

Scenarios as a Tool for Sparking Public Discourse on Futures



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Table of Contents

SUMMARY	4
1 INTRODUCTION	5
1.1 THE SITUATION: SCENARIOS AND THE PUBLIC.....	5
1.2 THE PROBLEM: SCENARIOS FOR THE PUBLIC.....	6
1.3 KNOWLEDGE GAP	6
1.4 RESEARCH OBJECTIVE.....	7
1.5 RESEARCH QUESTIONS & FRAMEWORK	7
1.5.1 <i>Reader's Guide</i>	9
1.6 SCIENTIFIC RELEVANCE	10
1.7 SOCIETAL RELEVANCE.....	10
1.8 COUNTRY CONTEXT: GUYANA.....	11
2 THEORY	13
2.1 THE ANTHROPOCENE.....	14
2.2 SUSTAINABILITY TRANSFORMATIONS.....	14
2.2.1 <i>The Multi-Level Perspective</i>	16
2.3 ENVISIONING THE FUTURE	17
2.4 SCENARIOS.....	19
2.5 SPARKING PUBLIC DISCOURSE	20
2.5.1 <i>Setting the Public Agenda</i>	21
2.5.2 <i>Virality</i>	22
2.5.3 <i>Public Engagement</i>	22
3 METHODS	23
3.1 DATA COLLECTION	23
3.2 OPERATIONALIZATION OF VARIABLES.....	29
3.3 DATA ANALYSIS	29
3.4 RELIABILITY & BIAS.....	29
4 RESULTS	31
4.1 SCENARIOS.....	31
4.1.1 <i>Information Age</i>	32
4.1.2 <i>Bread Basket</i>	34
4.1.3 <i>Glass Ceiling</i>	36
4.1.4 <i>Greasy Palms</i>	39
4.2 ANSWERS TO RESEARCH QUESTIONS	41
S1: <i>What is the potential of public scenarios to contribute to transformational change?</i>	41
S2: <i>How should scenarios be designed (content, process, format & platform) to encourage public consumption and engagement?</i>	42
S3: <i>Who should be involved in the creation and dissemination of scenarios aimed at sparking public discourse? How, when and why should they be involved?</i>	47
S4: <i>What new public interactions occur as the result scenarios' publication in the media?</i>	48
RQ: <i>How can scenarios be used to open public discourse about the possibility of different futures?</i> 50	
5 DISCUSSION	57

6	CONCLUSION	58
6.1	ACKNOWLEDGEMENTS.....	58
7	REFERENCES	59
8	APPENDICES.....	65
A.	INTERVIEW	65
B.	SURVEY	67
C:	SURVEY RESPONSES SUMMARY	73

SUMMARY

Whether it be for sustainability transitions or more targeted agendas, the world right now is going through an intense and dramatic period of change. In times of uncertainty, it is important for people to have a shared vision of what they want their world to look like when the dust settles. Scenarios are a tool to help construct this vision. Scenarios are narratives of potential futures told in words, numbers or images that aim to free the human imagination to explore the possibilities of what could be. They are usually offered as a way to conceptualize different possible futures when imaginations are restricted and can be especially useful and inspiring in times of uncertainty.

More and more there is an echo of the need to include the public in decision-making processes. To open public discourse about the possibility of different futures means to spark public conversations about the idea that the future is not just influenceable, but designable, and that the choices made in the present have the power to steer us down a multitude of different paths. Using scenarios to achieve this is possible, as this research will show. By allowing the public to discuss and negotiate between different possible pathways with real trade-offs the scenarios can give agency back to the people by showing them that the power to decide is theirs. In realizing that they have consequential choices and are not just being granted the illusion of choice to placate them, the power to create an infinite number of possible futures becomes real.

This project will explore how scenarios can be used to open public discourse about the possibility of different futures, and what is needed to create those scenarios. It presents four scenarios that were developed following this process that were released into the public domain via publication in the media and then examines the results therein. It concludes by showing that for scenarios to engender discourse about the possibility of different futures, people's minds cannot already be made up about which future they want before the discussion starts, meaning that the difference in desirability among the scenarios cannot be too stark. Scenarios for public consumption should be designed with the public as the first priority and be strategically released to encourage discursive engagement.

1 INTRODUCTION

Whether it be for sustainability transitions or more targeted agendas, the world right now is going through an intense and dramatic period of change. In times of uncertainty, it is important for people to have a shared vision of what they want their world to look like when the dust settles. Scenarios are a tool to help construct this vision. As we stand at the crossroads in history between the Holocene and the Anthropocene, between fossil fuels and renewables, segregation and community, and capitalism and sustainability, we have the opportunity to design and create a future that is better for the planet and all those who inhabit it.

1.1 THE SITUATION: SCENARIOS AND THE PUBLIC

"What the mind can conceive and believe, it can achieve"

- Napoleon Hill

It's no wonder that people feel anxious when thinking about climate change when they are only presented with one possible outcome of it (Doherty & Clayton, 2011; Weintrobe, 2013). Repeatedly, in the media and in the discourse, the future that is being predicted for humanity is one of doom and despair. Dystopian visions of a planet on fire abound; with oceans of acid and plastic surrounding barren countries devolving into social chaos. Is this really our only possible future? It's not, but as long as this is the only future people are imagining, it's the only one they can achieve.

Scenarios are narratives of potential futures told in words, numbers or images that aim to free the human imagination to explore the possibilities of what could be (Van Notten et al., 2003; Vervoort et al., 2010; Wilkinson & Eidinow, 2008). They are usually offered as a way to conceptualize different possible futures when imaginations are restricted to considering only the most probable prediction of what will happen and are especially useful – and inspiring – when that one prediction is grim and defeating (Hajer & Versteeg, 2019). Scenarios can be a source of hope and motivation for people who crave futures other than the projected status quo. They encourage people to embrace the uncertainty of the future instead of trying to minimize it.

This project is grounded in the belief that everyone deserves the opportunity to imagine different collective futures for themselves, whatever they may be. However, this requires public access to foresight practices. Even though scenario development has evolved into an increasingly participatory process which includes relevant stakeholders from a multitude of sectors and levels (Van Notten et al., 2003; Vervoort et al., 2015), it typically does not include the general public since scenarios are still most frequently used to inform robust decision making at the governmental level (Wiebe et al., 2018). While it is a positive thing for politicians and decision-makers to unbridle their imaginations to conjure up desirable futures for their country, literature suggests that there are benefits to including the public in the conversation. Public participation has been shown to promote transparency; combat the perceived illegitimacy of entirely top-down decision making; and to encourage public ownership of a country's future plans (Dorfman et al., 2012). Public exclusion, on the other hand, presents the sinister possibility that the powerful will only relay the future scenarios

that are desirable to them, or worse, that they hide from the public the possibility of alternative futures altogether.

1.2 THE PROBLEM: SCENARIOS FOR THE PUBLIC

A way to avoid this and give the public agency¹ to imagine and work towards a different collective future of their own design is to communicate the scenarios to the public directly. However, simply broadcasting the scenarios on TV or posting them on social media does not ensure engagement. If you own a cellphone or TV you know what it's like to mindlessly watch or hear something and not fully register it. It would be a shame for this to happen to scenarios offering so much potential for brighter futures. This is why scenarios should be designed to *effectively* communicate with the public. They should grab and hold public attention and stimulate conversation. They need to be intriguing and provocative, and they need to be useful. This raises questions of 1) how can this be done? and 2) how can it be done in such a way that it conveys not just the content of the scenarios themselves but the idea that there is not just one or two or any finite number of possible future scenarios, but that the future is shapeable and it is limitless?

1.3 KNOWLEDGE GAP

This research aims to bridge many different fields, namely: futures & scenarios practice, public engagement, information communication and sustainability transformations. While there is some literature on interactive media being used to communicate scenarios (e.g. Vervoort et al., 2010; and Sheppard et al., 2011), neither of them investigates using the media as a distribution channel to address the wider public (the first is intended for stakeholder consumption and the second is geared toward specific local neighbourhoods). While there is literature on designing experiential scenarios (e.g. Candy & Dunagan, 2017; and Hajer & Pelzer, 2018), those only showcase one scenario each (one possible future instead of many) and utilize futures art exhibits which reach more targeted audiences (artists or those already interested in futuring) than general society. Similarly, while there is considerable literature on how to make science accessible and engaging for the public, the body of literature on how to do the same with scenarios is still quite small.

This research endeavours to marry these fields by investigating how futures scenarios can be designed and communicated via the media to engage the general public, spark debate and inspire creativity when imagining possible futures. I will be looking into the process of scenario development, the content and actors to be included, formats for presentation, language to be used, and platforms for publication, etc. aimed at opening up the discourse rather than trying to streamline it.

¹ Agency here is defined as the capacity to act and produce effects (positive or negative) that ultimately shape processes (Biermann et al., 2010).

1.4 RESEARCH OBJECTIVE

By finding out how to effectively communicate futures scenarios to the public, this research aims to provide a *sharpened* tool for creating change. In doing this, it will hopefully contribute to filling the knowledge gap identified by Candy & Dunagan (2017) on how to make futures studies more effective. If scenarios can be designed to open up the public discourse on futures, then perhaps the futures they depict will be more readily achievable by the public. Discourse is, after all, a precursor for change (Pesch, 2015).

This exposes the secondary objective of this project which is to sow the seeds of transformational change in the country of study. During the scenario-building process, decision makers and policy influencers will be introduced to the concepts of foresight and scenario practices which will hopefully get them to start thinking critically and creatively about the future. If upon publication in the media the scenarios are successful at opening up the discourse and sparking public debate, that will bring the country one step closer to sustainable change, since public concern precedes entry onto the public agenda, which can grant access to the political agenda, which is a precondition for transformational change (Kemp et al., 2007; Jones et al., 2007).

As such, this research may also be the object of future study on sustainability transformations to see if the attempt at inciting change by publicizing the scenarios was indeed effective. This will provide some material for analyzing transformations ex-ante, helping to address the need identified by Patterson et al. (2015).

1.5 RESEARCH QUESTIONS & FRAMEWORK

This research aims to answer the following question:

(RQ): How can scenarios be used to open up public discourse about the possibility of different futures in Guyana?

To "open up" public discourse in this case means to start a conversation. The intention is to spark debate and discussion in the general public about the existence and achievability of alternative possible futures. This project focuses on how scenarios can achieve this.

It will be steered by the following exploratory sub-questions:

(S1): What is the potential of public scenarios to contribute to transformational change?

Ultimately, the reason for endeavoring to open up public discourse about different possible futures is to make people realize that different futures are indeed possible. Believing that a solution is achievable is critical to motivating people to work towards it (Guber & Bosso, 2012). This project's proposed solution is transformational change, so opening up the discourse – and the public's mind – to the possibility of that change is needed to empower them to pursue the futures that they want.

This question was answered by a literature review on scenario practices and transformational change and provided an indication of the societal implications of this research.

(S2): How should scenarios be designed (content, format, platform & process) to encourage public consumption and engagement?

S2 explored exactly how the scenarios needed to be developed and presented to encourage maximum public interaction with them. For instance, some forms of media are more readily digested by humans while some types of content may cause people to shut down. Certain language, for instance, may simply be inaccessible to the wider public, while the wider public may be more trusting of some media outlets than of others. This question took these features of scenarios into consideration and was answered primarily by literature review.

(S3): Who should be involved in the creation of scenarios aimed at opening up the public discourse? How, when and why should they be involved?

S3 involves the process of scenario development and the perceived credibility, legitimacy and saliency of the scenarios that can be built or destroyed as a result (Cash et al., 2003). As it is the aim of this research to engage the public, the way that the scenarios are perceived is important; low credibility, legitimacy or saliency of those involved or of the scenarios in general could cause the public to be dismissive rather than receptive of the work. This question was answered via literature review.

(S4): What new public interactions occur as a result of the scenario's publication in the media?

Here, the developed list of criteria was tested to provide proof of concept. The answering of S4 was done via observation of social and traditional media responses which revealed whether the scenarios were in fact successful at opening up the public discourse. It provided the final set of data necessary to answer the main research question.

These research questions will be referred to as RQ, S1, S2, S3 and S4 from here on out.

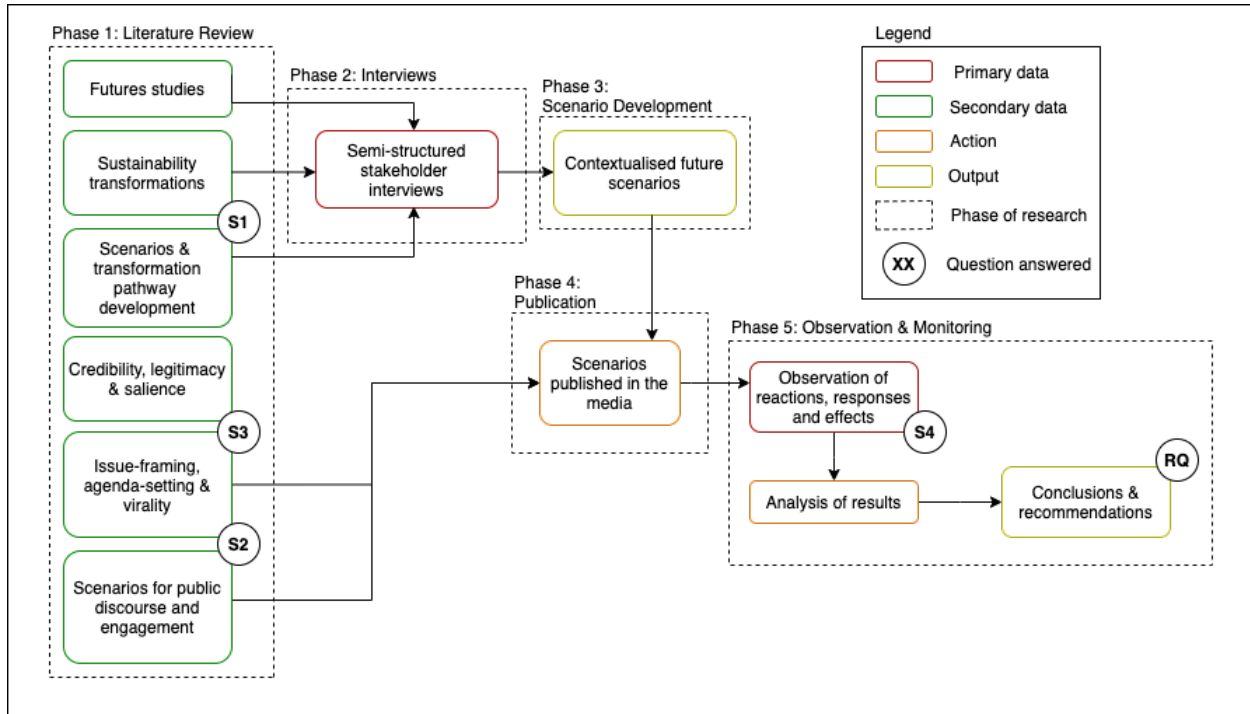


Figure 1: Research Framework

From left to right, literature reviews on all the relevant fields were conducted to answer sub-questions S1, S2 and S3. Techniques of scenario development and design were studied and used to create the interview and the survey. Once these were carried out, the information gathered was used to build the contextualized scenarios and pathways. Once this was complete, the scenarios were published in both the traditional and social media. The effectiveness of the scenario development and design process was then be assessed via observation and measurement of responses received, the results of which were used to answer S4. Insights, lessons and conclusions from this process were then used to make recommendations and ultimately answer the RQ.

1.5.1 Reader's Guide

This thesis is organized into six chapters. You are currently in Chapter 1 which will continue to discuss the need for and anticipated usefulness of this body of work. Chapter 2 reviews the theories and concepts used, their relevance and the interconnectivity amongst them; including humanity's current position in the Anthropocene and the resulting need for sustainability transformations, how scenarios can be used to envision different futures, and how these can be combined with public discourse to kickstart transformational change. Chapter 3 explains the methods used and is followed by Chapter 4 which presents the results of the desk research and publication of the scenarios. Chapter 5 discusses things that were considered when conducting this research along with some limitations of the study. Chapter 6 concludes with the main takeaways and opportunities for further research.

1.6 SCIENTIFIC RELEVANCE

More and more there is an echo of the need to include the public in decision-making processes to address encompassing and complex issues like climate change and global sustainability (Biermann, 2007; Heidingsfelder et al., 2015; Sheppard et al., 2011). Thus, it is important for scientists to know how to communicate scenarios and futures practices in a way that engages people in order for futures practices to be more effective (Candy & Dunagan, 2017). This research will be relevant to those practitioners, scientists interested in the role of scenarios in sustainability transformation processes, and persons interested in figuring out how to kick-start transformational change (e.g. Patterson et al., 2015 & Pereira et al., 2019). As the scenarios developed herein are intended to open people's minds to the possibility of many futures, I believe it will also be of interest to anyone investigating ways to open up problem framing (rather than framing in a single specific way).

1.7 SOCIETAL RELEVANCE

This research is expected to be relevant to society because it will give citizens the agency to envision and create the future that they want. Hajer & Versteeg (2019) argue that a lack of positive imaginations about the future can be a major barrier to achieving desirable sustainability transformations. For vulnerable countries where sustainability transformations are urgently needed, and for developing countries where resources are limited it is more cost and time effective to develop sustainably the first time around (rather than getting locked into an unsustainable pathway and trying to transform later), a way to effectively and efficiently communicate the possibility of alternative futures in the present could be very useful.

One such climate vulnerable developing country in need of transformative change is Guyana. At a time when Guyanese society is rife with tensions about what the future holds, introducing them to scenarios as a way to embrace that uncertainty rather than futilely trying to minimize it could be very valuable to them. If successful, it will open the public's imagination to the achievability of any number of possible futures as well as provide creative transformation pathways mapping how to get there. The prospect of collaborative sustainable futures is likely to be both relevant as well as a relief to those members of society that are currently being left out of the dominant narratives in the country (e.g. conservationists, mental health professionals, academics, the poor) as scenarios will give them a chance to participate in shaping Guyana's future. (See next section for background information on Guyana).

Lastly, if this research is successful in getting scenario work and futures practices onto the public agenda and from there kickstarting a sustainability transformation, Guyana could become a model for other vulnerable or developing countries with similar contexts seeking more transformative futures.

1.8 COUNTRY CONTEXT: GUYANA



Source: Reel Guyana

Guyana is a young Caribbean country with a warm and resilient people that stand against the usual post-colonial backdrop of poverty, ethnic tension, corruption and inequality. It is currently a carbon sink whose land area is 80% covered by pristine Amazon rainforest and whose precarious position below sea-level makes it extremely vulnerable to climate change.

Despite an abundance of natural resources, Guyana has never managed to take off economically. A dictatorship in the 1980s caused a massive brain-drain which has continued to cripple the country's development ever since. A recent oil discovery has caused a massive stir about the windfall of revenue that is coming. While there is a general feeling of excitement over the newfound oil wealth, there is also a strong undercurrent of dread about the potential resource curse that usually accompanies.

At the time of writing, Guyana had just emerged from a 5-month long political stalemate of rigged elections and political drama attempting to control the oil money. It has left the country more racially divided than ever and with coronavirus cases still rising, to say that the future is uncertain is an understatement.

At present, there are two dominant narratives about Guyana's future: 1) that Guyana will get rich off the oil revenues; and 2) that the corrupt government will steal and squander the money, worsening the inequality that already exists. The current future imaginations in Guyana are binary and clearly focus heavily on the economic success of oil but neither of the scenarios considers the

environment or addressing the country's flagrant social issues; in fact, it seems to have actually been accepted that the environment will suffer because a future where oil is exploited and the environment is protected appears to be inconceivable. This is why Guyana was selected as a case study for this research. It is also the researcher's home country.

2 THEORY

This section will start by explaining 1) The Anthropocene, which is a widely accepted and legitimized reason why 2) Sustainability Transformations are needed. A vital component of those transformations is the development of a shared vision of the future, which this project hypothesizes can be done through public discussion and negotiation of plausible 3) Scenarios. For that debate about the scenarios to take place, they must be entered into the public forum and should be capable of 4) Sparking Discourse about the future. This is the line of theory underlying this research and is depicted in Figure 2 below.

