up to 2030. They organised the first-ever USAID Symposium on Future Development Challenges in Washington and brought together experts from a number of different disciplines to focus on an integrative, multidisciplinary approach to futures analysis. The symposium was divided into three sessions: Evolutions, Revolutions, and Vision 2025. These three sessions were distinguished by their outlook. Evolutions focused on gradual “evolutionary” changes consistent with traditional trends and futures analysis. Revolutions looked at unexpected “revolutionary” events and the shocks to the system that produce game-changing effects, often jump-started by new technological advances. The third session, Vision 2025, built on the first two sessions and explored a combined “vision” of what development will look like in 2025 and beyond (Gale & Jackson, 2013).

This focused exercise looked exclusively at international development and was a partnership between USAID; Department of State, Bureau of Intelligence and Research; National Defense University (NDU); and the Wilson Centre (WC). The goal of this exercise was to host a definitive international symposium on “Futures Analysis” so as to provide an “over the horizon view of development”. Given Project Horizon’s fate, this was a bold undertaking. The programme introduced four cross-cutting themes within each of the three sessions to help focus discussion:

- populations;
- science and technology;
- politics and economies, and
- environment.

Gale and Jackson (2013) from USAID commented that ‘while understanding the past is important, our real concern must be with the future of development. New forces are rapidly changing the global context for development. The development challenges facing countries today

is far different than it was just 20 years ago. Future success will depend on understanding the past, but even more so in taking advantage of new opportunities and preparing to meet emerging threats and challenges. Six key dimensions of change stand out'. According to USAID (Gale & Jackson, 2013: 106-107), these can be surmised as follows:

- Pressures are growing from demographic trends, resource demand, and climate change. By 2050, the world's population will grow to around 10 billion people, with the fastest growth in developing countries, and more specifically, in urban areas of developing countries. Demand for critical resources, especially water, land and energy, will grow rapidly. Global demand for food and water is likely to increase by 50% in just the next 20 years. Climate change will only add to these challenges.
- New technologies are changing the development process. Cell phones have become ubiquitous, and Internet access is growing quickly. The cost of shipping goods and moving people is far lower than it was just 20 years ago. These technologies are creating new economic opportunities, helping to deliver basic services, facilitating political debate, and improving transparency and accountability, all of which strengthen the prospects for continued progress in many low-income countries. And their influence will only grow in the years to come.
- Democracy has expanded rapidly, especially following the end of the Cold War and the collapse of the Soviet Union. Democracy emerged in countries as diverse as South Korea, Indonesia, Poland, South Africa, Ghana, Brazil, and El Salvador. To be sure, these democracies are fragile and far from perfect, but never before have so many low-income countries attempted to become democracies in so short a time.
- There are enormous and growing differences in performance across countries. High performing countries have an expanding middle class, higher saving rates, larger markets, more government revenue, more trained and capable workers, and more foreign investment. Some emerging markets — especially the so-called BRICs (Brazil, Russia, India, and China) are becoming some of the largest markets in the world, while the old reliable rich country markets in Europe, the United States, and Japan are under enormous pressure. The result is a dramatic change in the global economic balance. But at the same time, other developing countries remain stuck with slow growth, little investment, stagnant revenue and saving, few new economic opportunities, and often greater conflict.
- In just 10 years between 2001 and 2010, net private capital flows to developing countries grew six-fold from less than \$200 billion to over \$1 trillion. Investors are arriving from around the world, including middle-income emerging economies such as China, India, Malaysia, Brazil, Russia, South Africa, and many others. These capital flows create some risks, but overall create huge new opportunities for job creation, skills transfer, and growth in developing countries. They now dwarf official aid flows.
- Religious and ethnic tensions are rising in many parts of the world, creating disputes and conflicts that are disrupting or, in some cases, reversing development. The tensions are obvious in Afghanistan, Pakistan, Somalia, Sudan, Iraq, and many other places. They are a major undercurrent in the still-unfolding Arab spring, and more recently have become major problems in other countries such as Mali and Egypt.