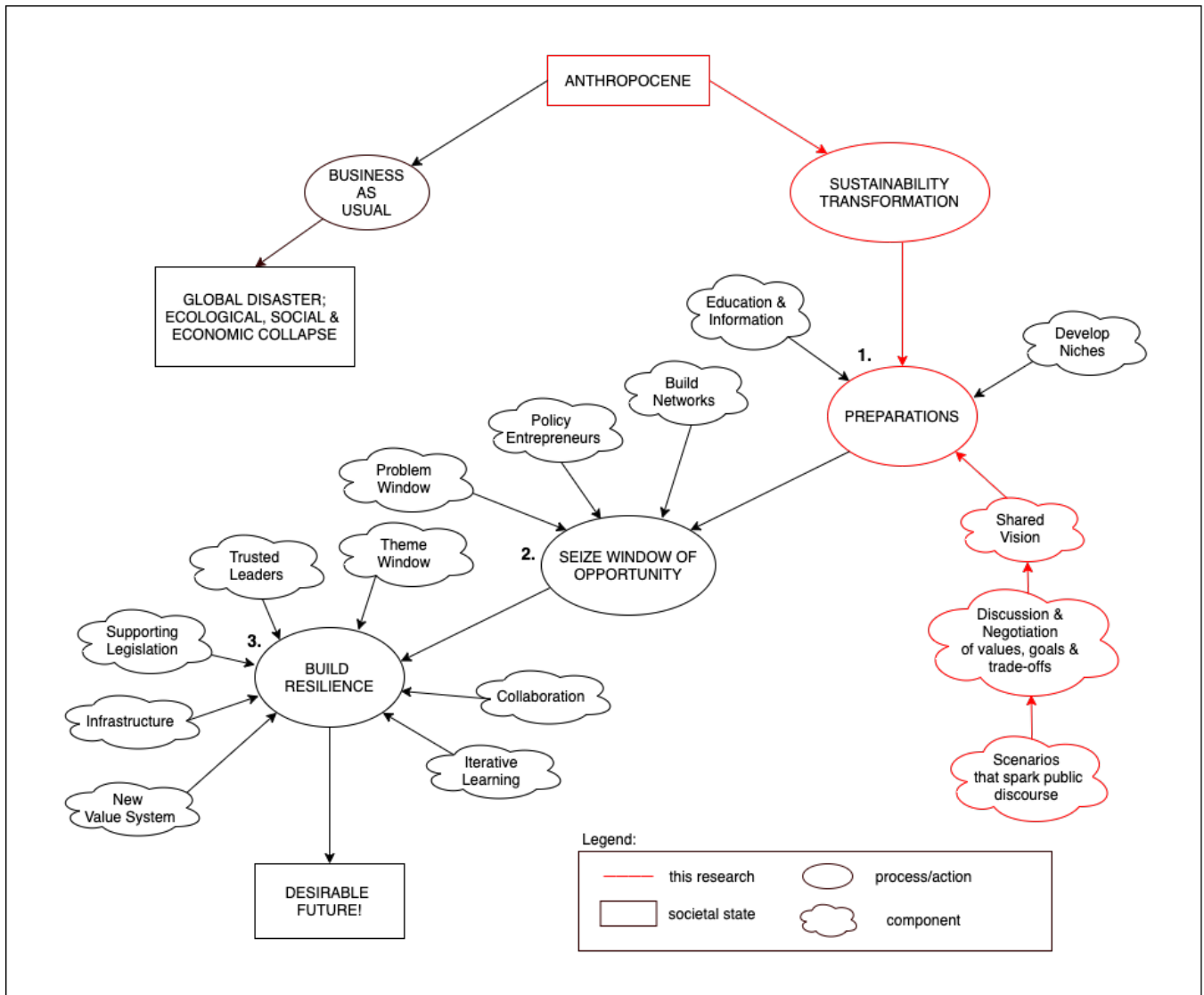


Figure 2: Theoretical Framework

2.1 THE ANTHROPOCENE

As far as the known history of the earth goes, the last ten thousand years have provided an uncharacteristically pleasant, stable environment for humanity's proliferation into what is predicted to reach 10 billion people by 2050 (Crutzen, 2002; Rockström et al., 2009; Steffen et al., 2011). This geological epoch, known to scientists as the Holocene, saw warm temperatures, relatively mild and predictable weather, and widespread availability of freshwater which allowed mankind to settle, develop agriculture, build civilizations, and thrive into becoming the world-dominating species we are today (Crutzen, 2002; Rockström et al., 2009; Steffen et al., 2011). This is essentially the crux of the problem: man's tyranny over the planet.

Sometime around the end of the 18th century, roughly coinciding with the dawn of the Industrial Revolution, the widespread burning of fossil fuels, clearing of land for agriculture, use of chemical fertilizers, and discharge of effluent into rivers and oceans started to shift the delicate balance of biophysical systems keeping the earth in its calm and desirable Holocene state (Crutzen, 2002; Rockström et al., 2009; Steffen et al., 2011). This new epoch, where man's unsustainable consumption and destruction of natural resources surpassed natural phenomena as the main driver of global environmental change is called the Anthropocene (Steffen et al., 2011). Some tangible changes that are already being felt are increasing intensity and unpredictability of extreme weather events, melting polar ice sheets, unprecedented rates of biodiversity loss, rising sea levels, and an increase in average global temperatures (IPCC, 2014).

If measures are not taken to drastically change the current trajectory of environmental degradation, there will come a tipping point where the resilience of the earth system will be overcome, and the new equilibrium point (if there is one) will be unprecedented (Folke, 2006; Holling, 1973; IPCC, 2014; Rockström et al., 2009; Steffen et al., 2011). In other words, there is no guarantee that conditions outside the Holocene will be favorable to human life. IPCC (2014) scientists agree that this tipping point is likely to be at an average global temperature rise of 2°C above pre-industrial levels, after which there may be rapid and irreversible changes to certain biophysical systems with limited adaptive capacity (Biermann et al., 2012). To prevent this from happening, not only must we replace fossil fuels with renewable energy, but humanity must fundamentally change its relationship with the planet from one of exploitation to one of stewardship (Biermann et al., 2012; Steffen et al., 2011). Our current practices are unsustainable.

2.2 SUSTAINABILITY TRANSFORMATIONS

"Understanding that the Anthropocene represents a systemic and structural societal problem, radical change is necessary in order to avoid catastrophe" (Bhargava, 2019, p. 12). As Steffen et al. (2011) put it, "We now take from it [the earth] the goods and services that underpin our lives, at a scale and rate that is eroding its capacity to support us" (p. 747). A transformation is needed; radical, large scale, fundamental changes to the system that will lead to new outcomes and interactions (Fazey et al., 2018; Patterson et al., 2015). Sustainability transformations are thus systemic changes made to achieve greater sustainability. Transforming humanity's relationship with the planet from one of

exploitation to one of stewardship so that we may maintain the conditions of the Holocene that sustain human life fits neatly into this category.

Scientific interest in transformations has expanded greatly in the past few decades as more and more experts call for radical changes to address the global environmental crisis (e.g. Biermann, 2012; Feola, 2014; IPCC, 2014; Patterson et al., 2015; Pereira et al., 2019). Most of the studies thus far have been ex-post analyses of socio-technical or socio-ecological transformations, however, vis-à-vis a rapidly degrading environment, there is a growing urgency in the call for ex-ante studies to be done so that these transformation processes may be properly prepared for, deliberately initiated, and steered towards desirable outcomes (Fazey et al., 2018; Patterson et al., 2015; Pereira et al., 2019).

One common idea in ex-post analyses is that transformations generally occur in what can be condensed into three phases: 1) development of niches and preparing the current system for change, 2) seizing the window of opportunity, and 3) building resilience of the new desired system (Folke et al., 2005; Geels, 2002; Olsson et al., 2004). The first phase, preparation, involves the creation of a transformative space (Pereira et al., 2019), or in other words, establishing conditions that are conducive to a transformation so that change-seekers are ready when the window of opportunity opens. Dissemination of information on the reasons for, as well as the types of, change being sought, can help to reframe the problem, create public awareness, and increase understanding of why the current conditions are undesirable (Olsson et al., 2004; Pereira et al., 2019). Social networks of stakeholders and concerned individuals are established so that dialogue about desirable values and societal goals can be initiated, from which a coherent shared vision for a desirable future, as well as the transformation pathways to get there, can be developed (Folke et al., 2005; Hajer & Pelzer, 2018; Olsson et al. 2004; Pereira et al., 2019). It is also when radical niche innovations should be developed and stabilized (i.e. tested and refined) so that they are ready to be scaled up when the window of opportunity presents itself (Schot & Geels, 2008).

The success of Phase 2 - seizing the window of opportunity - is highly dependent on the preparation that was done in Phase 1. Folke et al. (2005) suggest that such windows open when something makes its way onto the political agenda; i.e. when a government decides that a problem needs addressing and gives its attention to policy proposals that can solve the issue, or when they adopt a new theme for the administration and start seeking policies that reinforce the image they want to create. This may also happen with a change of government or when international agreements are made. These windows are rarely open for very long as decision makers have many things competing for their attention and public interest wanes quickly, so niches and innovations must be ready and have enough pledged and public support to convince politicians of their viability before the chance disappears (Downes, 1972; Folke et al., 2005). Policy entrepreneurs can be quite useful during these first two phases (Olsson et al., 2004).

The third and final phase of the transformation is where the old system is reconfigured and resilience of the new system is built up. This is done by passing supportive legislation, appointing trusted leaders and representatives at multiple levels in society, monitoring and responding to feedback, keeping tensions low, and facilitating collaborative iterative learning throughout social and stakeholder networks via the continuous flow of information in and out of the system (Geels, 2002; Olsson et al., 2004). Infrastructure is set up to accommodate the new system, collaborative relationships between stakeholders are strengthened, and the public becomes accustomed to and

starts benefitting from the new norm. The new value system is accepted and adopted, increasing the resilience of the new system, making it less likely to backslide or be overcome by new niches; in the case of sustainability, this means adopting values of stewardship and making regression into old exploitative habits undesirable.

2.2.1 The Multi-Level Perspective

A frequently cited theory on how transformations occur is Geels' (2002) Multi-Level Perspective (MLP). It conceptualizes change as a process that occurs across three levels: 1) the niche where radical innovations are born, 2) the regime where incumbent structures dictate the rules of operation and stabilize development trajectories (e.g. regulations, actor networks, and infrastructure that are aligned to the status quo), and 3) the landscape or external structure in which the first two exist (e.g. global trends, societal norms, the environment, culture). He theorizes that niches have to develop, gain momentum and garner support before they can maximize on a window of opportunity and break through to the regime level (Geels & Schot, 2007). Windows of opportunity open when landscape changes occur (e.g. cultural shifts or value changes) which put pressure on and destabilize the regime allowing niches to break through to the mainstream where they reconfigure the system or assimilate to form a new regime (Geels & Schot, 2007).

While the MLP contributed to the construction of the three-phased theory of transformations in the previous section, it was worth elaborating it separately due to its relevance to the section on sparking discourse (See Section 2.5). The MLP is depicted below in Figure 3.

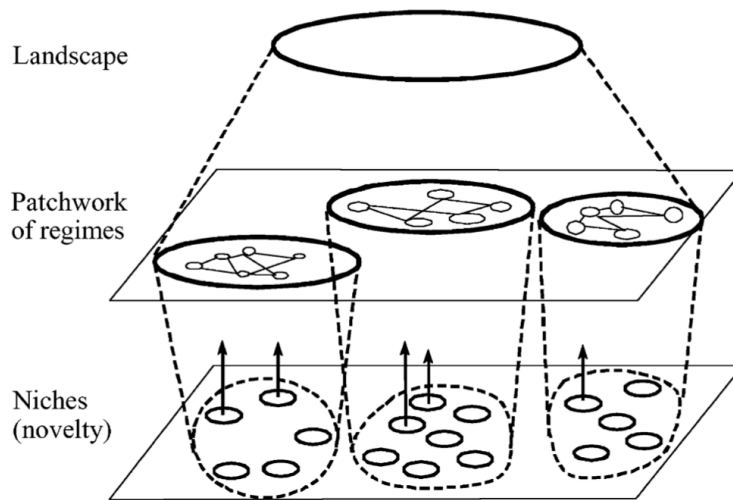


Figure 3: The Multi-Level Perspective (Geels, 2002, p. 1261).

In the Guyanese context of this experiment, scenarios' concept of plural shapable futures is the niche, the widespread mentality that the future is just an unalterable inevitability is the regime, while the

landscape is comprised of a post-colonial hand-out society that is largely unaccustomed to having agency over itself.

2.3 ENVISIONING THE FUTURE

If you don't know where you're going, you'll end up someplace else.

— Yogi Bera

Everything we do is for the future. People go to work today to get paid at the end of the month; they make lists, schedule meetings, and plan vacations months and even years in advance; they get insurance for future accidents that may or may not ever happen; and scientists are currently studying the Anthropocene so that we might avoid a future catastrophe.² As was mentioned in the previous section, the development of a coherent shared vision of the future is indispensable to transformation processes and is a necessary ingredient in guiding societal change in a particular direction (Constanza, 2000; Hajer & Pelzer, 2018; Späth & Rohracher, 2010; Wiek & Iwaniec, 2014). A vision can be defined as a "desirable state in the future" (Wiek & Iwaniec, 2014, p. 2). It is made up of qualitative goals and ambitions for society and serves to steer actions and guide decision-making in the present (Hajer & Pelzer, 2018). The notion of a "desirable" state should already indicate that visions are normative and highly dependent on the worldviews of those envisioning them (Patterson et al., 2017). This makes them distinguishable from other constructions of the future such as scenarios, which explore *possible* future states, and predictions, which explore *likely* ones (Wiek & Iwaniec, 2014).³

But can the future really be predicted? The short answer is 'No'. The long answer is 'As long as humans have free-will and autonomy over their bodies and are still irrational creatures capable of doing illogical things, the future, which is dependent on and changes with each individual action taken and decision made, cannot be accurately predicted'. A main factor in this ineptitude is that predictions are usually attempted using models and algorithms which, while complex and capable of computing an infinite amount of processes and feedbacks simultaneously, are simply based on the extrapolation of past trends and logic. In other words: computers have a hard time predicting unprecedented or illogical human behaviours that don't follow established patterns; and one thing that we can see from our history is that not all trends from the past continue smoothly into the future; things have happened that no one ever saw coming. The certainty with which predictions can be made decreases rapidly the farther into the future one attempts to foresee (Candy 2010; Noortman et al., 2019). This is depicted by the cone of possibility space shown in Figure 4, where each dot in the cone represents a possible future stemming from the present moment.

² I am currently writing this thesis for the degree I hope to earn in the future, which will better qualify me for the job I wish to have in the future.

³ Sometimes in the literature there is mention of 'normative scenarios' which are defined as being "value-laden" and "mostly either preferable and optimistic, or disagreeable and pessimistic" (Kok et al., 2011) depending on the norms and principles of the users for which they are being developed. 'Visions' as used in this paper can be equated with preferable normative scenarios.

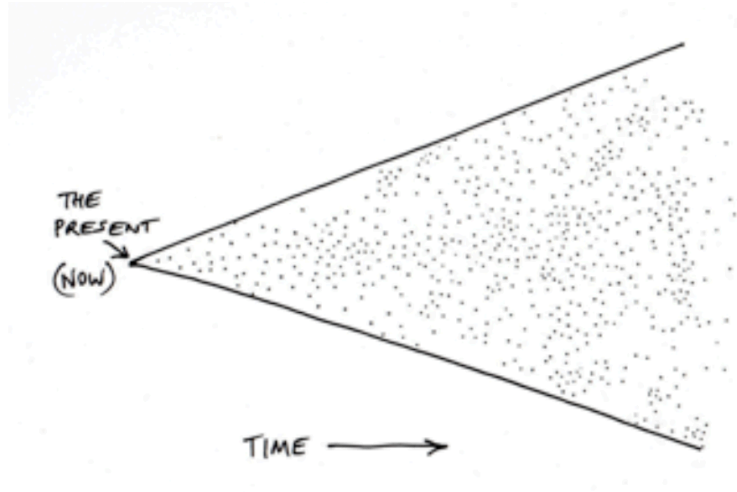


Figure 4: The cone of possibility space (Candy, 2010).

While accurate prediction is currently impossible, visions can still be extremely useful for strategically directing collective efforts towards a common goal. In fact, Costanza (2000) argues that "creating a shared vision of a sustainable and desirable society" is "the most critical task facing humanity today" (p. 2). He cites Meadows' (1996) principles of visioning, saying that it is of utmost importance for visions to be shared because it is the only way to ensure that they are responsible and just. Wiek & Iwaniec (2014) list "shared" as one of their key features for quality sustainability visions, stating that "a shared vision displays an enhanced level of legitimacy" (p. 9), meaning that it is respectful, fair and unbiased in its treatment and consideration of differing values and interests (Cash et al., 2003). Hajer & Pelzer's (2018) entire 'Energetic Odyssey' was an immersive technique of futuring focused on creating a *shared* socio-technical vision of the future so that a coalition of agents could be created to bring about the desired transformational change.

Having a shared vision is also helpful due to the inherently political nature of transformations. In reconfiguring existing systems, sustainability transformations will always affect a wide range of actors differently; while the intention is to cause widespread gains in the long term, they will inadvertently result in short-term (economic) losses for those currently invested in the status quo (Patterson et al., 2017). A shared vision, especially one shared by both 'winners' and 'losers', presents an important opportunity for collaborative learning and innovation, which could change perspectives and produce new ideas of how incumbents can replace their losses with sustainable gains, thereby converting them from being the competition into being useful agents of change (Hajer & Pelzer, 2018).

Another reason for developing a shared vision is that it can provide a basis for political consistency and continuation; meaning that if competing administrations share the same overarching goals for the future, adherence to a long-term strategy can be maintained even when governments change. Lastly, on a very fundamental level, more stakeholders sharing the vision means less stakeholders contesting it, which is good for building resilience of the new system (see previous section).

2.4 SCENARIOS

We have to decide where we want to go and balance that with where it is possible to go.

— Robert Costanza (2000).

Whereas a vision is a desirable future, scenarios present the multitude of *possible* futures that can unfold from the present moment (Wiek & Iwaniec, 2014). They are defined as different 'what-if' narratives about the future used by foresight practitioners and policymakers to explore possible consequences of decisions without having to actually make them (Bhargava, 2018; Van Notten et al., 2003). They are especially helpful when analyzing situations with high stakes and high uncontrollability and for getting people to rethink their relationship with uncertainty altogether (Bhargava et al., 2018; Van Notten et al., 2003). According to Wilkinson & Eidinow (2008), "uncertainty needs to be considered as more than a lack of knowledge" (p. 2) because ignorance, just like knowledge, is constantly evolving. Simply put, the more we learn, the more we realize we don't know, and the world we live in is only getting more complicated each day. Instead of viewing uncertainty as a lack, scenarios can help it to be seen as an abundance (of options) because every action whose outcome is uncertain presents a range of possibilities for what is yet to come. Scenarios help move away from the limiting practice of thinking about a single most likely future and move towards the idea that the future is much less defined and more open than most tend to believe.

There are several different types of scenarios in the literature, each with their own objectives, characteristics and development processes, e.g. *predictive scenarios* aim to forecast what is going to happen in the future and are usually based on models of current trends, while *participatory scenarios* aim to increase the salience and legitimacy of the solutions for stakeholders by involving them in the scenario-development process. There are also several typologies for classifying them, each with different systems of categorization and nomenclature, e.g. Van Notten et al. (2003), Börjeson et al. (2006), Wilkinson & Eidinow (2008).

Of particular interest to this research are explorative and normative scenarios. Explorative scenarios are often used to raise awareness, stimulate creative thinking, and explore the way different drivers of change interact with and influence each other (Kok et al., 2011). They usually start from the present and attempt to answer the question "What can happen if this action is(n't) taken?" and progress by exploring a wide scope of possible developments from there (Börjeson et al., 2006; Wiebe et al., 2018). By utilizing multiple scenarios that diverge into distinctly different futures, the repercussions of different decisions are exposed, and users can better understand and compare the accompanying advantages and tradeoffs.

Normative scenarios are in direct contrast to predictive scenarios because they are concerned with what society wants for itself rather than what science predicts will happen. Whereas predictions are based on "hard science" and quantitative modelling, normative scenarios are extremely qualitative and value laden (Kok et al., 2011). They attempt to answer the questions "How can we accomplish/avert this?" (Börjeson et al., 2006); with "this" usually being some form of utopia or dystopia. They lay out a (un)desired future and then work their way back to the present, developing a strategic pathway for how it can be achieved or avoided (Wiebe et al., 2018). This technique of working backwards is called "back-casting" and is particularly useful in translating long-term goals into manageable series of short-term actions (Kok et al., 2011).

Based on normative scenarios' ability to capture peoples' wants and fears, and explorative scenarios' capacity to present a plurality of choices, the two were combined in this research to create multiple options for futures that contained both desirable and undesirable elements to encourage discussion and negotiation of a shared vision amongst users.

2.5 SPARKING PUBLIC DISCOURSE

It may be best to start this section by asking "Who are the users?" being referred to in the last one. Scenario users usually refer to those who have a stake or interest in the decision being made or those who will be affected by the problem being analyzed. For this research which explores the potential futures of Guyana on a national scale, the users were the country's entire population – decision makers as well as the general public. The aforementioned endeavor to encourage discussion and negotiation of a shared vision meant that the focus was not just on crafting scenarios for public consumption but on developing scenarios that would start public conversations.

Sparking public debate on what the future could and should look like places agency in the hands of the people and coordinates it towards collectively building a desirable tomorrow (Späth & Rohracher, 2010). However, people's values are based on their own personal experiences and worldviews, so their ideas of what constitutes a desirable future will inevitably vary. In other words, not everyone has the same vision that they wish to see realized. This is why there is a need to initiate dialogue during the preparation phase of a transformation to map out existing problem definitions, understandings, interests, and priorities among stakeholders. Only then, when everything is laid out on the table and actors have a consistent comprehension of the situation, can they meaningfully discuss it to find synergies, negotiate compromises, agree on a common agenda, and build an actor coalition around the vision (Geels & Schot, 2007). This initial dialogue can be understood as 'building discourse', creating 'discursive space', or developing a 'discursive niche' (Pesch, 2015; Späth & Rohracher, 2010).

'Discourse' is defined as "an ensemble of notions, ideas, concepts and categorizations through which meaning is allocated to social and physical phenomena" (Hajer, 2009, p. 64). It is the framework which allows individuals to define and make sense of circumstances and coordinate social action (Pesch, 2015; Späth & Rohracher, 2010). Since current discourse dictates and constrains what people mean when they say things, it is considered a meso-level structure, or a dominant regime (Geels & Schot, 2007; Späth & Rohracher, 2010). When new meanings are assigned to words which are already in use, or when niche terms are created which generate novel webs of significance, there is an alteration to the underpinning structure of the discourse. When these changes are picked up and incorporated by actors outside the niche, they are said to have successfully broken through to the regime level (Geels, 2002). This happens when discourse coalitions form around a movement and outside actors are compelled to use the jargon in order to engage on the topic and be understood; which inadvertently forces them to acknowledge the credibility of the movement while further legitimizing it themselves by using the insider lingo (Hajer, 1995; Späth & Rohracher, 2010).

Studies show that affecting discursive space in this way is an effective way to initiate transformation processes, but what is more important to note is that transformation processes

absolutely cannot happen without a change in discourse (Pesch, 2015). This means that changing discourse is both a trigger and a necessity for transformational change.

This then leads us to the question: *How to affect public discourse?* The following three sub-sections will explore this via techniques of public agenda-setting, engagement, and the new phenomenon, virality.

2.5.1 Setting the Public Agenda

It seems reasonable to figure that for something to successfully infiltrate or alter public discourse, that it must first garner public attention. With regards to the MLP, niche innovations must first gain support from other actors before they are able to break through to the regime level; for actors to support an innovation, they must be made aware of it. Therefore, for scenarios to successfully spark public discussions, they must find their way onto the public agenda.

The public agenda, simply put, is the list of issues that members of the public regard as being the most important at the present moment (McCombs, 2007). It is widely considered to be set almost single-handedly by the traditional media (i.e. newspapers, TV broadcasts and radio) who not only decide what gets featured but also how much emphasis, and therefore priority, is placed on matters (Lippmann, 1922; McCombs 2002; Russell Neuman et al., 2014). As Cohen (1963) so articulately put it in his epigram, "The press may not be successful much of the time in telling people what to think, but it is stunningly successful in telling its readers what to think about." They decide what is deserving of public attention. In a world of almost 8 billion people, there is a vast and continuous flow of new events, ideas and occurrences happening every day that it would be impossible (and probably quite uninteresting) for the average person to directly acknowledge; this is why people rely on the news to paint their picture of what is going on in the world and what is relevant (Guber & Bosso, 2012).

The priority of news items is implied to the public by the size and location of headlines and by the amount of space allocated to a piece in the newspaper, by the prominence of the reporter and the time spent on a story on TV, and by the time of day chosen for a broadcast on radio (McCombs, 2002). The media also chooses how to frame stories and thus has influence over public opinion, though this has a much weaker correlation as people seem to retain more agency over their attitudes than their attention (Russell Neuman et al., 2014).

With the spread of internet access and the proliferation of social media (the niche) in recent years, traditional media (the regime) has had to adapt to a changing landscape in order to maintain their control over the public agenda. While they are still the most powerful players in setting that agenda, they have had to increase their online presence and become accessible on social media platforms which have a rapidly increasing grip on the public's attention (Hindman, 2009; Russell Neuman et al., 2014). What that means for this research, is that for scenarios to be strategically poised to spark public discourse (i.e. able to reach as many people as possible to create maximum opportunity for interaction and discussion), they need to be released on both traditional and social media platforms.

2.5.2 Virality

The pertinent difference between traditional and social media is that traditional media is centralized (i.e. all the information is generated and released from a central source or network) while social media is decentralized (i.e. users generate and release content from all over). When a piece of content is created and posted on social media, it might be found via a hashtag search or exploration of posts from a location, but generally it only reaches users inside the creator's network (i.e. their friends and followers). For content to reach people outside of the creator's immediate network and disperse through the realms of social media, it must be shared. In the interest of reaching as many people as possible both inside and outside of the researcher's personal network, the applicability of the concept of 'virality' became extremely apparent.

'Virality' is the phenomenon whereby certain online content is shared exponentially by users on social media networks (Knossenburg et al., 2016). Marketing experts are studying the trends to find out exactly which characteristics make a post contagious so that they can model ads that way and have users do their promotion, e.g. Berger & Milkman (2010), Knossenburg et al., (2016), and Libert & Tynski (2013). The commonalities are that content needs to be surprising, engaging, emotional and useful, so it reasons that the scenarios should also meet these criteria to be widely shared across social networks. These criteria will be discussed in more detail in Table 4 in Chapter 4 of this paper.

2.5.3 Public Engagement

This research includes two types of public engagement. The first, which was described in prior sections of this chapter, is a goal of the research and has to do with changing public engagement with the future. It seeks to get them actively involved in the dialogue and creation of the vision so as to give them agency and ownership of their future. Other reasons to foster public engagement in development processes are that it increases democratic legitimacy for controversial decisions, promotes social cohesion and justice, improves the quality and salience of public services, builds capacity, encourages learning, and builds up trust in regulatory bodies (Prikken & Burall, 2010).

The second type of public engagement aimed for in this project is a method to make the scenarios engaging for the public to consume so that they will A) finish reading all 4 of them, and B) be inspired to take part in said dialogue. Making the scenarios available to the public via the media is a crucial enabling step for this project simply because discussions cannot be had about the content of the scenarios without awareness of them first. But awareness of the scenarios, even getting members of the public to read them, is not a guarantee of a discussion afterwards. For the scenarios to spark conversation and change the way that the public engages with the future, they themselves must be engaging. They have to be interesting enough that people form their own opinions and provocative enough that they seek to debate those perspectives with others (Auger 2013; Schoemaker & Tetlock, 2012). They have to be intriguing enough to grab and hold the public's attention, but not be so outrageous that they cause people to disengage (Schoemaker & Tetlock, 2012). Other criteria to make scenarios engaging for the public are presented in Table 4.

3 METHODS

3.1 DATA COLLECTION

Data for this project was collected via a combination of qualitative and quantitative methods. They will be explained according to the research phases below:

Phase 1: Literature Review

Before primary data collection started, a literature review of the theories and concepts outlined in Chapter 2 was done to answer questions S1, S2 and S3. Research on futuring, scenarios work, sustainability transformations and transitions, public discourse, and public engagement (with science and democratic processes) was consulted to answer S1. S2 was investigated via avenues of public attention, agenda-setting, virality, communication, engagement, and experiential scenarios. S3 was answered using research on participatory scenario development, the multi-level perspective, legitimacy, credibility, salience, agenda-setting theory, and virality.

Phase 2: Interviews

Answers to questions S1, S2 and S3 were then used to create appropriate questions for the semi-structured interviews and survey. A semi-structured interview style was adopted so that a consistent data set could be developed while still allowing for voluntary elaboration by interviewees, as well as further exploration by the researcher on anything interesting or novel that came up. The interview and survey templates can be found in Appendices A and B respectively. Interview questions ranged from introductory queries about demographics, expertise, and familiarity with concepts, to questions about participants' deep-rooted hopes, fears, and perceptions of the future. Were they hopeful or were they scared? What did they think the driving forces of change were going to be in the next 30 years? What events did they think were inevitable? What were their priorities and what did they see as barriers to development?

Next, a non-exhaustive list of interviewees from various sectors, socio-economic classes and levels of decision making was compiled. The list was deliberately left open to allow for recommendations from participants on who else to include in the project. Referrals and introductions from respected colleagues helped with obtaining interviews with persons who would not typically have been accessible to the researcher (e.g. a Vice President and a UN Ambassador) and made those participants very willing to engage with the project. It is not lost on the researcher that this probably created some magnitude of an echo chamber, but more will be said on that in the Discussion chapter. For now, the reader can just be aware that of the 34 participants, 17 were of the researcher's own selection so at least 50% of participants were from outside the presumed echo chamber. Interviews and scheduling were done simultaneously as interviewees became available. All interviews were recorded with participants' consent for later transcription and review. During review, notes were made of interesting or novel points, suggestions, ideas, and perspectives to be used as fodder for the scenarios.

The list of interviewees selected by the researcher was:

Table 1: Researcher-Selected Interviewees			
#	Name	Age	Expertise/Occupation
1	Geran Collymore	27	Master's degree in education policy; researching education reform in Guyana; works in policy and equity strategies, specifically education policy.
2	Rita Dave	54	Lawyer; works in private practice.
3	Alex Arjoon	28	Environmental filmmaker; national athlete.
4	Sarina Kawall	27	Bachelor's degree in environmental studies; currently works in project management and professional inquiry.
5	Kayla Jeffrey	27	Master's degree in sociology with a focus on development studies; currently works with a private research organization in Georgetown.
6	Michelle John	46	Caterer; housekeeper; also works part-time as a caregiver for the elderly.
7	Ruel Johnson	39	Editor at Kaieteur News (national newspaper); member of The Citizen's Initiative (TCI) (a new political third party); national advisor on cultural policy.
8	Yonnick David	34	Entrepreneur; has a number of ventures ranging from entertainment to medical supplies; current the assistant district commissioner for the Guyana Scouts Association.
9	Annette Arjoon-Martins	55	Environmentalist; head of the Guyana Marine Conservation Society (GMCS); has held long-standing positions in aviation, tourism and disaster risk management; member of the Private Sector Commission; founding member of the National Air Transport Association; Co-chair of the National Search and Rescue Committee.
10	Michael Correia	58	Prominent Guyanese businessman in mining, aviation and tourism and hospitality; president of the Guyana Aircraft Owners' Association; Honorary Consul of Portugal; former chairman and vice president of the Private Sector Commission.
11	Stanley Ming	69	Prominent Guyanese businessman; former chairman of the board of the Guyana Geology and Mines Commission.
12	Kian Jabour	31	Entrepreneur; politician; studied construction engineering at university; work experience and extra-curricular training in the food and beverage industry.
13	Damian Fernandes	40	Head of Conservation International (CI) Guyana; Biologist; has worked with the Environmental Protection Agency, Protected Areas Commission and WWF.
14	Azad DeAbreu	46	Gold miner; jeweler; member of the Guyana Miners' Association.
15	David Singh	54	Director of WWF Guianas; experience in natural resource governance and conservation; chairman of the board of trustees

			of his church; member of the Board of St. Stanislaus College and adjunct professor at Arizona State University.
16	Jasmati Kissoon	69	Cleaner.
17	Anil Persaud	38	Market vendor.

The list of participants that were referrals from the previous list can be found below:

Table 2: Participant-Referred Interviewees			
#	Name	Age	Expertise/Occupation
18	Roxanna Kawall	64	Investigative journalism, research, editing; freelance writer for Stabroek News and the Catholic Standard; German to English translator; does editorial work for WWF; associated with a German fair-trade company called El Puente.
19	Candasie Shepherd	34	Medical laboratory technician; associated with the Guyana Defense Force.
20	Ronic Carter	33	Soldier/medic for the Guyana Defense Force.
21	Carolyn Rodrigues	46	Director of the FAO office in Geneva; former minister of foreign affairs and trade for the PPP government in Guyana; former minister of indigenous affairs.
22	Nicholas Boyer	38	Experience in finance, retail and real estate; president of the Private Sector Commission; former president of the Georgetown Chamber of Commerce and Industry.
23	Marti DeSouza	36	Education officer responsible for the Mabaruma sub-region in Guyana (hinterland); former radio broadcaster in the region.
24	Shaleeza Shaw	49	Banking and finance; holds bachelor's degrees in law and business management and a master's in business administration with a focus on banking; former acting CEO for Guyana Bank of Trade and Industry; secretary of the Georgetown Chamber of Commerce; former committee member of a Conservation International project to finance green development projects in hinterland regions.
25	Gillian Smith	53	FAO representative in Guyana; background in fisheries and aquaculture and natural resource development; has been working in national development in the UN.
26	Dr. Patrick Chesney	54	Agriculturalist specialized in horticulture and agroforestry; is currently an independent consultant; has worked in forestry, biodiversity conservation, environmental management and ocean governance; worked at the National Agricultural Research Institute for 15 years, Conservation International for 3 years, UNDP for 10 years, CARICOM secretariat for 1.5 years, Chairman of the Board for the Protected Areas Trust; member of the CARICOM Climate Change Center, among others.

27	Rene Edwards	45	Background in environmental studies, conservation and resource management; works in local and regional development and governance with a focus on developing sustainable indigenous communities that have autonomy over their spaces and livelihoods; currently working for Conservation International; director for The Consultancy Group; part of the steering committee for the Global Environmental Fund Small Grants Program with the UNDP.
28	Christina Edwards	42	Background in banking; has been working in indigenous community development since moving to Guyana; company secretary for the Rupununi Livestock Producers' Association.
29	Hon. Sydney Allicock	65	Vice President; Community development at all varying levels and activities; trustee and community representative to the Iwokrama International Board which in charge of sustainable development of protected areas.
30	Lawrence Lachmansingh	54	Background in governance, conflict prevention, election observation and credibility of processes; has worked in cohesion and democracy through the UN; currently works in participatory forest governance; very involved in the Roman Catholic Church and justice; member of Heal Guyana.
31	Ray Ice	35	Taxi driver; DJ.
32	Dr. Rory Fraser	67	PhD in forest-based economic development; background in woodworking; taught forestry policy and economics at the Alabama A&M University; former vice chancellor of the University of Guyana.
33	Audreyanna Thomas	50	BSc in communications; MSc in development management; currently pursuing a __ in law; professional experience in environmental health, water sanitation, hygiene, solid waste management, and governance; represents Small Island Developing States on the steering committee member of the Sanitation and Hygiene Fund which is a part of the UN Office of Projects and Services for the past 6 years.
34	Sharon Lalljee-Richard	39	Core expertise is in the areas of advertising, marketing and public relations; owner of an advertising agency; recently has branched out into mobile app development; is a long-standing Rotarian; founder and chair of Heal Guyana.

Participants were encouraged to elaborate wherever they felt inclined to, which led to a fair amount of trust building and opening up. The average duration was about an hour though a few interviews ran well over two and a half hours long. Due to the ongoing COVID-19 pandemic, telephone interviews were the most appropriate method available to gather people's insights. A mock focus group was held via Zoom in an attempt to replicate the scenario development processes used in Kahane (2004) and Vervoort et al., (2013) which were both inspirations to this research, however, it

quickly became apparent that without the researcher obtaining proper training as a facilitator and rapport-building between participants, the exercise was not going to be as fruitful as hoped. This will be explained more in the Discussion (Chapter 5) of this thesis.

As the purpose of these scenarios was to spark public discourse on the possibility of different futures and not to advise policymaking or be implemented in something more immediately consequential, the interviews were not coded. The researcher felt that the sentiments that were echoed in the interviews the most (such as a fear of dictatorship) were just as important to Guyana's sustainable development as the topics which were hardly mentioned at all (such as domestic violence and gender equality) because of people's tendency to be consumed with their present situation (the rigged election) and difficulty thinking outside the box of their own conditioning. She also believes that the feel of the interviews said a lot more about the emotion attached to certain topics (which is an important criteria for sparking discourse; see Table 4) than a transcription could justly convey. Simply put, the ability of coding to translate qualitative data into quantitative evidence was unnecessary.

Phase 3: Scenario Development

Data on current local narratives, drivers of change, hopes, fears, sources of uncertainty and desirable futures were collected and used as input for the scenarios. Loosely following the scenario development methodology outlined in Vervoort et al. (2013), the most important driver of change identified by interviewees was oil and the most uncertain was politics. "Oil" was understood to mean the anticipated windfall of money and expertise that the budding oil and gas sector would inject into Guyana's economy, while "politics" initially meant whether or not the country was going to be dragged into a dictatorship. A resolution to the political situation came before the scenarios were published with the election of Guyana's president, essentially eliminating the likelihood of a dictatorship so the "politics" driver was adapted to refer to the new government's decisions on how to invest the oil revenues and which areas of development to focus on. Thus, two of the four scenarios explore different investment avenues based on interviewees' priorities (i.e. tech and agriculture), one is based on the new government's proposed vision, and the final is a curveball which focuses on social development instead. Pertinent tradeoffs were highlighted in each one.

Another scenario-building step is to identify shock events that may occur that can be used to illustrate different scenario conditions or character attitudes (Vervoort et al., 2013). The most consequential events that participants agreed were likely to occur in the 30-year time frame were a severe flood and an oil market crash. These were included in all of the scenarios to illustrate different potential impacts and ways of handling the situations. Many also indicated that they believed another pandemic was going to occur, but this was likely due to the mania in the media surrounding COVID-19 while interviews were ongoing. A pandemic was therefore not included in the narratives because the researcher did not want to overwhelm readers with yet another disastrous event and also because a key goal of the scenarios was to get people to contemplate possibilities outside of their immediate realities and the pandemic is still quite current.

Once the bones were constructed, the rest of the details were filled in by the researcher using novel and interesting ideas from the interviews wherever they fit best to make coherent and compelling stories. At this point, the researcher started to integrate the criteria found for sparking public discourse (Table 4). The final step of scenario development was getting them illustrated and

ready for publication. The researcher teamed up with local artist, Mary Fung-a-Fat, to brainstorm visuals and ways to best depict the main concepts of the stories.

Phase 4: Publication

Once the scenarios were developed they were published via both traditional and social media channels. The two most read newspapers as indicated by participants were Stabroek News and Kaieteur News, and the most popular online news source was News Room. The researcher gained access to Stabroek News by sending the scenarios to the email address provided to the public for submitting letters to the editor; Kaieteur News via one of their editors who participated in the interviews; and News Room via their manager who is a personal acquaintance of the researcher.