With these global changes unfolding, USAID considered the future for developing countries to be uncertain. USAID identified at least three forward-thinking scenarios which are broadly outlined below (Gale & Jackson, 2013: 107-109):

**Scenario 1: The continuation of rapid global development.** The trends of the last 20 years expand and accelerate. The BRICs continue their ascendancy, with several other middle income countries following closely behind, including Turkey, Indonesia, Thailand, South Africa, and Chile. Many low-income countries continue to expand their economies and reduce poverty, such as Ghana, Tanzania, El Salvador, the Dominican Republic, the Philippines, and Bangladesh. As more countries succeed, markets for trade grow between developing countries, allowing markets to expand regionally and beyond. Moreover, pressure grows in the countries left behind to follow the examples of their more successful neighbours. Technologies, experiences, and ideas that succeed in one country spread easily to another. Mobile phone use continues to expand, the Internet (and the opportunities it creates) makes an even bigger impact on the poorest countries, and new research leads to an expansion in agricultural productivity. Countries that have been “stuck” begin to turn around, including Cote D’Ivoire, Nigeria, and Egypt.

Along with this growth, the extraordinarily rapid advances in global health continue, with a halt in the spread of the HIV/AIDS epidemic, reductions in malaria, the extermination of polio, and the elimination of preventable childhood diseases. Global poverty rates continue to decline sharply. Democracy continues to spread — although haltingly and imperfectly — with more countries embracing accountability, transparency, and good governance. Some countries continue to stagnate, but their number becomes smaller, and they increasingly become the exception rather than the norm.

**Scenario 2: Global conflict derails development.** Global tensions rise sharply, either based on economic strains from the rise of Asia and decline of Europe, or based on religious or ideological frictions. Countries move into new geo-political spheres, replacing the two old Cold War spheres with blocks aligned around traditional western powers, an ascendant China, an empowered India, and a coalition of Muslim countries. Conflict in the Middle East explodes, and quickly spills over to South Asia, North Africa, and Central Asia. Economic disputes between a rising Asia and a diminishing West decay into major trade wars, and an aging and frustrated West becomes more tempted to use the threat of advanced weapons to keep others in check. Tensions within Asia rise over territorial waters and claims to undersea resources.

**Scenario 3: Increasing pressure on the planet.** The combination of rising urban populations and increasing incomes puts growing pressures on water supplies, energy, demand for minerals, and air quality — challenges created in part by the recent great success of global development. Climate change undermines agricultural productivity and diminishes food supplies while global demand for food reaches an all-time high. Commodity prices rise steadily, while food prices accelerate their recent trends of both extreme volatility and steady increases. As agricultural productivity falls in many developing countries, poverty rates halt their decline and begin to rise again. This scenario then morphs into Scenario 2. Pressure on the planet and the demand for scarce resources (such as water) lead to an explosion of conflict and the end of global development.

## Scenario thinking: UNAIDS

UNAIDS deployed scenario thinking to inform their policy development in Africa, producing a report titled *AIDS in Africa: Three Scenarios to 2025* (2005). The project used stories rather than projections to explore the future of AIDS in Africa over the next 20 years. The authors of the report highlighted that statistics may give a succinct and tragic snapshot of recent events, but they say little of the AIDS epidemic’s wider context, or its complex interconnections with other

major issues, such as economic development, human security, peace, and violence. Statistics can only hint at the future.

The scenarios were created by a team of about 50, mainly African, men and women. Most of them live and work in Africa, dealing daily with the effects of the epidemic. The project was set out to be provocative rather than comprehensive, stimulating questions and exploration, rather than trying to provide all the answers.

Each of the three scenarios describes a different, plausible way in which the AIDS epidemic could play out across the whole of the African continent. They are rigorously constructed accounts of the future that use the power of story-telling as a means of going beyond the assumptions and understandings of any one interest group, in order to create a shared basis for dialogue and action about critical and difficult issues.

The scenarios aim to go beyond a description of current events and to uncover some of the deeper dynamics that prompt the spread of the epidemic. These play out in three different ways in the three different scenarios.

The scenarios project was based on two key assumptions (UNAIDS, 2005: 13):

- That AIDS is not a short-term problem whatever is done today, it remains inevitable that AIDS will still be affecting Africa 20 years from now. However, it remains uncertain in what ways, and by how much, Africa's future will be shaped by AIDS.
- That decisions taken now will shape the future history of the continent. This project does not prescribe what those decisions should be. Instead, it aims to provide a tool to help people make better decisions, by exploring the interconnectedness of social, cultural, economic, and political factors and by identifying—and challenging—the often implicit assumptions that influence their thinking.