The scenarios were published on the researcher's personal Facebook page after the first publication in the newspaper (so as to not compromise the novelty of the story), accompanied by the link to the survey. Kaieteur posted two scenarios on Saturday 26th September, 2020 and two on Monday 28th, neither with a link to the survey but with the researcher's personal email and phone number if readers wanted to give feedback. Stabroek News posted all four stories, complete with the survey link, plus a feature article, on Sunday 27th September 2020 . News Room ran the story on Sunday 27th on their webpage but didn't include any information for the survey or other forms of feedback. The online publications can be found at the links below:

Kaieteur News: <<https://www.kaieteurnewsonline.com/2020/09/26/future-guyana/>>

<<https://www.kaieteurnewsonline.com/2020/09/28/future-guyana-2/>>

Stabroek News: <<https://www.stabroeknews.com/2020/09/27/sunday/imagining-guyana-2050/>>

<<https://www.stabroeknews.com/2020/09/27/sunday/developing-a-vision-for-the-future/>>

News Room: <<https://newsroom.gy/2020/09/27/future-guyana-thesis-by-ana-correia/>>

Facebook: <<https://www.facebook.com/ana.correia.754/posts/10158635051944096>>

Phase 5: Monitoring & Observation

The time from the scenarios' publication until the deadline for this project measured just two weeks, thereby only allowing a very short observation period. The public's responses to and engagement with the publications were measured via survey responses, metrics provided by Facebook (i.e. likes, comments and shares), and direct interactions from readers (i.e. phone calls and emails). This information will be used to answer S4, which will then be used in conjunction with S1, S2 and S3 to answer the main RQ.

3.2 OPERATIONALIZATION OF VARIABLES

Table 3: Operationalization of Variables

Table 3: Operationalization of Variables		
Variables		
	Independent (input)	Dependent (output)
Phases 1-3	Data from interviews	Scenarios
	Scenario design criteria	
Phases 4-5	Scenarios	Public conversations started
	Platforms of publication	

While the finished scenarios are used as in input in phases 4-5, it must be noted that they are not a truly independent variable since they are the result of the inputs and processes used in phases 1-3.

3.3 DATA ANALYSIS

Quantitative information from the survey responses was the primary data used to make conclusions in this research as it was deemed to be of higher quality than the social media indicators due to the increased specificity of the questions asked in the survey; e.g. a respondent saying that they discussed the scenarios with others is more conclusive than a Facebook share in determining whether discourse was opened because it un-subjectively indicates that a conversation was had while a share requires assumptions to be made to arrive at that same verdict. Quantitative data from both survey responses and social media indicators were processed using simple statistical methods.

Qualitative data obtained from the survey (e.g. from prompts asking respondents why they felt a certain way or via the option to leave comments at the end) was easily analyzed due to the nature of surveys to present data in a 'by-respondent' manner, e.g. it is easy to see that 30 out of 40 respondents felt positively about the scenario exercise by doing a simple count. Emails and phone calls were considered individually.

3.4 RELIABILITY & BIAS

There are four significant biases that must be acknowledged when interpreting the results of this research. The first one is researcher bias on the scenarios. While the input for the scenarios was provided by the interviewees, the novel bits and interesting ideas that made it into the final versions were ultimately up to the researcher's discretion. A quantification of participants' ideas would not have necessarily resulted in a qualification to be included in the narratives, e.g. three people mentioning the same idea does not mean it is interesting, and one person's idea might be novel but not necessarily be appropriate according to the development criteria being followed. In other words, if the same experiment was conducted by a different researcher, the scenarios would likely have been different.

The next three biases stem from the survey only being available online and via telephone, and from it being voluntary. There is an inherent undercoverage bias to the responses that is openly admitted by the researcher. Undercoverage bias occurs when an entire population is not surveyed or adequately represented in a sample (Cobben & Bethlehem, 2005). By virtue of it only being accessible via phone or computer, persons living in areas without internet connectivity or telephone service were excluded from the sample. According to 2017 estimates, 87% of Guyanese have mobile phones while only 35.7% have internet access (CIA, 2019). This means that the survey neglected to include a significant portion of the population that likely represents persons living in rural or hinterland regions, older age groups, and persons of lower socio-economic status; which are all critical demographics to include in discussions about the future. Another source of undercoverage bias is that only Stabroek News included the link to the survey, meaning that citizens who choose to exclusively read any of the other news sources were not given the opportunity to respond.

Another source of undercoverage bias, and the third acknowledged bias of these results, is from non-response. Non-response is the phenomenon where individuals who were included in the sample do not respond or take the survey (Cobben & Bethlehem, 2005). At the point of writing this report, only 49 people had taken the survey which indicates an incredibly high rate of non-response for it being linked in a national newspaper. 41 out of those 48 respondents indicated that they encountered the scenarios on social media. The Facebook post has 98 likes, which indicates that an absolute maximum of 41.8% of people who saw and engaged with the scenarios while having direct access to the survey actually took it. When considering that Stabroek News alone routinely sells 9,000-11,000 papers every Sunday, the actual rate of response of this survey was quite dismal.

The fourth and final source of bias for this research is called voluntary response bias which tends to overrepresent persons with very strong opinions. It happens when persons with mild or moderate opinions choose not to respond and this can result in a polarization of the data; e.g. 10 people hear a song and have the option to take a survey about it; 5 of them loved it so they took the survey, 4 of them didn't like it or care enough to take it, and 1 person hated it, so they responded to let the singer know; the results of that survey will say that 83% of people loved the song, when in reality it was only 50%; these results have a strong voluntary response bias in favor of the song. The positive responses received from the survey on this research, coupled with the high incidence of non-response, suggest that the results likely have some a significant degree of voluntary response bias as well.

4 RESULTS

This chapter will present the four scenarios and their illustrations (complete with the framing text and survey information that was sent to the newspapers) and then answer the five research questions (S1-4 plus the RQ). The results of the survey can be found in Appendix C.

4.1 SCENARIOS

Thank you for participating in this social experiment about the future. Below you will find four stories written by me but composed of the hopes, fears and dreams of fellow Guyanese just like yourself. They are part of a Sustainable Development and Governance research project that I have been conducting since March of this year. All of the stories are constructed on the same timeline, starting from right now and going up to the year 2050. I have spoken to almost 40 Guyanese from all races and socio-economic classes – from businessmen and teachers to doctors and market vendors, from DJs and taxi drivers to lawyers and police officers, from artists and athletes to janitors and a Vice President. If you keep reading, I ask that you regard the stories with an open mind, a heaping teaspoon of salt, and a childlike imagination. Do not let the constraints of the present bog you down from daring to imagine different futures for our beautiful Guyana. Nothing is set in stone yet. And everything is possible. Enjoy.

4.1.1 Information Age



Figure 5: Information Age (Illustrated by Mary Fung-a-Fat)

After the election scandal of 2020, the PPP emerges victorious and immediately gets to work orienting Guyana towards a future in oil. Recognizing the employment opportunities for young skilled Guyanese within the budding oil and gas sector, as well as the need to bring Guyana up to international standards of business, they decide to invest revenues in education and information technology – a business reform, if you will. Competence and efficiency are the new names of the game. They give lip service on ethnic reconciliation to placate the population's growing cries for a solution to the tension, but nothing is concretely done. Instead, the public's attention is redirected to high-profile economic projects like the Amaila Falls hydropower plant (which never materializes), and the Berbice deep-water harbour (which would probably be better suited in Essequibo). Race relations continue to deteriorate.

In 2022, the formal process for education reform begins. The government supplies every school with new computers so that every single Guyanese child may have the opportunity take courses and develop skills in I.T. UG is now free. Educators across the country are tasked with creating a relevant and forward-facing curriculum based on current opportunities within the country and foresight of what Guyana is going to need in the future. UG awards scholarships to its best and

brightest educators to go abroad and specialize in needed fields so that they can bring that knowledge back home when they are finished.

In 2025, the PPP win again, but this time the third parties win enough seats to strip them of the majority they previously held in parliament. It's a big step for accountability. To facilitate more efficient business both locally and with foreign enterprises, information systems across the country start being digitized. Data, statistics, public records and research start to become more widely available and improved access and information sharing catalyses the fight for transparency in government. Watchdog organizations have started popping up, holding the PPP mostly accountable. By 2030, all major credit cards are accepted just about everywhere, and reliable online banking is the norm. All utility bills and minor fines can be paid online. Speeding, running a red light, crossing a double-yellow, and having expired documents are now all ticket offenses that do not require court appearances. The digitization of police records vastly improves communication between stations and the courts, which greatly boosts the police's ability to follow up on defaulters. We're actually starting to look more like a civilized country than a cowboy town these days.

The May/June rains roll around as they always do but this time, they bring trouble. The Great Flood destroys the coast. The East Coast highway is impassable, and the embankment road is under two feet of water. Because Guyana now has a good working relationship with the international community, disaster aid is dispatched quickly but because of the flooded roads, the government is unable to get supplies to the worst affected communities for well over 3 weeks. It takes 2 months for the water to recede. Everywhere is in shambles, but the oil keeps flowing. Perhaps it's a good thing, because Lord knows we need the money right now. The rest of that year is spent recovering anything salvageable and deliberating the relocation of the capital to higher ground. The decision is made to start establishing Linden as the new epicentre of business. To facilitate more efficient travel to the shore bases which are still situated on the coast, a high-speed train is commissioned to connect Linden and Georgetown. There will also be stations at Timehri, Houston, Stabroek and Ogle. The entire journey from Linden to Ogle will take just 40 minutes, stops included. Despite the disaster, growing returns from the oil and gas industry encourage increasing investment by both foreign and local stakeholders. Continued achievement by the country's youth robotics team garners international attention which results in a spike in local interest and public funding. Seeing the potential benefits for their own business, ExxonMobil makes STEM Guyana one of its main Corporate Social Responsibility (CSR) projects.

By 2045, the final rollout of education reform is complete. The children learn all their core subjects but also about oil and the resource curse, about climate change and sustainable development, and about equity and justice. The students born out of the reform are curious and they are passionate, and coupled with access to information and technological proficiency, turn Guyana into a research hub for the Amazon and Caribbean regions. Guyana is recognized as a prime case study for biodiversity, ethnic politics, a developing oil nation during the rise of renewables, and also as a climate vulnerable country.

Things are really looking up these days... until the oil market crashes in 2050. What is Guyana going to do now?

4.1.2 Bread Basket



Figure 6: Bread Basket (Illustrated by Mary Fung-a-Fat)

After the incessant deliberation of the 2020 elections fiasco, the victorious PPP decides to invest oil revenues into diversifying the economy via agriculture. The first few years are spent subsidizing niche start-ups and investing in sustainable agriculture ventures, as well as pre-emptively establishing trade routes to facilitate supply to international markets. Farmers are encouraged to start the process of getting their farms certified by NAREI so that their produce may be eligible for export once the trade routes are opened. The certification is free, and it benefits the farmer to start early so that they can have access to the market before it becomes saturated. Rice is doing well, and sugar is finally breaking even but the real money starts to come from non-traditional crops like kale and mushrooms which used to be imported from the US and sold for a premium, but which Guyana now supplies to the entire Caribbean. Tropical fruits like pineapples, mangoes and avocados are being exported to Europe and North America, along with high-value foods like cashew nuts and coffee. With the global demand for organic food ever increasing, and with our farmers already complying with international standards, Guyana vaults right into the organics market. It feels nice to finally realize that dream of being the bread basket, eh?

2021 sees the Single Use Plastics (SUP) Ban finally being implemented which forces Guyanese to start finding biodegradable alternatives to plastic. Due to poor planning and absence of an education and awareness campaign, there are no sustainable alternatives on the local market when the ban first comes into effect. Small businesses struggle and there is a period of intense growing pains as people try to adapt. At first, no one can remember to bring their reusable bags; but with plastic bags now being taxed and sold for \$100 each, people learn quickly. Stores and vendors are allowed to use the bags that they already have in stock, however, once those are finished, no more imports of plastic bags or utensils are allowed into the country. The government puts out a bid for private companies to start producing eco-friendly options and offers to subsidize energy costs for the first 5 years. This creates the perfect window of opportunity for entrepreneurs to step up as the ban essentially guarantees nationwide buy-in on alternatives. Bags and utensils made from cassava starch, and plates and food boxes made from lily pads start becoming available. The demand for cassava goes way up, producing good employment opportunities for hinterland and rural communities.

2030 arrives. Oil and agriculture are both booming. It is the dawn of a new decade and brings with it the hopes of continued prosperity and optimism that Guyana is finally taking off. For real this time. That Ole Years is one to remember. Things are good, we can't really complain. Literacy in the country remains low but employment is up and Guyanese are reporting higher levels of satisfaction in their lives. Georgetown is constantly abuzz with a cacophony of push-cart music and blaring car horns, but it is *alive*. Then one night, on a new moon, the spring tide comes... and it doesn't stop. The Great Flood hits the economy hard. Georgetown, with its newly implemented sea-defence strategy of mangroves backed by earthen dikes, is mostly spared, but farms along the unprotected areas of the coast are destroyed by the salt water. Luckily, revenues from a decade of oil and flourishing agriculture are enough to see the country through the disaster, however the government's failure to prepare rural communities for the imminent catastrophe cost them the 2030 elections. By 2031 we are able to regain our balance, though the lesson has been learnt and new investment on the coast slowly starts drying up. Some farmers are able to turn their inundated plots into shrimp farms, but most new farms and businesses are opening further inland, particularly along the new Ogle/Timehri highway.

Rising temperatures and sea levels start causing changes to ocean currents, and more and more plastic waste starts washing up on Caribbean beaches. This is a big problem for tourism. The islands, recognizing their own role as massive per capita plastic consumers, decide to implement their own SUP bans. It's easier now with Guyana producing sustainable plastic-alternatives right next door. Making good use of those new trade routes, Guyana is happy to supply. By 2040, we're not just supplying the bread, we're selling them the baskets too.

It's 2050, and we're doing well... until the oil market takes a drastic dive. It puts the brakes on some high-profile infrastructure projects that were being considered, but the economy is more or less sustained by its other streams of income. And we've got a lot of our dollars saved for hard times in the sovereign wealth fund. Whew Ma, looks like we made it.

4.1.3 Glass Ceiling



Figure 7: Glass Ceiling (Illustrated by Mary Fung-a-Fat)

It all started with the elections debacle of 2020. The scandal birthed a new wave of activism in Guyana, especially among the country's youth. So aghast at the brazen lies and disregard for their voices, and so embarrassed by the mockery made of Guyana on the international stage, young Guyanese start to reject race voting and party loyalties and start to vote based on merit. They don't want a figurehead to worship; they want change. The third-party coalition wins 5 seats in the 2025 election among a flurry of emerging parties. There is a new type of citizenship being bred here. People are tired of waiting for the government to "figure it out". It's time to take the reins. There's even a women's party this time around, much to the shock of... everyone. "Be the change", amirite? They don't win, but it just goes to show how much things are in fact changing.

2030 rolls around and elections are set for November. Campaign season is in full swing. "Keep the oil coming!", "Shared governance for all!", "Constitutional reform!". We've heard it all before. But there's a different tune chiming in this time as well, from the back, behind the noise. "We can't win if we're not right within". It's the women's party. They say that they want to fix Guyana from the inside out. They want to tackle the racism that keeps rearing its ugly head every 5 years, our seemingly inherent lack of pride in our surroundings, the horrific domestic violence that continues

to proliferate under the patriarchy, the heart-breaking mental illness that we refuse to even acknowledge, and our long-standing drug and alcohol abuse problem. The discussions are uncomfortable and they're hard, but it's time for us to finally have them. And they're proposing some interesting solutions too:

- rehab programs over incarceration and homelessness;
- a nationwide educational clean-up campaign to address our incessant littering of plastic bottles which were exempt from the Single-Use Plastics Ban of 2021;
- a hotline for suicide prevention as well as anonymous helplines for both victims and perpetrators of family violence;
- safe havens where battered girls and women can go for support, community, protection, and help in learning skills to become financially independent;
- 'Mental Health and Wellbeing' as a part of the national school curriculum to teach our kids awareness and de-stigmatization, as well as other things like anger management, constructive coping mechanisms, and even yoga and meditation;
- and finally, a national deep healing exercise to address the racial tension. It's supposed to be like a circle of trust where people may speak and be heard, air their grievances and be understood, and apologize and be forgiven. There will be no legal penalty for admitting a wrong or a bias, just a chance to come clean and heal, and maybe, hopefully, start to bridge the divide.

Women, young and old, are rallying behind them. Recognizing that huge support base and not wanting to risk their female votes, the young third parties propose a coalition. The women, knowing that Guyanese men would never vote them in on their own, accept. They can play this game too.

It's now the end of August and the rains should be gone, but the weather patterns have been weird lately. A new tropical storm is brewing off the western coast of Africa but no one pays much attention. "Dem things don't hit Guyana", they scoff, ignoring completely that all the country's drains are chocked full of bottles. But they're wrong this time. It's unprecedented. Guyana's first hurricane; and we're not prepared.

The super-storm dumps buckets over every inch of the country with the outer bands reaching as far as Rupununi. It's the worst flooding we've ever seen. A week into it and we're drowning. People have lost their roofs to the wind and their floors to the water. Lepto is beginning to spread. The president declares a national state of emergency and elections are postponed. And then, right when it seems like all we can do is despair, something amazing happens. The third parties, the government, and the opposition all agree to band together to execute a plan to distribute aid and help evacuate those in the worst affected areas. It's almost as if once the pressure to win was off, they could really start focusing on what was important – the people. It's the first time the country really sees what unity and solidarity in governance could look like... and it's beautiful. Within 2 weeks, the worst of it is over; the water is still here but the people are safe and that's what matters.

By November 2031, we're ready to return to the polls, but this time, we're trying something new. Along with the 65 seats in parliament allocated to the running parties, citizens will be invited to elect 6 nonpartisan members to ensure that any values or causes not advocated for by the major parties are still represented. For the first time ever, there is a real possibility for representation on things like LGBTQ+ and animal rights, the environment, gender equality, the elderly and the disabled. We love to see it. It's a huge success for inclusivity and because it's an opening for independent

thinkers in parliament, a big opportunity for Guyana to start making some really progressive moves. It's a close race between the incumbent and the women's coalition but Guyana has spoken, and *she* is ready. The ladies win. It marks the beginning of a new era for women and young people in Guyana. After an entire history of being dismissed, belittled and ignored, they are finally rising.

With all the new expertise and forward thinking on board, Guyana transforms. There are so many backup plans and safety nets in place that when the oil market crashes in 2050, the rigs are the only thing to shut down. I guess there's something to be said about female leadership after all. What do you think, Guyana? Are we ready?