The future is fundamentally uncertain, but these scenarios suggest that there are some critical uncertainties surrounding the AIDS epidemic:

- How is the AIDS crisis perceived, and by whom? If AIDS is perceived primarily as a health problem, or an issue of personal behavioural change, the response will be very different to one where the magnitude of the AIDS epidemic in Africa is perceived to be a symptom of underdevelopment and inequality. It is one thing for governments to define the problem, but if their definition is not shared by their civil societies (or vice versa), the response is unlikely to be coherent. If the problem is perceived in one way by donors, and in another by governments, again, the ensuing action is unlikely to be optimal.
- Will there be both the incentive and capacity to deal with it? Will the current level of interest in the AIDS epidemic be sustained, and will the incentive and resources available for addressing the epidemic and its impact be commensurate with need?

Five powerful driving forces were identified in the project as being crucial to the future of HIV and AIDS in Africa. These drivers each have their own dynamic and operate at many different levels, from the household and community, to the regional and international arenas. In addition, these drivers interact, creating further complex dynamics. Consideration of these drivers and their interaction provides a powerful analytical tool for examining events in the past and present, and for considering plausible future developments. It is from the interplay of these drivers that the scenarios have been created:

- The growth or erosion of unity and integration.
- The evolution of beliefs, values, and meanings.
- The leveraging of resources and capabilities.
- The generation and application of knowledge.
- The distribution of power and authority.

The scenarios initially set out to answer one central question: “Over the next 20 years, what factors will drive Africa’s and the world’s responses to the AIDS epidemic, and what kind of future will there be for the next generation? Responses to this question led to the creation of the following scenarios (UNAIDS, 2005: 15-20):

**Tough choices: Africa takes a stand:** ‘Tough choices’ tells a story in which African leaders choose to take tough measures that reduce the spread of HIV in the long term, even if it means difficulties in the short term. This scenario shows that, even with fluctuating aid, economic uncertainty, and governance challenges, collectively, Africa can lay the foundation for future growth and development, and reduce the incidence of HIV. In this scenario, governments insist that HIV and AIDS are tackled as part of an overall, coherent strategy for national medium-term and long-term development. They impose discipline on themselves, each other, and their external partners (if they refuse to take this on themselves) and demand that action match rhetoric. The scenario identifies a series of tough choices and careful balancing acts.

**Traps and legacies - The whirlpool:** ‘Traps and legacies’ is a story in which Africa as a whole fails to escape from its more negative legacies, and AIDS deepens the traps of poverty, underdevelopment, and marginalisation in a globalising world. Despite the good intentions of leaders and substantial aid from international donors, a series of seven traps prevent all but a few nations or privileged segments of the population from being able to escape continuing poverty and continued high HIV prevalence.

The scenario suggests that HIV and AIDS will continue to receive very strong emphasis in the near future—but that responses are fractured and short-term, often fail to reflect the realities of everyday life, and therefore fail to deliver a lasting solution. By 2025 the demographic, social, and economic impacts of the epidemic, repeated over several generations (particularly in countries with an HIV prevalence of over 5%), have depleted the resources of households and communities. A ‘missing’ generation of grandparents is just one example of the demographic impacts, while a growing number of children orphaned by the epidemic are less skilled, less cared for, and less socially integrated than their parents. Many have little to lose, and perhaps feel they may gain from conflict and instability. The effects of these social impacts spill over into countries with lower HIV prevalence. The seven traps identified preclude effective, long-term, or widespread development in Africa.

**Times of transition - Africa overcomes:** ‘Times of transition’ is the story of what might happen if all of today’s good intentions were translated into the coherent and integrated development response necessary to tackle HIV and AIDS in Africa. A set of six interlocking transformations reshaping Africa’s future, and its place in the world, is identified in the scenario.

Taken as a set, the three scenarios introduce some important considerations for activists, policymakers, programme-planners, and those implementing actions to take into account as they think about the future. Developing scenarios is only a first step: they are more effectively

explored and applied through interactive processes that encourage users to reflect on their individual and collective assumptions and understanding.