4.1.4 Greasy Palms

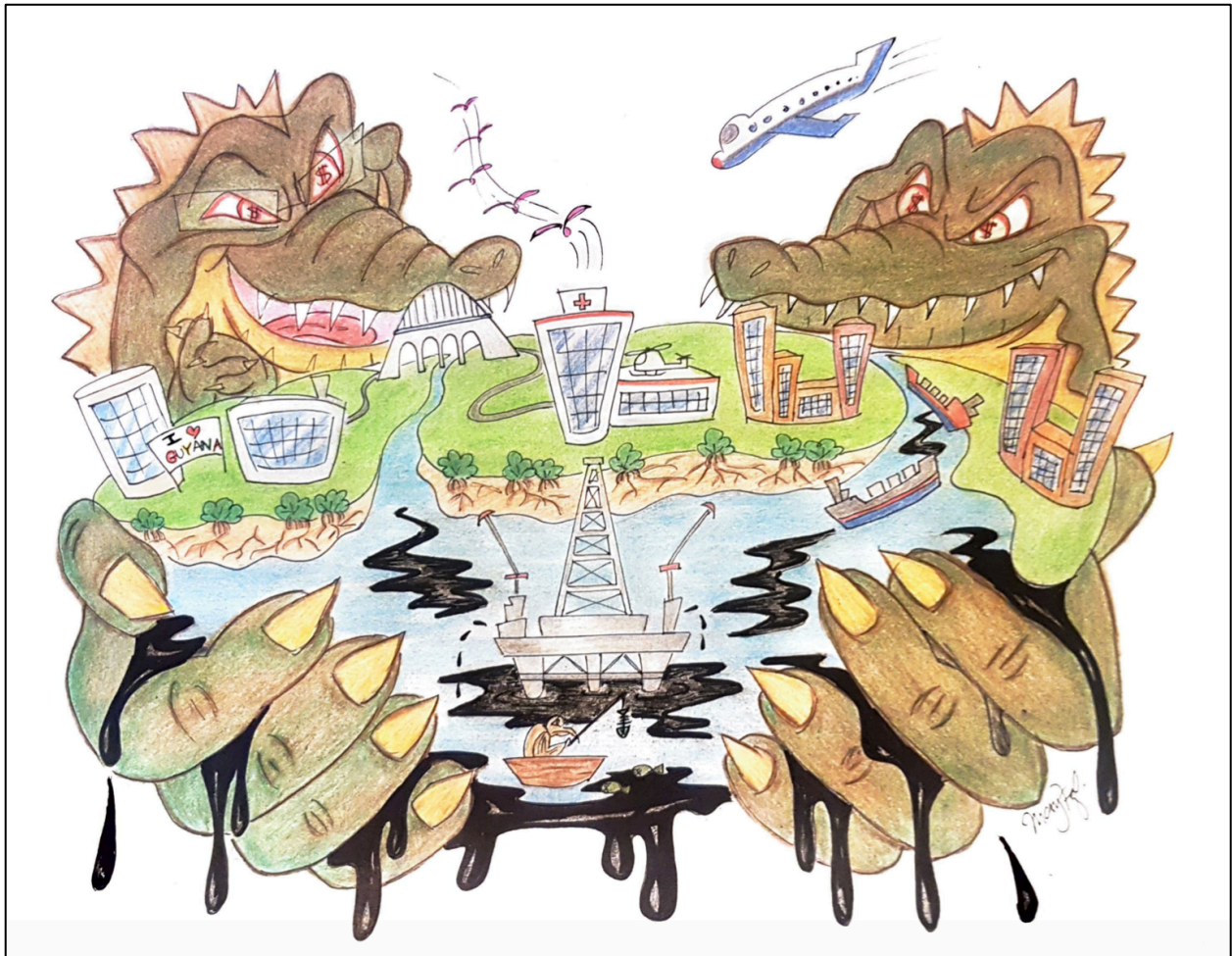


Figure 8: Greasy Palms (Illustrated by Mary Fung-a-Fat)

The contentious 2020 Mother of All Elections amidst the coronavirus pandemic left the country so emotionally exhausted that when the APNU+AFC coalition decided to go ahead with the election petition on the last day of August, we just didn't have it in us. Sure, there were some people still carrying that axe to grind, and they took it to court and appealed every letter of every ruling, but most people just wanted to move on. Time to get out of this state of limbo and get back to work. The PPP puts their efforts into trying to build their vision of a rich and prosperous Guyana. The new young cabinet appointed by the president gives many people hope, however, the surprise election of the Vice President makes many others apprehensive. "Please don't let them be the PPP of old", they pray. Nevertheless, deciding to give them their fair chance, and not wanting to live in the past, the people wait to see what happens. But they have not forgotten.

The first order of business in 2021 is to kick off a few big infrastructure projects which they hope will secure their re-election come 2025. They decide that the Mahaica Gas Pipeline, the Essequibo Deepwater Harbour and the new Demerara Harbour Bridge are the best three to start with since there is significant synergy to be found in their simultaneous completion. The pipeline is

intended to bring gas from the oil rigs onshore to aid in reducing the country's energy costs, which will finally make things like manufacturing and agro-processing more feasible. Coupled with the access that will be provided by the new bridge, this will open up the whole of West Demerara for commerce and investment. The placement of the harbour in Guyana's largest river will facilitate the efficient export of those value-added products. The environmental assessments are slap-dash and signed off on before anyone even has a chance to read them. They're never even released to the public. But construction begins and is progressing at a decent pace, though it feels like every year there's a bigger allocation of funds to the projects that no one can really explain. We got oil money now, though, so who's counting? The bridge and the pipeline are completed just in time for elections and their plan is a success. They win again.

By 2027 the harbour is complete and is having a catalytic effect on trade in Guyana. Speaking English and being in such a convenient location to access Atlantic shipping routes, we become a conduit for trade between South America and the northern hemisphere. Brazilian soy and sugar, Peruvian copper and textiles, Columbian coffee, cocoa and you can probably guess what else are all passing through by the shipload. But it's just business, man. We don't care. Until little white baggies start being confiscated from 15-year olds in schools, and there are more and more people with addictions on the streets, but no rehab centres to help them.

The Ogle-Timehri and Linden-Lethem access roads are completed in 2030 and 2040 respectively. With the renovated airport now able to handle some real capacity, there's an increasing number of South American flights and airlines servicing Guyana daily. There's even a flight route to South Africa. We're no longer at the mercy of Caribbean-Airlines' exorbitant prices. Guyanese can actually travel, see the world. We thought we had a lot of foreigners when the oil started flowing but the past two decades have seen a huge influx of people, and honestly, they've only brought expertise and raised the bar. As one would anticipate, the tourism sector has transformed, with hotels and resorts scrambling to learn languages and raise their standards to meet outside expectations. All in all, it's a good thing. We knew we needed to pull up our socks.

Economically, on paper, Guyana has never been better. Socially, the inequalities between rich and poor are pretty bad, but the people have cheap power and nice roads now, so their votes are secured. Environmentally, we've never been worse. The water in the Essequibo is becoming more and more polluted with all the ships passing through, and the dumping of contaminated reservoir water from the oil rigs is starting to affect our fish. They have a taste to them now that wasn't there before. It's not rank, it's just... like chemicals. The pipeline is leaking and has been for a while, but with all the back scratching and palm greasing going on between Exxon and the government, cries from environmentalists and NGOs fall on deaf ears. More and more dead marine life starts washing up on our shores. The ibis are gone, and the mangroves are receding, but the spring tide is here. And without the mangroves to protect us, the sea wall doesn't stand a chance. The first breach happens at Mahaica, but soon the entire coast is flooded. It's bad, worse than 2005. And then, to make matters worse, our first oil spill happens after an accident with one of the vessels. Now would have been a nice time to have that Disaster Risk Management Academy that someone talked about a few decades ago. The Great Flood brings all economic activities on the coast to a sudden halt. Trucks can't take produce to the harbour and all flights from Ogle are grounded. It also inhibits the EPA's emergency response team getting out to the rig to stop the slick from spreading. The handling

of the disaster is left completely up to Exxon, who simply sets the oil ablaze. "Nothing else made financial sense to us", they explain. Classic.

When the water finally recedes, there are protests and petitions against the government's handling of the situation. "Why weren't we prepared for that?", "Didn't you see it coming?", "How could you let them just burn it?". But this is what we wanted right? To be rich over everything else. We didn't care about the tradeoffs when the going was good but now we are forced to ask ourselves "Was it all really worth it?". By the time the 2050 campaign season rolls around, construction on the Amaila Falls Hydropower Plant is almost complete. The petroleum market crashes later that year but thankfully our economy has diversified a lot since first oil. Financially, we'll survive. However, with the environmental disasters still so fresh in people's minds, parties may have to try a different tactic to win this time around.

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If you would like to contribute to the research/data of this project or share your thoughts on the scenarios, I invite you to please take the 5 minute survey at <https://www.surveymonkey.com/r/Guyana2050ScenariosProject> or you can call 222-2503 to do it over the phone. If you have a QR code scanner on your smart phone you can just scan the barcode and it will take you to the online page. Most of the newer smart phones do this by simply opening the camera and letting it focus on the barcode. The survey is anonymous. I will not ask you for your name and I would be eternally grateful for your participation.



Figure 9: Survey QR code

4.2 ANSWERS TO RESEARCH QUESTIONS

S1: What is the potential of public scenarios to contribute to transformational change?

The potential of public scenarios to contribute to transformational change is threefold if done strategically. Scenarios will not cause transformational change by themselves just by virtue of existing, but there is potential to be used as a tool to intentionally facilitate transformation processes. By examining the multi-level perspective (MLP) and the theoretical capabilities of public scenarios, opportunities for almost perfect synergy become apparent.

The MLP conceptualizes change as happening when a niche development seizes a window of opportunity resulting from external pressure on the regime to break through and reconfigure the system (Geels, 2002). During the niche development stage, innovations must be conceptualized, refined, and gain the support of actors outside the niche. Public scenarios can be used to bring innovations to the attention of a much wider audience outside the niche, providing an excellent

opportunity for them to gain momentum via support from other niches or through collaboration with regime players. During the scenario development process, one of the reasons why participants from various different levels and sectors need to be included is to gain insight into any niches that are developing outside of the public's view. When these innovations are incorporated into the scenarios and published in the media, they are essentially given a public spotlight that spreads awareness and explores the niche's potential contributions to society in the long-term. This presents a chance for other niche actors with similar objectives to form coalitions, and for threatened regime players to collaborate and adopt the innovation to retain control and remain in line with the changing values of the landscape (e.g. oil companies investing in renewables so as to not be ejected from the energy sector).

Public scenarios can also help create the window of opportunity needed for the niche to break through by causing ripples in the landscape which in turn put pressure on the regime. By using one of the future scenarios to expose why a perpetuation of the status quo is undesirable, public scenarios can be used to shift values in the population and sow seeds of dissatisfaction with the regime. As the business-as-usual approach (stability in the regime) comes to be seen as problematic, the window of opportunity opens for the niche innovations to break through and provide solutions. In this way, public scenarios can simultaneously reveal the problem and provide the solutions, making them an efficient tool in the arsenal for bringing about change.

The last thing that must be mentioned here is public scenarios' potential to spark discussion about the future and open it up to the existence of multiple different possibilities. This can kickstart the process of developing a shared vision which is a vital component in achieving transformational change (Costanza, 2000). This, coupled with the two other contributions mentioned above, gives public scenarios significant potential to contribute to transformational change processes.

S2: How should scenarios be designed (content, process, format & platform) to encourage public consumption and engagement?

One thing that must be said outright is that designing scenarios for public consumption requires researchers to wear multiple hats. Creating content for public engagement means that scientists have to start thinking like (or hiring) psychologists and entertainers. When designing scenarios for public consumption, the public must always remain the priority. The real purpose of the scenarios, whether it be to get the public thinking about the possibility of different futures or to warn about inaction in the face of climate change, must remain secondary to the first goal of getting the public to engage. The reason for this, quite simply, is that the point of the scenarios will never land if there is no audience receiving it. The public is not obligated to give its attention nor is it inherently interested in the scenarios before it consumes them. Public attention and opinion are notoriously fickle (Downs, 1972; Costanza, 2000) but are easily manipulatable (Lippmann, 1922; Russell Neuman et al., 2014). The art of hitting both targets (the true objective as well as engaging the public) is in the framing.

As for the process of developing scenarios for public consumption, the same rule of thumb applies: cater to the public. Multiple iterative participatory workshops that allow for continuous engagement are often recommended as being key to developing legitimate, salient scenarios

(Hebink et al., 2018; Vervoort et al., 2013). However, consulting with every member of the public in these activities is not realistic; but there is a way to include them on the journey, just to a lesser extent. It was not possible in this research (due to COVID-19) but it may be worthwhile when crafting scenarios for public consumption to film parts of the development workshops to demystify the process for the public; just enough that they understand how it works, but not so much that participants feel shy or the novel parts of the scenarios are given away before publication/release. It can be done in a way that piques curiosity and while building credibility and transparency, similar to a movie trailer. Criteria addressing content, format and platform are presented in Table 4 below.

TABLE 4: CRITERIA FOR BUILDING SCENARIOS THAT OPEN PUBLIC DISCOURSE

#	CRITERIA	NOTES & EXPLANATIONS	SOURCE(S)
1	Make your scenarios an emotional rollercoaster.	Emotional content allows people to connect with the scenarios; it gives them something powerful to relate to and indentify with which can help in managing the uncanny; include elements that will shock, inspire, infuriate or disgust the public; try to evoke strong positive (but also negative) emotions; strong emotions make people care which makes them want to share and talk about the situation with others; strong positive emotions are more likely to be shared than negative ones but strong emotions on either end of the spectrum have the potential to induce engagement; however, be careful because an abundance of negative emotions may cause people to shut down; have some of the scenarios play on hope and happy endings while others play on fears and sad/bad endings; stories that arouse extreme emotions are shared and talked about more often than those that elicit moderate/tame/neutral ones.	Auger (2013); Bendor et al. (2017); Berger & Milkman (2010); Knossenburg, Nogueira & Chimenti (2016); Libert & Tynski (2015).
2	Don't overwhelm your audience.	Space out your emotional heavy-hitting points throughout your scenario; intersperse with pauses or periods of low emotional intensity to give your audience a chance to "come down" or cleanse their emotional palette; will also keep them from being emotionally satiated, bored, or overwhelmed; scatter some internal dialogue throughout the scenarios; voluntary listeners during early drafts indicated that this provided a break from the intense events that were happening in the narrative.	Libert & Tynski (2015).
3	Tell the story through a narrative and sequence of events.	Strong stories with considerable detail are more engaging and allow people to follow along in a smooth coherent manner; they can remain plugged in to the scenario and not have to keep refocusing their attention or jump back and forth on the timeline.	Bendor et al. (2017); Candy & Dunagan (2017); Hajer & Peizer (2018).
4	Make the scenarios such that people can project them onto their own lives and make themselves the protagonists of the story.	Will make the scenarios feel personal and real and will hopefully minimize "third person effect" whereby people are less inclined to address/consider something that they feel is too far removed (either physically or temporally) from themselves; include provisions/details for specific locations so that the scenarios have a hitting "close-to-home" feel.	Auger (2013); Van der Linden et al. (2015).
5	Take advantage of complex human desires and fears by appealing to both extrinsic and intrinsic motivations.	E.g. making money, growing the economy = extrinsic, while supporting your family, giving your grandkids a good life = intrinsic; extrinsic motivations will create quick short term interest while intrinsic motivations encourage people to stick with things long-term; the theory is that extrinsic motivators will act as "click-bait", or make fodder for small talk, while the intrinsic motivation encourages deeper thought and reflection, which may result in deeper conversations and cause the scenarios to have a longer lasting effect on the public or spend a longer time on the public agenda (i.e. more time to affect public discourse).	Auger (2013); Van der Linden et al. (2015).
6	Include a memory trigger.	People talk about the things that they're thinking about and we think about the things that we can remember; this also helps to make the scenarios memorable because it gives readers something familiar to latch onto when reading them.	Berger & Milkman (2010).
7	Include immediate day-to-day concerns in the scenarios, not just the snapshot of the end.	"People tend to heavily discount (uncertain) future events" (p. 760) and put priority on day to day concerns over planning for the future so if the scenarios are only painting a picture of Guyana in 30 years, they prefer to read/engage with something more "relevant" to the present.	Van der Linden et al. (2015).
8	Have the scenarios expand on things that are already happening.	Will increase relatability and make them feel less far fetched as they are extensions of real events and not entirely new fictions; choose events/circumstances which are currently problematic that can serve as good "jumping off" points for potential solutions; will assist in grounding the scenarios in familiar/logical reality; e.g. the use of niche practices or "seeds" creates a practice-based approach that can actually be actioned (and the new initiative already exists so it is less abstract); using seeds combined with governance transformations makes for extended imaginaries which would be novel, intriguing for people to see.	Auger (2013); Mangnus et al. (2019); Van der Linden et al. (2015).
9	Do not allow the scenarios to stray too far into the future where the concepts become alien.	People will not be able to relate and will therefore not engage; keep timeline reasonable and have indicators or nudges in the scenarios to suggest that it isn't that far away, e.g. have this generation's children be the characters in the scenario or include something like "30 years is only one generation away".	Auger (2013).
10	Be far fetched, but believable; familiar but advanced; similar but different.	Include things that are unusual, novel and distinct, but keep a degree of plausibility and credibility; people will dismiss them if they are too "out there", but there's nothing to talk about if they are too familiar; include new ideas or new framings of existing ideas; include unfamiliar things but focus on the familiar aspects of them; maybe start with familiar things and then move onto the unfamiliar when readers/viewers are plugged in or already "on the hook".	Auger (2013); Knossenburg, Nogueira & Chimenti (2016).

TABLE 4: CRITERIA FOR BUILDING SCENARIOS THAT OPEN PUBLIC DISCOURSE

#	CRITERIA	NOTES & EXPLANATIONS	SOURCE(S)
11	Include a "perceptual bridge" between the audience's perception of their world and the imaginary/fictional element of the scenario.	to give people something familiar to latch onto; the "perceptual bridge" can be anything that people are familiar with (e.g. entertainment, psychology, movies, illusions) that offer insights into the working of the human mind and how it can be manipulated to elicit reaction.	Auger (2013).
12	Create social currency.	Social currency is anything makes people feel like they are smart and "in the know"; i.e. something that people will only know about if they read the scenarios; in group and out group theory.	Berger & Milkman (2010).
13	Frame scenarios to include certain gains for the present or near future instead of uncertain losses for the far future.	People are more likely to take action when certain gains are assured than when losses are uncertain; e.g. if the status quo is framed as having a potential loss in the distant future vs. an action which is framed as a certain loss at present (e.g. buying solar panels will cost a lot of money now vs. doing nothing and climate change potentially causing extreme weather events in the future), it encourages people to conclude that maintaining the status quo might be 'worth the gamble'.	Van der Linden et al. (2015).
14	Cover a range of distinctly different futures that provide clear choices for action with clear consequences.	This will encourage your audience to subconsciously (or consciously) "choose" which one they like best, which gives them something to discuss with others; the clear causal relationships also allow them to think critically about the scenario and its options, making for more constructive conversations.	Sheppard et al. (2011).
15	Don't make your audience feel hopeless or helpless.	Be careful not to overwhelm the readers with things that need to be done now or things that cannot be changed; it is important to bolster a sense of agency in the public so include a negative stimuli to warn about impending risks or tradeoffs as well as positive stimuli of things they can do to prevent/avoid them.	Sheppard et al. (2011).
16	Make them useful.	Include something of practical value in the scenarios, e.g. find a link to an issue that plagues the public and relate this back to your scenarios; include in your scenarios a message for the public good; some people share things because they feel like it will be useful to someone else; it makes them feel smart and helpful; include practical ideas that could really solve some big common problems; one way to craft an emotionally compelling piece that people want to share is to have it do good for the public, e.g. spread awareness or give a message looking out for people.	Berger & Milkman (2010); Libert & Tynski (2015).
17	Make them provocative/taboo but not too morally outrageous.	Have some taboo elements because taboos are interesting and get people talking, violated taboos attract attention, etc.; however, if they are too extreme or unsavory they could cause people to be offended and shut them out; "taboo scenarios must be moderated enough to avoid being dismissed as the incoherent mutterings of a lost prophet" (Schoemaker & Tetlock, 2012, p. 17); if a scenario is too similar it will easily be assimilated into the audience's norms; if it is too outrageous it may cause revulsion or shock.	Auger (2013); Hajer & Pelzer (2018); Schoemaker & Tetlock (2012).
18	Create dialectic tension in your scenarios with 'good' and 'bad' guys.	Having both antagonists and protagonists in your scenarios will create tension which will help to engender deep dialogue; if everyone agrees on something there is nothing to discuss; you must create different "camps" so that there are different positions to take and debate.	Bendor et al. (2017); Schoemaker & Tetlock (2012).
19	Include short explanations about how things work and interact.	E.g. new systems in the future; this entices the audience to explore the concept more; if you include something that gently teases the mind it is more likely to stimulate thought; if it is not immediately solvable, it will hopefully encourage discussion; however, if it is too complex or difficult to understand people are likely to lose interest and move on; ideas, concerns and solutions provided by participants with expertise in the systems being addressed in the scenarios makes them more persuasive as they will better stand up to scrutiny by others with similar experience.	Auger (2013).
20	Appeal to both people's emotional and analytical systems.	People engage more with experience than analysis so make sure to include more experiential or emotional content (e.g. memories) than statistics; take languages of statistics and put it into language of the heart; use some numbers/models/stats but be sure to include the threat of bad things that have happened before or the promise of good things to come to get people emotionally invested in the scenarios; don't include too much or too little technical information because too much can alienate or bore people but too little can leave the concept intangible or whimsical.	Auger (2013); Foege, W.H. (1991); Van der Linden et al. (2015).
21	Include questions.	Include a responsive aesthetic; ask people what their reaction/plan of action would be in each scenario; ask questions to engage your readers' thinking; if people realize they have different ideas or plans for the same scenario it could prompt discussion, e.g. "How do you think the future will play out?"; do not make the questions too presumptuous or intellectually insulting (e.g. "Do you realize that..."; or "Can you even understand what..."); this will turn people off and set them on the defensive; instead ask questions about what they think, e.g. "Could this be the new norm?"	Auger (2013); Bendor et al. (2017); Candy & Dunagan (2017).