## Scenario thinking: JICA Research Institute

The JICA Research Institute (2013) undertook a scenario thinking exercise to explore African development challenges publishing a report in 2013 titled, *Development Challenges in Africa: Towards 2050*. Three scenarios of Africa's future economic trajectory through 2050 are presented: the "Convergence" scenario, the "Business as Usual" scenario, and the "Downside" scenario. The scenarios were developed with Centennial Group International's Global Economy Model which was also used in the Asia 2050 and Latin America 2040 studies (JICA, 2013: 7).

JICA identified a number of broad trends or drivers that would influence Africa's economic performance (1960-2011) and help inform the development of scenarios. These included:

**Macroeconomics:** JICA traces the economic performance of Africa since 1960, distinguishing between two sub periods; 1960-mid-1990s and the strengthened performance from the mid-1990s to date. The analysis focuses on investment and savings performance. It starts by reviewing recent trends in investment and saving rates, and then presents policy recommendations to raise these rates to the levels that are required in the coming decades to underpin sustained high growth rates. This section also outlines the macroeconomic policy framework for sustainable high growth and inclusion, i.e., to achieve the Africa 2050 vision (JICA, 2013: 12).

**Demography:** JICA identifies the dual challenge facing most African countries i.e. to deal with the demographic situation inherited from the past, whilst preparing at the same time for a better future for the upcoming generations. They comment that this can be managed through the design and implementation of sound population, health, education, and economic policies. However, these policies must be put in place as soon as possible for these countries to be able to capture the benefits of a demographic dividend, trigger inclusive growth, reduce poverty levels, and eventually achieve economic convergence (JICA, 2013: 51).

**Poverty and Inequality:** There is broad consensus that the key determinants of sustained growth are effective political and economic institutions, an outward orientation, macroeconomic stability and human capital accumulation. However, what is also being increasingly recognised is that income equality is also, independently, an important pre-requisite for sustained growth. While some inequality may be a result of market economy in terms of incentives for investment and growth, too much inequality can be destructive to growth (JICA, 2013: 85).

**Urbanisation:** Over the next 40 years, Africa will have the fastest growing cities in the world. About 800 million Africans will either migrate to, or be born in, urban areas in the next four decades. By 2050 Africa's cities and towns will house nearly 1.5 billion people, 60% of the region's projected population. This urban population will be relatively young. With projected population growth rates in excess of 2%, the median age will continue to drop from the current 19.7 years. The number of youth will increase from 205 million today to anywhere from 330 to 450 million, the majority of whom will live in urban areas. These demographic shifts can lead to higher productivity and per capita incomes, or to unmanageable social tensions, violence, and conflict. The "Arab Spring" demonstrates how youth disillusionment can rapidly gain momentum, particularly in urban areas where access to services and opportunities has lagged (JICA, 2013: 102).

**Natural resources:** The key challenge faced by Africa's resource-rich countries consists of transforming the resources in the ground into assets that lead to strong sustainable growth, economic diversification, reduction of inequality and poverty, and equity between generations (JICA, 2013: 117).

JICA (2013) developed three scenarios based on the trends which are presented below.

**The convergence scenario** assumes strong reform action. Under such a scenario per capita incomes in Africa could grow by 4.6% annually over the next 40 years and exceed USD 17,000 (2010 PPP US dollars) in 2050. Africa-wide per capita income would be higher than that of Russia, Malaysia or Turkey today. Under such a scenario, Africa's average per capita income would rise from 27% of the world average today to 52%. Such sustained growth would set in motion many changes which would genuinely transform the lives of Africans and Africa's role in the world. The size of the middle class would increase more than 100-fold and increase to 69% of the population from 12%. The number of poor would decline to 53 million (or under 3% of the population) from 384 million (or 36%) today. In global terms Africa's share of world GDP would more than triple from less than 3% today to 9% in 2050 (JICA, 2013: 7).

**The business-as-usual scenario** assumes that Africa's higher investment rates of recent years continue, its labour force continues to grow, commodity prices remain high, and the generally improved policies of the last 10-15 years are maintained—but there is no sustained action on the remaining policy and institutional reform agenda and therefore these determinates of growth would not improve further. As a result, on the productivity front nothing much changes. The opportunity cost borne by average Africans would be enormous if the African economies fail to realise the convergence scenario and remain stuck in the business-as-usual scenario, resulting in per capita income decreased by more than USD 10,000, some 40% of the population (895 million) unable to reach middle class status, and an additional 15% of the population (325 million) mired in poverty (JICA, 2013: 7-8).