TABLE 4: CRITERIA FOR BUILDING SCENARIOS THAT OPEN PUBLIC DISCOURSE		
#	CRITERIA	SOURCE(S)
		NOTES & EXPLANATIONS
22	Make the scenarios accessible for everyone.	Auger (2013).
23	Prepare your audience for what they are about to consume.	Auger (2013); Candy & Dunagan (2017); Hajer & Peizer (2018).
24	Have compelling titles.	Libert & Tynski (2015).
25	Make as experiential as possible.	Bendor et al. (2017); Candy & Dunagan (2017); Hajer & Peizer (2018); Sheppard et al. (2011).
26	Have the scenarios be experienced as collective immersive event.	Hajer & Peizer (2018).
27	Publish them in the traditional media.	Lippmann (1922).
28	Post them on social media.	Russell Neuman et al. (2014).
29	Choose the appropriate format for the platform of publication.	Researcher's own.

S3: Who should be involved in the creation and dissemination of scenarios aimed at sparking public discourse? How, when and why should they be involved?

The actors involved in the development and dissemination of the scenarios have a huge impact on how they are perceived and received by the public. Persons involved in the development phase affect the legitimacy, credibility and salience of the scenarios while those involved in the dissemination are largely responsible for ensuring that they make it into the public domain, which is imperative if they are to succeed at sparking public discourse. Since the information contained in the scenarios needs to be considered legitimate, credible and salient for it to evoke social responses from the public (Cash et al., 2003), it is fair to say that both sets of players are vital to the achievement of the overall task.

For the public to perceive the scenarios as credible, they have to trust that the technical information contained therein is accurate (Cash et al., 2003). This is why experts (e.g. specialists, scientists, professionals, etc.) in the systems being discussed should be included in all stages of the scenario development process. They will have the most insight into how the systems work and interplay and therefore what is needed for change to occur and what the results of that change are likely to be. Their insight and experience will help to make the scenarios more detailed and precise, which will result in them being more believable to the public, especially persons with similar expertise. However, care should be taken when including expert input in public scenarios to ensure that the information is presented in such a way that it is still accessible to laypersons and is not boring or overwhelming.

Other players to consider including in the development of the scenarios for added credibility are government officials, however, this must be done carefully and only if they are onboard with the direction of change being contemplated. Including the government in the process has the potential to win a lot of public support since many people still put a lot of trust in their governments; the risk comes because governments are typically comfortable with the status quo since it is the same system that empowers them. Including them has the potential to hamper truly transformational change and redirect the exercise into more incremental planning which may better suit their interests (Hebink et al., 2018).

Salience has to do with the scenarios' relevance to public needs – *do they address real issues being experienced? Are they useful?* (Clark et al., 2016). Creating salient scenarios necessitates the inclusion of individuals who are currently experiencing the issues being addressed; e.g. a scenario concerning food security should include decision makers, producers, retailers, consumers and persons who are already food insecure to ensure that the solutions generated are actually applicable at all levels. Local entrepreneurs are also extremely important to include in scenario development to supply ideas and insights on niche innovations. Niches emerge as bottom-up attempts to solve current issues plaguing the public so the inclusion of innovators and local entrepreneurs lends a significant degree of salience to the project.

To be considered legitimate by the public, the scenarios have to be seen as unbiased, fair and respectful in their consideration and representation of different views and perspectives (Cash et al., 2003). To this end, individuals from all different corners of society – especially local leaders - also need to be included in the development process. It would be extremely tone-deaf to create scenarios for public consumption without including members of the public in their creation to make sure that

they are representative and respectful of the wider population. It would be wise to make sure that persons from all different religions, races, income brackets, sectors, demographics and genders are included in the development of the scenarios.

For the dissemination of public scenarios, since the media sets the public agenda it absolutely must be included to get the scenarios out into the public domain (Russell Neuman et al., 2014). Traditional media sources like TV stations and newspapers are usually considered by the public to be credible sources of information and should be utilized to spread the word about the scenarios; depending on what format they're in (i.e. written narratives, videos, experiential), the media can be used to publish them entirely. In the case of experiential scenarios that cannot be published (e.g. like in Hajer & Pelzer, 2018), the media can be used to announce the opening of the exhibition or to review the experience after the fact to entice people to visit. Local celebrities can be included in dissemination to spread awareness of the scenarios in their communities on social media and convince their fans and followers to engage.

Lastly, it may be useful to involve artists in the latter stages of scenario development to put all the ideas together in a coherent and compelling way which encourages engagement and inspires conversation. Since appealing to the public is not typically the priority of experts or laypersons, artists (e.g. painters, writers, filmmakers, musicians, etc.) could supply the necessary talents to turn the bits and bobs of problems and solutions into enjoyable narratives that meet all of the criteria laid out in Table 4 and really bring the scenarios to life. The ability of artists to evoke human emotions makes them very appropriate to include in scenarios aimed at sparking public discourse.

S4: What new public interactions occur as the result scenarios' publication in the media?

As was mentioned before, once the scenarios were published, public interactions were measured via social media metrics (likes, comments, shares) and the survey which asked questions like "Have you talked about the scenarios with other people?", "Have you asked anyone else to read the scenarios so that you could discuss them?", and "Have you heard other people (not including yourself) talking about the scenarios?". The survey responses were considered to be a more reliable indicator of meaningful public interactions due to the specificity of the questions asked and social media's necessity for assumptions and inference to translate likes and shares into discursive interactions. At the time of writing, 49 persons had responded to the survey, 4 persons emailed the researcher, and one individual called in. Of the people that took the survey, 85.7% said that they had read all four, indicating that the scenarios did well in keeping readers engaged. The social media engagement is shown in Table 5 below:

Table 5: Facebook Engagement with Scenarios			
Channel	Likes	Comments	Shares
Researcher's Personal Post	99	12	47
News Room	209	5	23
Kaieteur News	37	3	8
Stabroek News	0	0	0
TOTAL	345	21	78

Intuitively thinking, multiple comments could indicate conversations, however, while some of them said encouraging things like "the scenarios presented in this post are quite sobering and need to be taken seriously" and others posted their own ideas for Guyana's developments or offered to collaborate on research, no debates actually took place; thus, the problem with social media metrics. Stabroek News did not share the story on their Facebook page so there was no information on its engagement there, however, the researcher made contact with their print circulation department and was informed that the newspaper typically sells anywhere between 9,000-11,000 copies on Sundays, so it seems fairly safe to assume that the scenarios reached a few thousand people at least. All four of the individuals who emailed the researcher had positive reactions to the scenarios while the one man who called in was not pleased with them at all (though he seemed to have not understood the exercise). He insisted that the information was incorrect because the things mentioned in the scenarios were not happening in Guyana at present and that the scenarios were not talking about the future because he saw them in yesterday's paper. Unfortunately, he did not want to take the survey. Of the 49 people that took the survey, 87% indicated they read the scenarios on social media, which strongly suggests that the convenience of being able to access the survey via the link in the posts played a big part in respondents' participation.

Survey responses indicated that 47% of people who took it had engaged in conversations about the scenarios with others, 63% had asked others to read the scenarios, and 53% said they had heard other people (not including themselves) discussing them. Of the 47% of people that were talking about the scenarios, 17% said that they had had multiple conversations, meaning that there were already more conversations taking place that weren't being captured. Of the 53% of individuals who hadn't spoken to anyone about them at the time of taking the survey, 46% of them had asked others to read the scenarios so that they could discuss them later. This means that 71.4% of people who took the survey had either had or were intending to have conversations about the scenarios. This was supported by the voluntary comments left by individuals which have been copied and pasted to maintain integrity:

“ Interesting concept. It definitely made for some interesting debate ”

“ Awesome stuff. Wold love to see this go viral and spark a conversation in our country, bringing people aware of our potential future. ”

“

These are a powerful collection of ideas and lays solid topics for discussion. The four scenarios are deliberately presented in an independent format even as there is an obvious codependence among all of them. As before, content like this lays the table for constructive National discussion on long term nation building and policy planning in Guyana, something the nation needs so terribly, at both the civic and government levels.

”

This was a valuable exercise. In respect of #3 -Glass Ceiling more needs to be done to educate citizens respect the rights of every single one of us regardless of age, race, gender, religion, social class, economic status, or geographic location. We need civilized discourse on these issues.

Another encouraging result is that of the 53% of respondents that hadn't spoken to anyone about the scenarios, 38% had heard others having their own discussions which suggests that there were independent conversations happening outside the pool of survey respondents.

It is well known that voluntary surveys can be problematic when polling preferences because they tend to polarize the data since people with strong opinions are more likely to take the survey than those with neutral or moderate feelings (Cobben & Bethlehem, 2005); it usually exerts a bias for positive reviews of subjective experiences e.g. "I loved this!" and definitely can be observed with this survey as well (e.g. that a whopping 87.8% of those surveyed said they enjoyed reading the scenarios). However, for questions that are objective and/or observatory like "Did you hear other people (not including yourself) talking about the scenarios?", this bias is considerably less since the individual's personal feelings or opinions do not come into play This is why it is extremely positive that 53% of people polled responded 'Yes' to this question.

Even though 49 persons is a dismal sample out of the large but unknown number of people reached via publication in the media, the error seems to lie more in capturing the interactions than in the scenarios themselves. The results in terms of the scenarios' ability to spark public conversations are still promising.

RQ: How can scenarios be used to open public discourse about the possibility of different futures?

To open public discourse about the possibility of different futures means to spark public conversations about the idea that the future is not just influenceable, but designable, and that the choices made in the present have the power to steer us down a multitude of different paths. Using scenarios to achieve this is possible, as this research shows. Aside from using the criteria laid out in Table 4 and including the people outlined in S3, lessons learned from this project would be 1) to vary the scenarios more in how the futures turn out and less in their desirability, 2) stick to the agenda, and 3) to publish the scenarios at an opportune time.

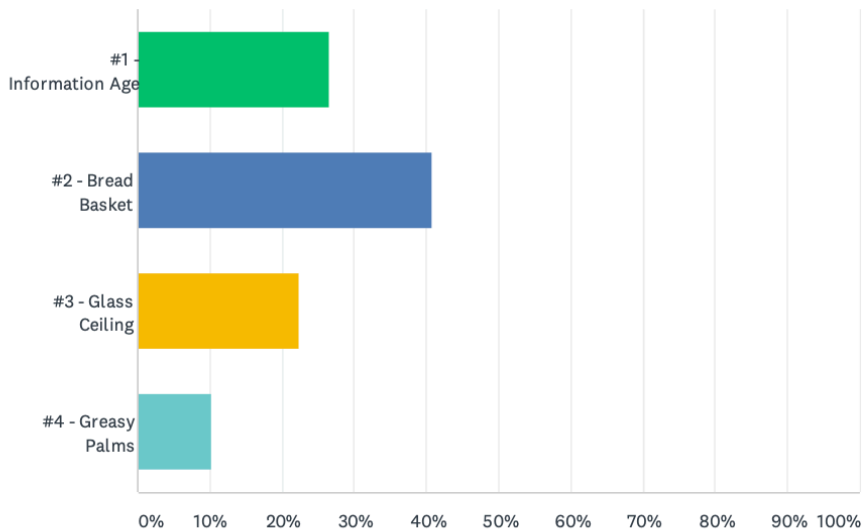
Scenarios are excellent for exploring the consequences of certain decisions and illustrating the impacts they will have on the future. The more distinct the futures are, the clearer the consequences of the present action being contemplated will be. Depending on the purpose of the scenarios, it can be tempting to show certain decisions as catastrophic and others as salvational and to exaggerate those scenarios until there is no way that someone looking at them could doubt which one was better (e.g. climate change scenarios that typically show a fossil fuel hell vs. a clean energy

utopia). However, what this tends to do is polarize people into two groups: one that "knows better" and wants change, and the other that is invested in the status quo that now has to defend itself. What this creates is a space that is the opposite of conducive to constructive discourse because both sides become so charged. Those types of scenarios are also not helpful for neutral persons who may be attempting to enter the debate because the way the options are presented doesn't really leave them with much choice. What would you choose if you had to pick between heaven and hell? It is really only an illusion of choice. And while this may seem counterintuitive to create scenarios that don't differ as much in their desirability, doing so gives the agency back to the public to debate, decide and choose which future they really want. Once people realize that they have the power to mold their futures, the possibilities become endless.

For scenarios to engender discourse about the possibility of different futures, people's minds cannot already be made up about which future they want before the discussion starts. In other words, the decision can't be too easy; the contrast in desirability of those futures can't be too stark. This is not to say that some scenarios cannot be painted as advantageous in certain regards, but they must feel fair in their inclusion of tradeoffs. This insight was gleaned from respondents' preference of the scenarios, which surprised the researcher. While it was expected that Bread Basket was going to be the favourite because it is a dream that is near and dear to many Guyanese hearts, it was not expected that almost 60% of respondents would prefer something else. When asked in Q31 why they chose the scenario they did, many responded that the education tradeoff in Bread Basket was a deal breaker. Realistic tradeoffs that create hard decisions make for good public debate.

Q30 Which scenario was your favourite?

Answered: 49 Skipped: 0



ANSWER CHOICES	RESPONSES	
#1 - Information Age	26.53%	13
#2 - Bread Basket	40.82%	20
#3 - Glass Ceiling	22.45%	11
#4 - Greasy Palms	10.20%	5
TOTAL		49

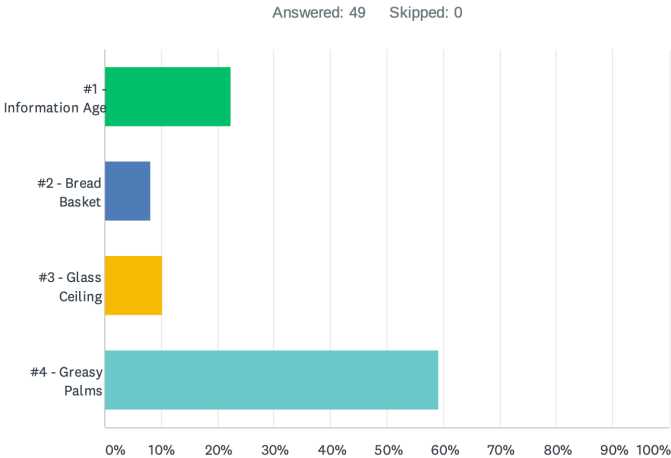
Figure 10: Summary of responses to survey question Q30.

The second note on how to use scenarios to open public discourse about the possibility of different futures is a check for the researchers or stakeholders who preconceive the exercise for their own agendas. It became apparent when researching criteria for public facing scenarios that oftentimes the criteria for crafting useful scenarios and the criteria for sparking discourse diverge; e.g. Wiek & Iwaniec's (2013) list of criteria for quality sustainability visions focus heavily on reconciling contradictions between completely transformed systems, casting the vision far into the future and including theoretical models, while the criteria for sparking public discourse specifically aim to soften these things and make scenarios more relatable, less technical, and very emotionally stimulating. Therefore, if the actual agenda of the scenarios is to spark public discourse, researchers will have to compromise on their compulsions to make things objective, and don hats of subjectivity, empathy and sensationalism. This is why in S3 it was suggested to include a writer or someone who is comfortable weaving stories so that the scenarios feel like enchanting narratives about different possible futures and not like scientific reports.

The final way that scenarios can be used to get the public thinking, talking and believing in the possibility of different futures is by releasing them at the right time. There are two points to this: 1) to publish then when perceived options for the future are bleak or uncertain, and 2) to publish

them when there's not a lot going on in the news that will steal public attention away from the future. It is natural that when the future seems uncertain people are more likely to indulge in fantasies about different possibilities. By showing the public how different futures can be achieved, scenarios can provide them with viable options for the future when they feel like they have none. The scenarios for this project were released in Guyana at a time when the country's future was the most uncertain it had been in decades. The discovery of oil plus a five month long political stalemate, all on the backdrop of a pandemic, made for a very uncertain future. The survey results also told a story of hopelessness as the scenario that people hated the most was also the one that they thought was most likely – Greasy Palms (See Figures 11 & 12). This could be why the scenarios were considered to be salient and were so well received by the public. Keeping in mind the survey bias, the information shown in Figures 13 and 14 is still encouraging, especially since even 5 out of the 6 persons who did not enjoy reading the scenarios (they responded 'Neutral' to Q6 about whether or not they enjoyed reading the scenarios), still thought they were useful and that Guyanese should read them.

Q32 Which scenario was your least favourite?

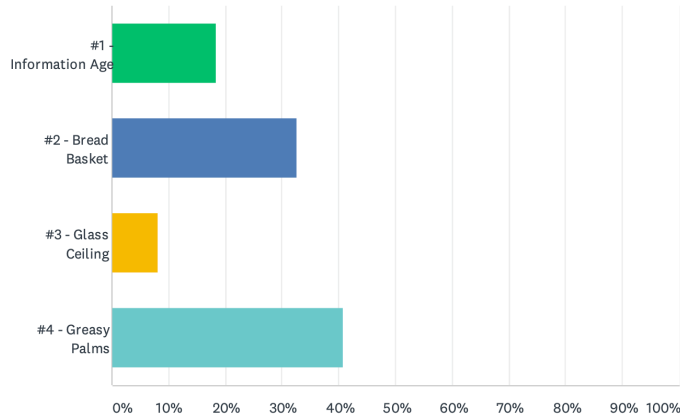


ANSWER CHOICES	RESPONSES	
#1 - Information Age	22.45%	11
#2 - Bread Basket	8.16%	4
#3 - Glass Ceiling	10.20%	5
#4 - Greasy Palms	59.18%	29
TOTAL		49

Figure 11: Summary of responses to survey question Q32.

Q34 Which scenario do you think is most likely?

Answered: 49 Skipped: 0

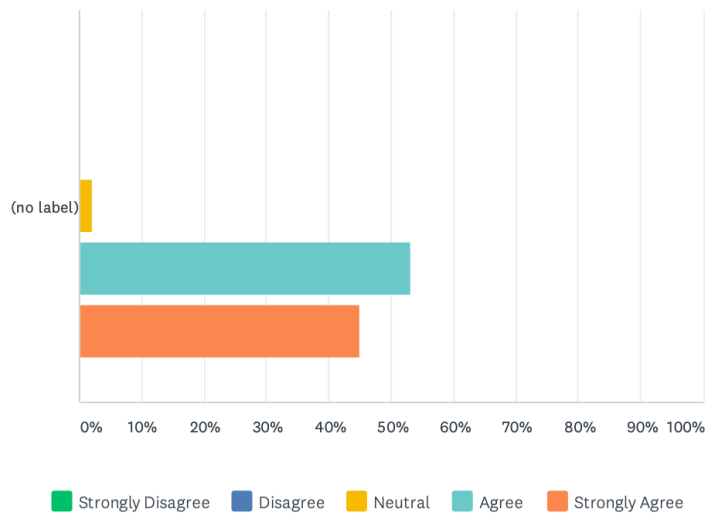


ANSWER CHOICES	RESPONSES	
#1 - Information Age	18.37%	9
#2 - Bread Basket	32.65%	16
#3 - Glass Ceiling	8.16%	4
#4 - Greasy Palms	40.82%	20
TOTAL		49

Figure 12: Summary of responses to survey question Q34.