**The downside scenario** could be triggered by an increase in fragility and conflict, growing inequality, a failure to slow population growth, or commodity price swings. Under the downside scenario per capita income would grow by less than 1% a year, reaching only USD 4,000 (2010 US dollars PPP) in 2050. But, given faster growth in the rest of the world, it would fall to only 15% of the world average. One in three Africans would still be in poverty. On the global stage Africa would have only 2% of world GDP. Such a scenario must be avoided at all costs.

## 4. References

Amer, M. et al. (2012). *A review of scenario planning*. Futures 46. [https://ac.els-cdn.com/S0016328712001978/1-s2.0-S0016328712001978-main.pdf?\\_tid=2ddb380-b340-11e7-a61e-0000aacb361&acdnat=1508247569\\_73e848799b7348a4c4e7e0b5d355f720](https://ac.els-cdn.com/S0016328712001978/1-s2.0-S0016328712001978-main.pdf?_tid=2ddb380-b340-11e7-a61e-0000aacb361&acdnat=1508247569_73e848799b7348a4c4e7e0b5d355f720)

Caldwell, R. (2001). *Building Scenarios: a Short Course*. University of Arizona. <https://cals.arizona.edu/futures/tou/tut2-buildscenarios.html>

Chermack, T. et al. (2001). *A Review of Scenario Planning Literature*. <https://scienceimpact.mit.edu/sites/default/files/documents/Scenario%20PlanningA%20Review%20of%20the%20Literature.PDF>

- De Geus, A. (1988). *Planning as Learning*. Harvard Business Review. <https://hbr.org/1988/03/planning-as-learning>
- Erdogan, B. et al. (2009). A Scenario Planning Approach. *Journal of Information Technology in Construction*. August 2009. [http://www.itcon.org/papers/2009\\_35.content.01323.pdf](http://www.itcon.org/papers/2009_35.content.01323.pdf)
- Foresight Horizon Scanning Centre (2009). *Scenario Planning*. HM Government Office for Science. [http://webarchive.nationalarchives.gov.uk/20140108141323/http://www.bis.gov.uk/assets/foresight/docs/horizon-scanning-centre/foresight\\_scenario\\_planning.pdf](http://webarchive.nationalarchives.gov.uk/20140108141323/http://www.bis.gov.uk/assets/foresight/docs/horizon-scanning-centre/foresight_scenario_planning.pdf)
- Gale, S. and Jackson, S. (2013). *The Future Can't Wait: Over-the-Horizon Views on Development*. USAID. <https://www.usaid.gov/sites/default/files/documents/15396/TheFutureCantWait.pdf>
- Gale, S. and Williams, R. (2015). *Scenario Planning for Development: It's About Time*. New Security Beat. <https://www.newsecuritybeat.org/2015/09/scenario-planning-development-its-time/>
- Grieco, J. (2015). *Moving Toward Improved Strategic Planning in U.S. Foreign Policy*. The Simons Centre. <http://thesimonscenter.org/wp-content/uploads/2015/07/IAJ-6-3-Summer-2015-39-46.pdf>
- IRC - International Water and Sanitation Centre (2005). *WASH scenarios for 2015: A trends analysis paper*. IRC. <https://www.ircwash.org/sites/default/files/Fonseca-2006-WASH.pdf>
- Japan International Cooperation Agency (2013). *Development Challenges in Africa: Towards 2050*. JICA. [https://www.jica.go.jp/jica-ri/publication/booksandreports/jrft3q00000029i2-att/TICAD\\_Africa\\_2050\\_JICA-RI.pdf](https://www.jica.go.jp/jica-ri/publication/booksandreports/jrft3q00000029i2-att/TICAD_Africa_2050_JICA-RI.pdf)
- McBain, B. (2017). *Scenarios – creating alternate futures when we just don't know*. University of Nottingham Blogs. <https://uonblogs.newcastle.edu.au/herdingthegreenchicken/2017/05/16/scenarios-creating-alternate-futures-just-dont-know/>
- Mercer, D. (1995). Simpler scenarios. *Management Decision*, Vol. 33 Issue. <https://doi.org/10.1108/00251749510084662>
- ODI - Overseas Development Institute (2009). *Strategy Development: Scenario Testing and Visioning*. ODI. <https://www.odi.org/publications/5213-scenario-planning-learning-visioning>
- Porter, M. (1985). *Competitive Advantage*. New York: Free Press.
- Radelet, S. (2013) 'Can Global Development Progress Continue? Three Future Scenarios and What They Depend On' in Gale, S. and Jackson, S. (2013). *The Future Can't Wait: Over-the-Horizon Views on Development*. USAID. <https://www.usaid.gov/sites/default/files/documents/15396/TheFutureCantWait.pdf>
- Ramalingan, B. (2009). *Tools for Knowledge and Learning A Guide for Development and Humanitarian Organisations*. ODI.
- Ringland, G. (1998). *Scenario Planning: Managing for the Future*. Wiley and Sons Ltd.

Roxburgh, C. (2009). *The Use and Abuse of Scenarios*. McKinsey & Company. <https://www.mckinsey.com/business-functions/strategy-and-corporate-finance/our-insights/the-use-and-abuse-of-scenarios>

Sadri, S. & Sadri, J. (2009). Case writing and scenario planning as instruments of corporate training: an exposition. *Journal of Management Research*. <http://www.bvimsr.com/documents/publication/2009VN3/09.pdf>

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

Schoemaker, P. (1995). *Scenario Planning: a Tool for Strategic Thinking*. Sloan Management Review. 36: 2. [https://www.researchgate.net/profile/Paul\\_Schoemaker/publication/220042263\\_Scenario\\_Planning\\_A\\_Tool\\_for\\_Strategic\\_Thinking/links/0deec5325c34174de2000000/Scenario-Planning-A-Tool-for-Strategic-Thinking.pdf](https://www.researchgate.net/profile/Paul_Schoemaker/publication/220042263_Scenario_Planning_A_Tool_for_Strategic_Thinking/links/0deec5325c34174de2000000/Scenario-Planning-A-Tool-for-Strategic-Thinking.pdf)

Shell (2013). *New Lens Scenarios: a Shift in Perspective for a World in Transition*. Shell. [http://www.shell.com/energy-and-innovation/the-energy-future/scenarios/new-lenses-on-the-future/\\_jcr\\_content/par/relatedtopics.stream/1448477051486/08032d761ef7d81a4d3b1b6df8620c1e9a64e564a9548e1f2db02e575b00b765/scenarios-newdoc-english.pdf](http://www.shell.com/energy-and-innovation/the-energy-future/scenarios/new-lenses-on-the-future/_jcr_content/par/relatedtopics.stream/1448477051486/08032d761ef7d81a4d3b1b6df8620c1e9a64e564a9548e1f2db02e575b00b765/scenarios-newdoc-english.pdf)

Shell (2017). Shell Energy Scenarios: Germany. Shell. [http://www.shell.com/energy-and-innovation/the-energy-future/scenarios/what-are-scenarios/\\_jcr\\_content/par/tabbedcontent/tab/textimage\\_25172244.stream/1504104048141/c1c44f23149c7604853b92e1be624a6ac49cd08fcdc269890448bb62f6cd0499/shell-energy-scenarios-germany.pdf](http://www.shell.com/energy-and-innovation/the-energy-future/scenarios/what-are-scenarios/_jcr_content/par/tabbedcontent/tab/textimage_25172244.stream/1504104048141/c1c44f23149c7604853b92e1be624a6ac49cd08fcdc269890448bb62f6cd0499/shell-energy-scenarios-germany.pdf)

UNAIDS (2005). *AIDS in Africa: Three Scenarios to 2025*. The Joint United Nations Programme on HIV/AIDS. [http://data.unaids.org/publications/irc-pub07/jc1058-aidsinafrica\\_en.pdf](http://data.unaids.org/publications/irc-pub07/jc1058-aidsinafrica_en.pdf)

## Suggested citation

Avis, W. (2017). *Scenario thinking - Usage among development actors*. K4D Helpdesk Report 221. Brighton, UK: Institute of Development Studies.