Q22 I think the scenarios are useful.

Answered: 49 Skipped: 0



	STRONGLY DISAGREE	DISAGREE	NEUTRAL	AGREE	STRONGLY AGREE	TOTAL	WEIGHTED AVERAGE
(no label)	0.00%	0.00%	2.04%	53.06%	44.90%	49	4.43
	0	0	1	26	22		

Figure 13: Summary of responses to survey question Q22.

Q24 I think Guyanese should read the scenarios.

Answered: 49 Skipped: 0

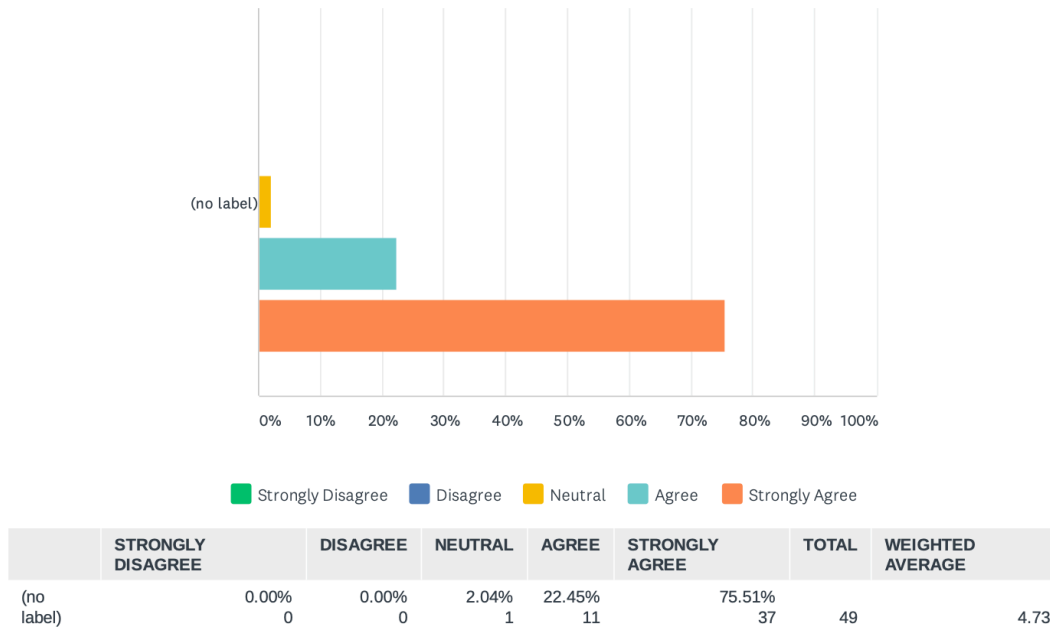


Figure 14: Summary of responses to survey question Q24.

The reason for recommending that they not be published when there is a lot going on in the news is obvious: the present will always take precedence over the future on the public agenda (Van der Linden et al., 2015). Lots of news will take public attention away from the scenarios and dominate the discourse, making people less likely to engage in discussions about the future and the possibilities contained therein.

These were the techniques and ways in which scenarios were used in this project to spark public discourse on the possibility of different futures. These voluntary comments that survey respondents left suggest that the discourse surrounding the possibility of different futures for Guyana was definitely affected, if even just by a little bit. The comments expressing a desire to hear even more possible futures were especially encouraging.

This was well thought it and will definitely make more Guyanese start to think about our future. The time is now.



These scenarios should be given to students (high school, university level) for discussions I hope government officials will listen and take appropriate actions.



Good work... to get people thinking of what future they would like, and that they have the ability to create that future.

It opened my eyes to scenarios I never thought about it and so it puts me in a position to want to fight harder for the Guyana we deserve.

“

I didn't want to answer 34 and 35 as I think all the scenarios outlined are highly likely..... they are really all within the realms of possibility, it's just a shame that it's taken 30 years to realise these dreams!

”

Super interesting. Makes you think about what can happen. the little decisions you make now can radically change where you are in 30 years.

The speculation were marvelous and I would like to see other outcomes

“

These Scenarios are projections and not predictions. At the wheel of this we have the Guyanese People....politicians, influential families and the regular man. Humans are unpredictable and I'm curious to see the outcome. The scenarios give an insight to what MAY or Should come if areas and aspects of our nation are overlooked or neglected.

”

I really like Scenario two(2) it's very plausible and more sustainable, I can't find anything to disagree upon in no. 2 , for now I really can see no.2 as our best option for sustainable development , once again I really enjoyed reading your thesis's, looking for to more engagement 🙏

“

I do believe that our country can move towards a better future, especially if there are persons in the country (like you) who keep doing stuff to help. Doing things even if it's just one at a time or doesn't look like it's working, but doing something can have an impact, that impact might take a while to happen... but it can. Our country, despite what others might say does have individuals with unlimited potential, it's just hard sometimes for those persons to move forward because; they don't have the support from their own people. Those aren't the only factors of course but it is one of them, the harsh ones that is. But we just have to get keep trying you know? Keep up the good work, looking forward to reading some more.

”

5 DISCUSSION

Many of the limitations of this research were addressed in Chapter 3 (Methods) as they were realized in the planning stage of this project (i.e. using a voluntary survey, taking participant referrals, researcher bias, non-response bias, undercoverage bias, COVID-19 & data collection, social media metrics, and two of the news sources not printing the survey link). It was pertinent to address them early on so that the results could be viewed through an accurate lens rather than to present them in one way and then backtrack on them in the Discussion.

When the researcher attempted to conduct a mock focus group to allow co-creation of the scenarios, it quickly became apparent that she was not equipped to facilitate/mediate those processes. It was difficult to keep participants on point and stop them from grandstanding without being rude and cutting them off. She also noticed that the less dominant persons in the group started to simply echo whatever the more assertive members were saying, or they would neglect to add anything when asked directly out of timidity. To be safe and not create a very uncomfortable situation with interviewees, she opted for personal interviews.

The point that was made about the researcher probably finding herself in an echo chamber from using participants' referrals ended up being explicitly confirmed in the later interviews when interviewees started referring persons who had already been interviewed. This is when the researcher decided to close off the data collection phase of the project in an attempt to preserve the legitimacy of the scenario data that had already been collected by not letting the hand-chosen participants become a minority.

Some other limitations that cropped up later on that must be acknowledged are the short time frame in which to analyze the results of publication, the inability to make more experiential scenarios, and the end product of the scenarios not seeming that futuristic. Due to turmoil within the country right at the time of intended publication (<https://www.stabroeknews.com/2020/09/07/news/guyana/bodies-of-two-missing-west-coast-berbice-teens-found/>), the newspapers would not run the scenarios story for over two weeks so as to not seem insensitive to the local climate; also because of the simple fact that with turmoil going on there were more newsworthy things to report on. This only left the researcher two weeks to publish, collect the data, and analyze the results (Published September 26-28th, Deadline October 11th).

As for making the scenarios experiential, while the researcher tried to make them as descriptive and as engaging with writing as possible as per the criteria, she strongly believes that a project like this would be much better suited for short movies rather than written narratives due to its objective to engage the public. The public likes to be entertained. However, neither the filmmaking expertise nor the financial resources were there for a master's thesis so this will be presented as an avenue for further research if anyone is so inclined.

The final limitation of the scenarios themselves is that to a Western reader, they will not seem futuristic at all. They may even seem backward. However, all of the futures described are aspirations for Guyana that do not even nearly exist at present. Guyana is still a fledgling developing nation trying to take off. Therefore, it is not an actual limitation to the research because the scenarios were appropriate for the context in which they were developed, however, the researcher wanted to acknowledge that she was aware of how they may seem to outside readers.

6 CONCLUSION

To wrap up this research, the answer to the RQ will be reiterated and the main takeaways of this research provided. The question that governed this paper was: *How can scenarios be used to open public discourse about the possibility of different futures?* The answer is that scenarios can explore and illustrate different choices that result in a multitude of different futures, and when designed specifically to be consumed by the public, can lay out an array of possibilities for them that show how each one of them is actually viable and achievable. By allowing the public to discuss and negotiate between different possible pathways with real trade-offs the scenarios can give agency back to the people by showing them that the power to decide is theirs. In realizing that they have consequential choices and are not just being granted the illusion of choice to placate them, the power to create an infinite number of possible futures becomes real.

They can also be extremely useful at providing hope to the public during times of uncertainty or despair. By presenting different futures that are visibly achievable via the explicit choices made in the scenarios, they can help people to become unstuck in their perception of what is possible.

6.1 ACKNOWLEDGEMENTS

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8 APPENDICES

A. INTERVIEW

1. What is your name and age?
2. What is/are your professional expertise and experience?
3. Are there any institutions/organizations/boards/bodies that you're affiliated with?
4. What does sustainable development mean to you?
 - a. Are you familiar with the three pillars of sustainable development? (social, environmental, economic)
 - b. What do you think of these pillars having equal importance and urgency in Guyana's development?
5. If 8 people were meeting to discuss where to steer Guyana's future, who would you want at the table? I'm not looking so much for individual names but more for which perspectives you would want represented.
6. How do you feel when you think about Guyana's future?
7. Is this (the future as well as how you feel about it) something you think about often?
8. Is it something you discuss with others?
9. Do you think people are talking about it enough? Why or why not?
10. To what degree do you think the future is shapeable, moldable, steerable? Or conversely, predetermined, set in stone, already mapped out?
 - a. So on a scale of 1-10, with 1 being already set in stone and 10 being a blank canvas, where would you put us?
11. Are you familiar with scenario planning?
12. What different scenarios can you see playing out or what different directions can you see Guyana going in between now and 2050?

13. What are some societal goals that you have for Guyana? (things that you would like to see happen)
14. What upsets you most about what is happening in Guyana right now?
15. What are some things you think are important to Guyana's development that you never hear about in the news? Or that people don't talk about?
16. Hinge points are things with room for change, room for improvement; key things that you see change being able to happen in that would potentially influence the country. What hinge points can you think of?
17. What is something that you think is very unlikely to happen but would make a huge difference if it did?
18. A driver of change is an event, phenomenon, action or decision that is effecting change in something else; it is the underlying cause of the change. What drivers of change do you think are going to have an impact on Guyana's future in the next 30 years?
19. What are some niche practices/things that are happening right now that could be seeds of change for the future?
20. Identify any shock events that you think are likely to occur at some point during the next 30 years.
21. Where do you get your local news from?
22. Is there anyone else that you think would be interesting for me to talk to and include in this exercise?

B. SURVEY

Guyana 2050 Scenarios Survey

What did you think?

Below you will find a 5-minute survey on your thoughts and experience of the Guyana 2050 Scenarios Project. I would like to say thank you in advance for taking the time to come on here and fill it out. You are contributing a great deal to the research in doing so. As this is an anonymous survey, there is no need to state your name or affiliations (unless of course, you want to).

* 1. What is your age?

* 2. What is your sex?

- Male
 Female

* 3. Where did you encounter the scenarios?

- Newspaper
 Social media

Other (please specify)

* 4. What format did you experience the scenarios in? Check all that apply.

- I read them.
 I looked at the illustrations.
 I heard them.

* 5. Did you read/listen to all 4 of them or just some?

- All
 Just some

* 6. Indicate whether you agree or disagree with the following statement: I enjoyed reading/listening to the scenarios.

Strongly Disagree

Disagree

Neutral

Agree

Strongly Agree

* 7. I enjoyed looking at the illustrations for the scenarios.

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

* 8. I thought the scenarios were interesting.

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

* 9. I thought the scenarios were boring.

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

* 10. I thought the scenarios were too long.

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

* 11. I related to things in the scenarios.

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

* 12. I found the scenarios to be possible.

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

* 13. I found the scenarios to be plausible.

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

* 14. I thought they were too far-fetched.

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

* 15. The scenarios are unconventional for Guyana.

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

* 16. The scenarios got me thinking about which parts of them are actually possible.

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

* 17. The scenarios contained new ideas that I hadn't thought of before.

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

* 18. The scenarios touched on issues that I feel strongly about.

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

* 19. The scenarios touched on issues that I would like to see addressed.

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

* 20. I can imagine what my life would be like in one (or more) of the scenarios.

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

* 21. The scenarios felt familiar to me.

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

* 22. I think the scenarios are useful.

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

* 23. I didn't understand the scenarios.

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

* 24. I think Guyanese should read the scenarios.

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

* 25. Have you talked about the scenarios with other people?

Yes

No

26. If yes, where did that/those conversation(s) take place?

In person.

On social media.

On the phone.

Other (please specify)

* 27. Have you asked anyone else to read the scenarios so that you could discuss them?

Yes

No

* 28. Have other people tried to talk to you about the scenarios?

Yes

No

* 29. Have you heard other people (not including yourself) talking about the scenarios?

Yes

No

* 30. Which scenario was your favourite?

#1 - Information Age

#2 - Bread Basket

#3 - Glass Ceiling

#4 - Greasy Palms

* 31. Why?

* 32. Which scenario was your least favourite?

- #1 - Information Age
- #2 - Bread Basket
- #3 - Glass Ceiling
- #4 - Greasy Palms

* 33. Why?

* 34. Which scenario do you think is most likely?

- #1 - Information Age
- #2 - Bread Basket
- #3 - Glass Ceiling
- #4 - Greasy Palms

* 35. Which scenario do you think is least likely?

- #1 - Information Age
- #2 - Bread Basket
- #3 - Glass Ceiling
- #4 - Greasy Palms

* 36. What did you think of the timeline (2020 to 2050) of the scenarios?

- It was too long/far into the future.
- It was too short/close to the present.
- It was appropriate.

Other (please specify)

37. Lastly, is there anything else you wish to add? Thoughts, comments, feedback - anything goes. And thank you again for participating.

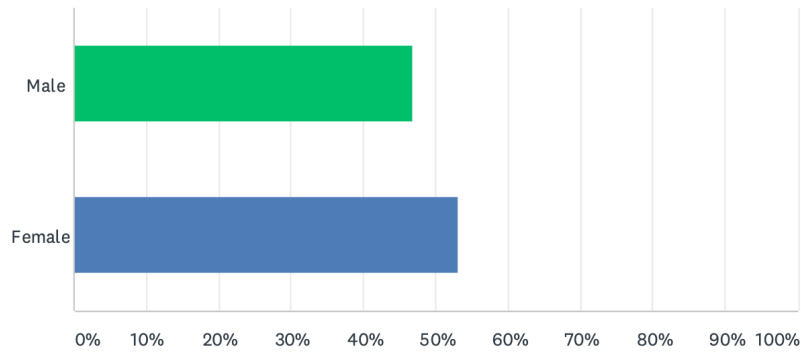
C: SURVEY RESPONSES SUMMARY

Guyana 2050 Scenarios Survey

SurveyMonkey

Q2 What is your sex?

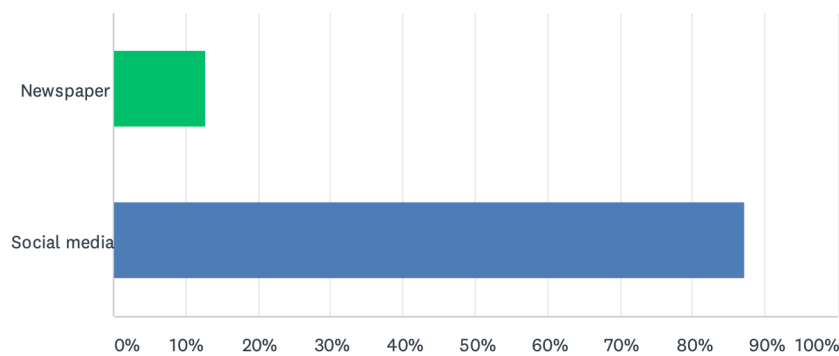
Answered: 49 Skipped: 0



ANSWER CHOICES	RESPONSES	
Male	46.94%	23
Female	53.06%	26
TOTAL		49

Q3 Where did you encounter the scenarios?

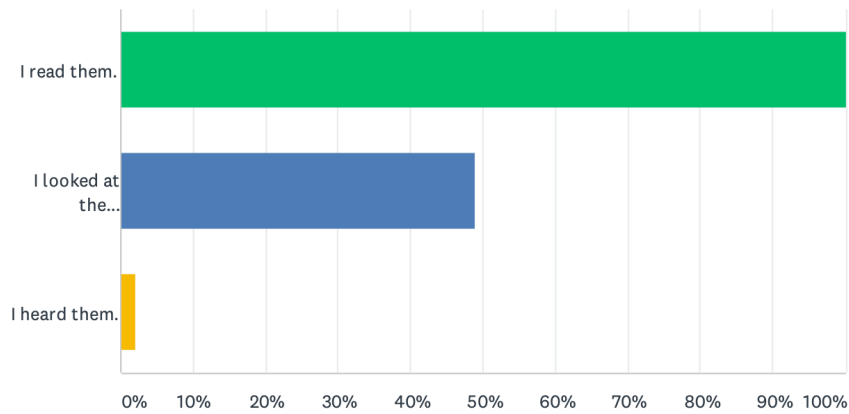
Answered: 47 Skipped: 2



ANSWER CHOICES	RESPONSES	
Newspaper	12.77%	6
Social media	87.23%	41
TOTAL		47

Q4 What format did you experience the scenarios in? Check all that apply.

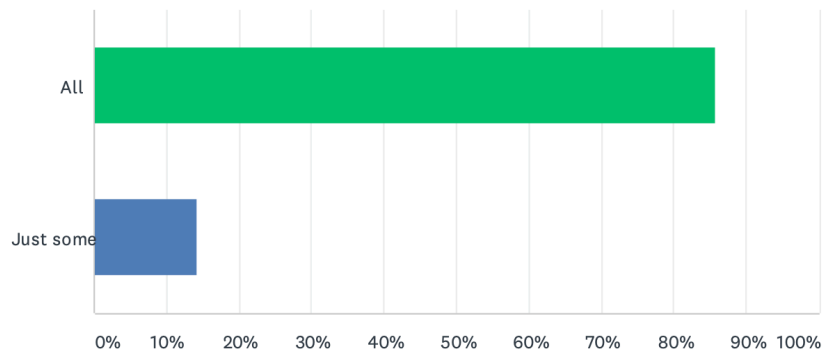
Answered: 49 Skipped: 0



ANSWER CHOICES	RESPONSES	
I read them.	100.00%	49
I looked at the illustrations.	48.98%	24
I heard them.	2.04%	1
Total Respondents: 49		

Q5 Did you read/listen to all 4 of them or just some?

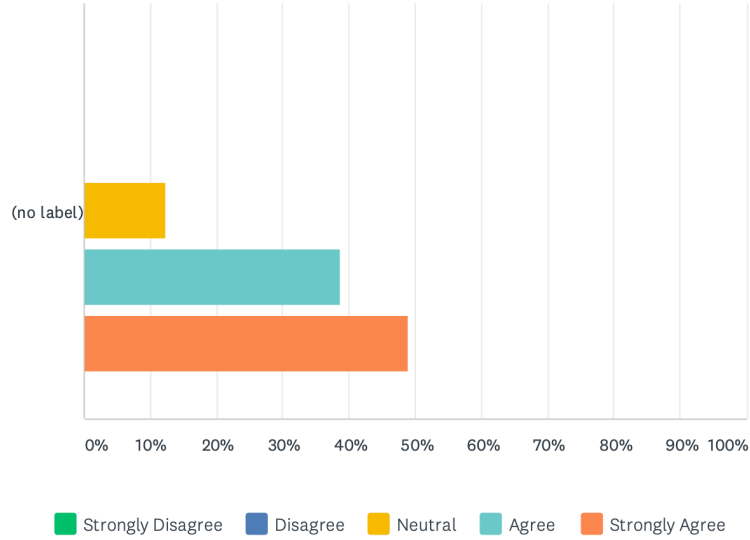
Answered: 49 Skipped: 0



ANSWER CHOICES	RESPONSES	
All	85.71%	42
Just some	14.29%	7
TOTAL		49

Q6 Indicate whether you agree or disagree with the following statement: I enjoyed reading/listening to the scenarios.