## About this report

*This report is based on five days of desk-based research. The K4D research helpdesk provides rapid syntheses of a selection of recent relevant literature and international expert thinking in response to specific questions relating to international development. For any enquiries, contact [helpdesk@k4d.info](mailto:helpdesk@k4d.info).*

*K4D services are provided by a consortium of leading organisations working in international development, led by the Institute of Development Studies (IDS), with Education Development Trust, Itad, University of Leeds Nuffield Centre for International Health and Development, Liverpool School of Tropical Medicine (LSTM), University of Birmingham International Development Department (IDD) and the University of Manchester Humanitarian and Conflict Response Institute (HCRI).*

*This report was prepared for the UK Government's Department for International Development (DFID) and its partners in support of pro-poor programmes. It is licensed for non-commercial purposes only. K4D cannot be held responsible for errors or any consequences arising from the use of information contained in this report. Any views and opinions expressed do not necessarily reflect those of DFID, K4D or any other contributing*



organisation. © DFID - Crown copyright 2017.

## 5. Annex

### Comparison of the principle scenario development techniques

M. Amer et al./Futures 46 (2013) 23–40

Table 1  
Comparison of the principal scenario development techniques [13].

Scenario characteristics	Intuitive logics methodology	La prospective methodology	Probabilistic modified trends (PMT) methodology
Purpose	Multiple, from a one-time activity to make sense of situations and developing strategy, to an ongoing learning activity	Usually a one-time activity associated with developing more effective policy and strategic decisions	A one-time activity to make extrapolative prediction and policy evaluation
Scenario type/perspective	Descriptive or normative	Generally descriptive	Descriptive
Scope	Can be either broad or narrow, ranging from global, regional, country, industry to a specific issue	Generally a narrow scope but examines a broad range of factors within that scope	Scope is narrowly focused on the probability and impact of specific events
Time frame	Varies: 3–20 years	Varies: 3–20 years	Varies: 3–20 years
Methodology type	Process oriented approach, essentially subjective and qualitative	Outcome oriented approach, which is directed, objective, quantitative and analytical relying on complex computer based analysis and modelling	Outcome oriented approach, very directed, objective, quantitative and analytical using computer based extrapolative simulation models
Nature of scenario team	Usually an internal team from the organization for developing scenarios	Combination of some members from client organization led by an expert (external consultant)	External teams, scenario developed by experts (external consultants)
Role of external experts	Experienced scenario practitioner to design and facilitate the process. External experts are used to obtain their views for new ideas	Leading role of external expert using an array of proprietary tools for comprehensive analysis	Leading role of external expert using proprietary tools and expert judgments to identify high impact unprecedented events
Tools	Generic tools like brainstorming, STEEP analysis, and stakeholder analysis	Proprietary and structural tools like Micmac, SMIC and Mactor analysis etc.	Proprietary tools like trends impact and cross impact analysis etc.
Starting point	A particular management decision, issue or general concern	A specific important phenomenon of concern	Decisions/issues for which detailed and reliable time series data exists
Identifying key driving forces	Intuition, STEEP analysis, research, brainstorming techniques, and expert opinion	Interviews with stakeholders and comprehensive structural analysis using sophisticated computer tools	Curve fitting to past time series data to identify trends and use expert judgment to create database of unprecedented events
Developing scenario set or principles	Defining the scenario logics as organizing themes	Matrices of sets of possible assumptions based on the key variables for future	Monte Carlo simulations to create an envelope of uncertainty around base forecasts
Output of scenario exercise	Qualitative set of equally plausible scenarios in narrative form with strategic options, implications, and early warning signals	Multiple quantitative and qualitative scenarios supported by comprehensive analysis, implications and possible actions	Quantitative baseline case plus upper and lower quartiles of adjusted time series forecasts
Use of probabilities	No, all scenarios are equally probable	Yes, probability of the evolution of variables under assumption sets of actors' behavior	Yes, conditional probability of occurrence of unprecedented and disruptive events
No. of scenarios	Generally 2–4	Multiple	Usually 3–6 depends on the no. of simulations
Evaluation criteria	Coherence, comprehensiveness, internal consistency, novelty, supported by rigorous structural analysis and logics	Coherence, comprehensiveness, internal consistency tested by rigorous analysis; plausible and verifiable in retrospect	Plausible and verifiable in retrospect