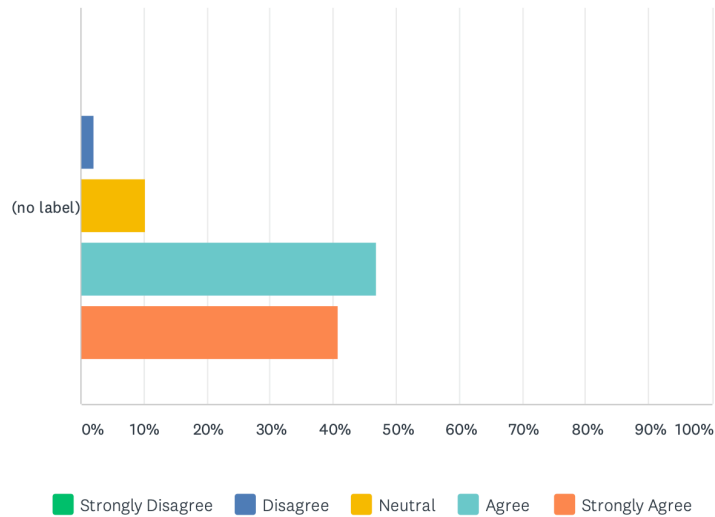
Answered: 49 Skipped: 0



	STRONGLY DISAGREE	DISAGREE	NEUTRAL	AGREE	STRONGLY AGREE	TOTAL	WEIGHTED AVERAGE
(no label)	0.00% 0	0.00% 0	12.24% 6	38.78% 19	48.98% 24	49	4.37

Q7 I enjoyed looking at the illustrations for the scenarios.

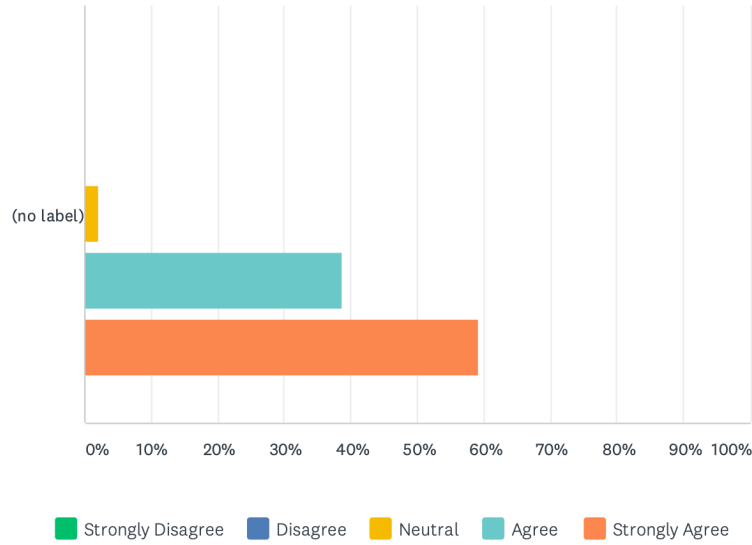
Answered: 49 Skipped: 0



	STRONGLY DISAGREE	DISAGREE	NEUTRAL	AGREE	STRONGLY AGREE	TOTAL	WEIGHTED AVERAGE
(no label)	0.00% 0	2.04% 1	10.20% 5	46.94% 23	40.82% 20	49	4.27

Q8 I thought the scenarios were interesting.

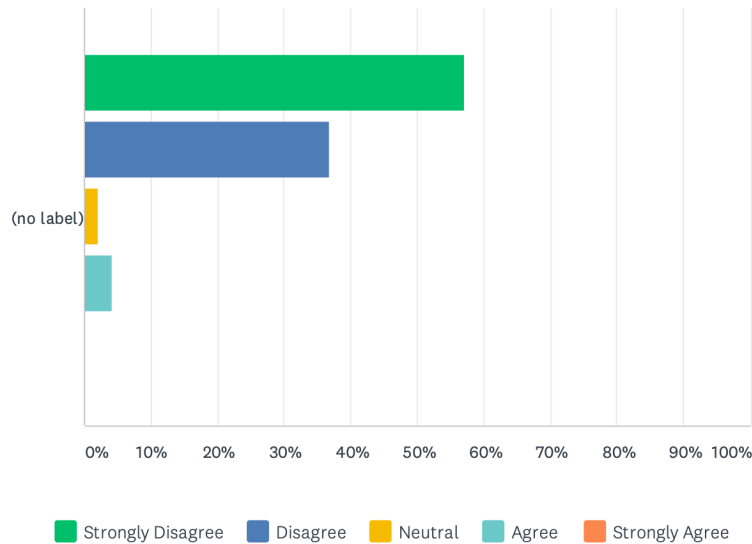
Answered: 49 Skipped: 0



	STRONGLY DISAGREE	DISAGREE	NEUTRAL	AGREE	STRONGLY AGREE	TOTAL	WEIGHTED AVERAGE
(no label)	0.00%	0.00%	2.04%	38.78%	59.18%	49	4.57
	0	0	1	19	29		

Q9 I thought the scenarios were boring.

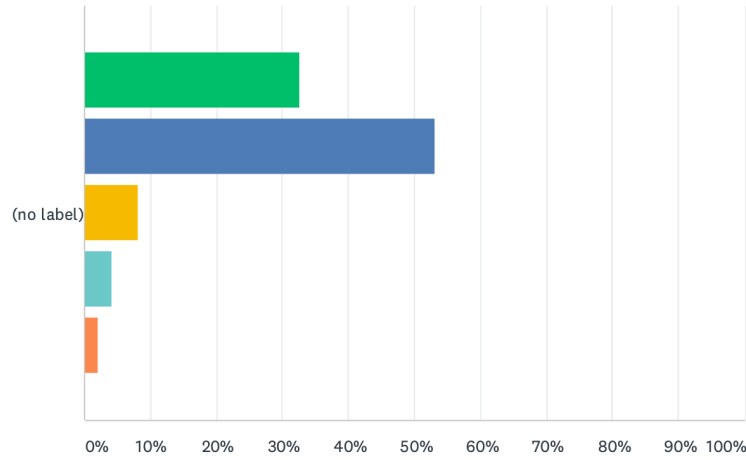
Answered: 49 Skipped: 0



	STRONGLY DISAGREE	DISAGREE	NEUTRAL	AGREE	STRONGLY AGREE	TOTAL	WEIGHTED AVERAGE
(no label)	57.14%	36.73%	2.04%	4.08%	0.00%	49	1.53
	28	18	1	2	0		

Q10 I thought the scenarios were too long.

Answered: 49 Skipped: 0

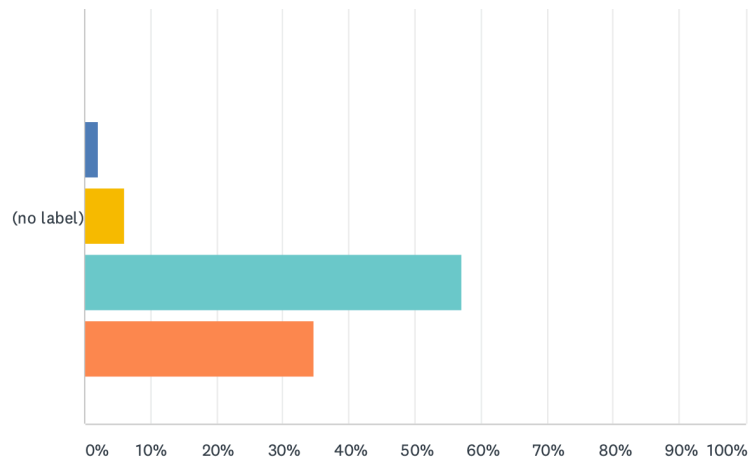


Strongly Disagree Disagree Neutral Agree Strongly Agree

	STRONGLY DISAGREE	DISAGREE	NEUTRAL	AGREE	STRONGLY AGREE	TOTAL	WEIGHTED AVERAGE
(no label)	32.65%	53.06%	8.16%	4.08%	2.04%	49	1.90
	16	26	4	2	1		

Q11 I related to things in the scenarios.

Answered: 49 Skipped: 0

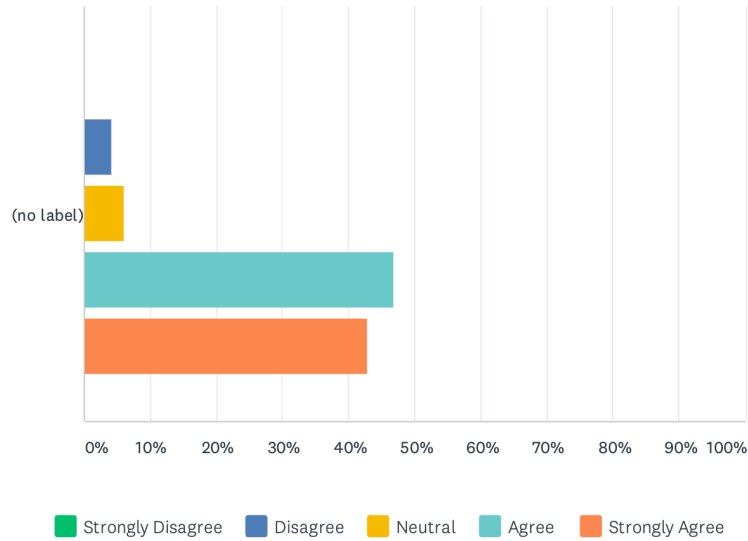


Strongly Disagree Disagree Neutral Agree Strongly Agree

	STRONGLY DISAGREE	DISAGREE	NEUTRAL	AGREE	STRONGLY AGREE	TOTAL	WEIGHTED AVERAGE
(no label)	0.00%	2.04%	6.12%	57.14%	34.69%	49	4.24
	0	1	3	28	17		

Q12 I found the scenarios to be possible.

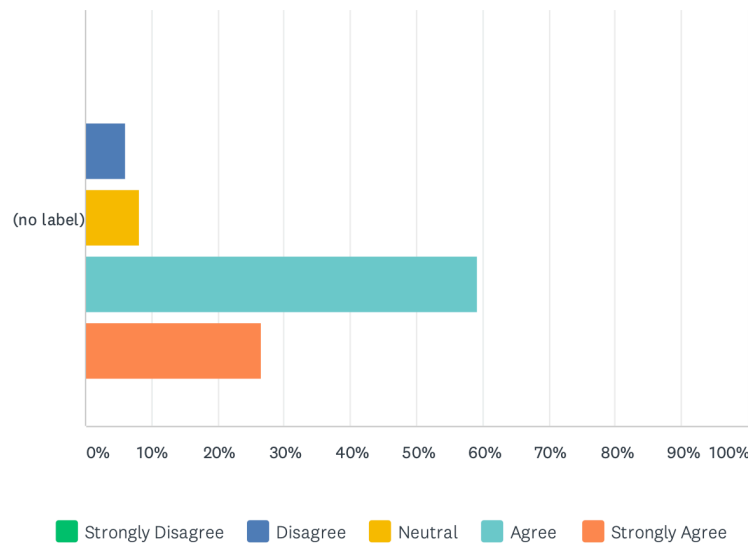
Answered: 49 Skipped: 0



	STRONGLY DISAGREE	DISAGREE	NEUTRAL	AGREE	STRONGLY AGREE	TOTAL	WEIGHTED AVERAGE
(no label)	0.00%	4.08%	6.12%	46.94%	42.86%	49	4.29
	0	2	3	23	21		

Q13 I found the scenarios to be plausible.

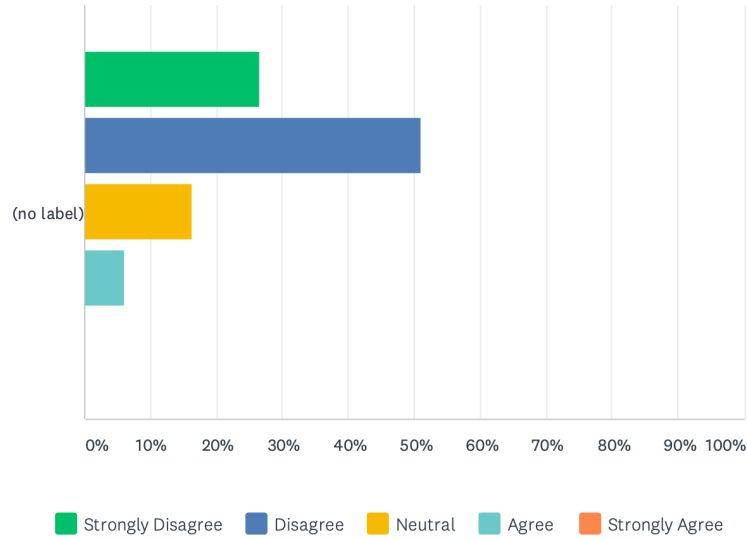
Answered: 49 Skipped: 0



	STRONGLY DISAGREE	DISAGREE	NEUTRAL	AGREE	STRONGLY AGREE	TOTAL	WEIGHTED AVERAGE
(no label)	0.00%	6.12%	8.16%	59.18%	26.53%	49	4.06
	0	3	4	29	13		

Q14 I thought they were too far-fetched.

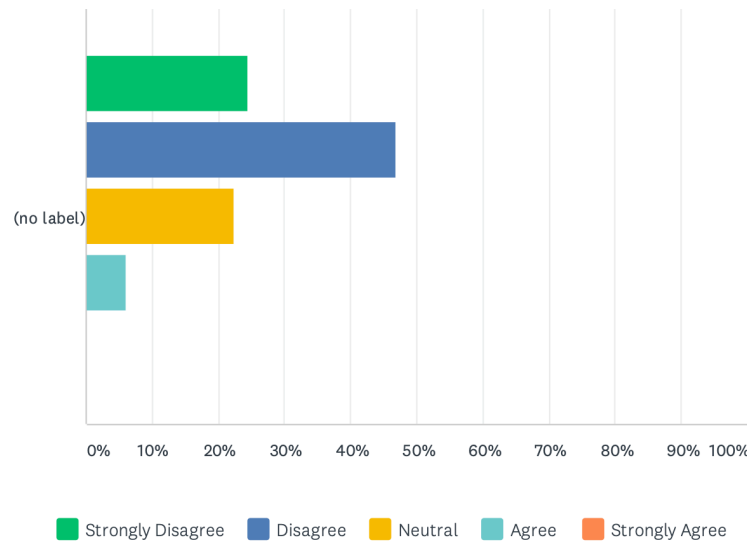
Answered: 49 Skipped: 0



	STRONGLY DISAGREE	DISAGREE	NEUTRAL	AGREE	STRONGLY AGREE	TOTAL	WEIGHTED AVERAGE
(no label)	26.53% 13	51.02% 25	16.33% 8	6.12% 3	0.00% 0	49	2.02

Q15 The scenarios are unconventional for Guyana.

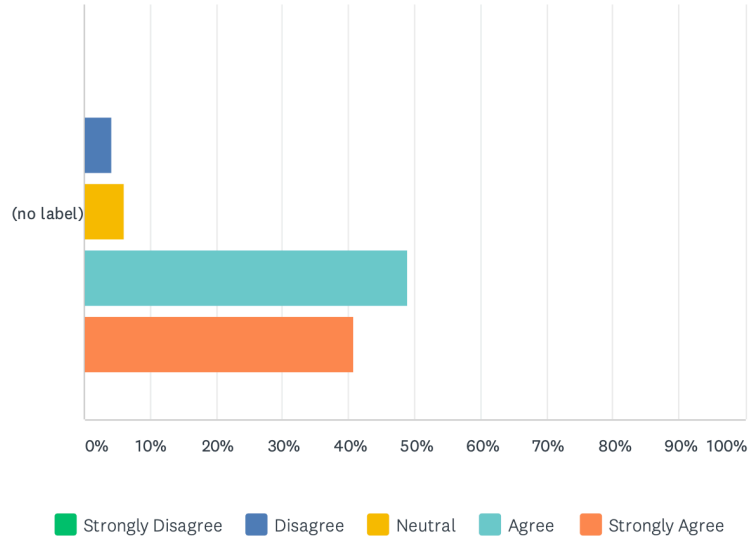
Answered: 49 Skipped: 0



	STRONGLY DISAGREE	DISAGREE	NEUTRAL	AGREE	STRONGLY AGREE	TOTAL	WEIGHTED AVERAGE
(no label)	24.49% 12	46.94% 23	22.45% 11	6.12% 3	0.00% 0	49	2.10

Q16 The scenarios got me thinking about which parts of them are actually possible.

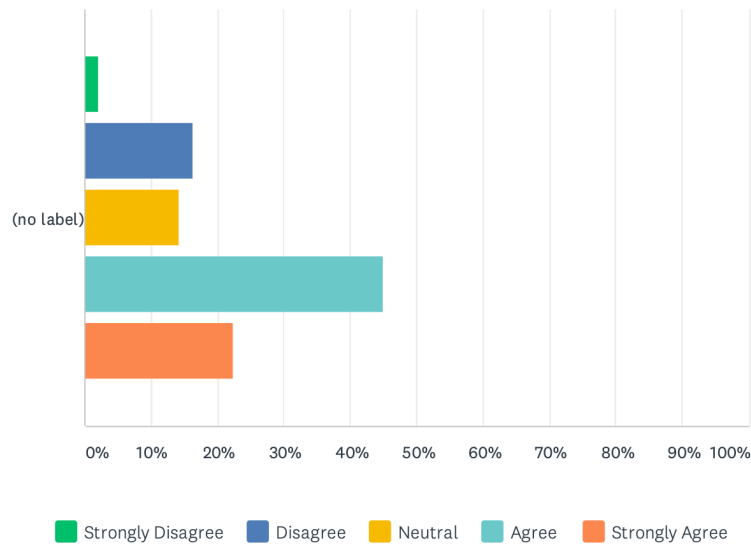
Answered: 49 Skipped: 0



	STRONGLY DISAGREE	DISAGREE	NEUTRAL	AGREE	STRONGLY AGREE	TOTAL	WEIGHTED AVERAGE
(no label)	0.00%	4.08%	6.12%	48.98%	40.82%	49	4.27
	0	2	3	24	20		

Q17 The scenarios contained new ideas that I hadn't thought of before.

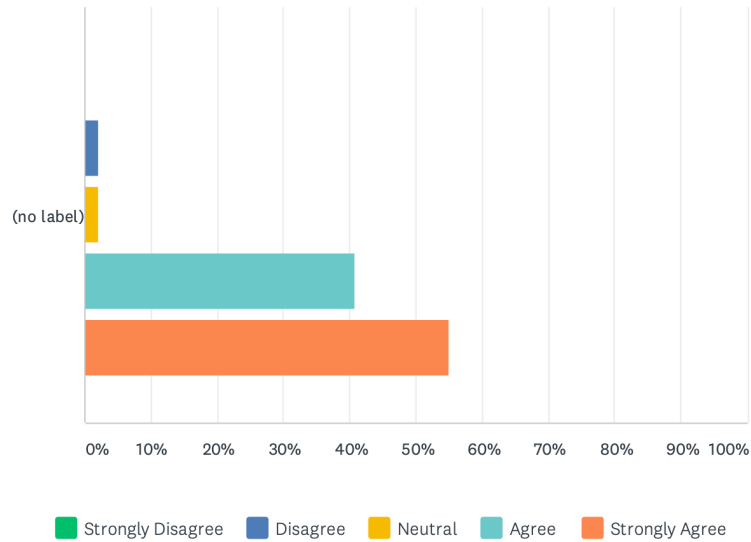
Answered: 49 Skipped: 0



	STRONGLY DISAGREE	DISAGREE	NEUTRAL	AGREE	STRONGLY AGREE	TOTAL	WEIGHTED AVERAGE
(no label)	2.04%	16.33%	14.29%	44.90%	22.45%	49	3.69
	1	8	7	22	11		

Q18 The scenarios touched on issues that I feel strongly about.

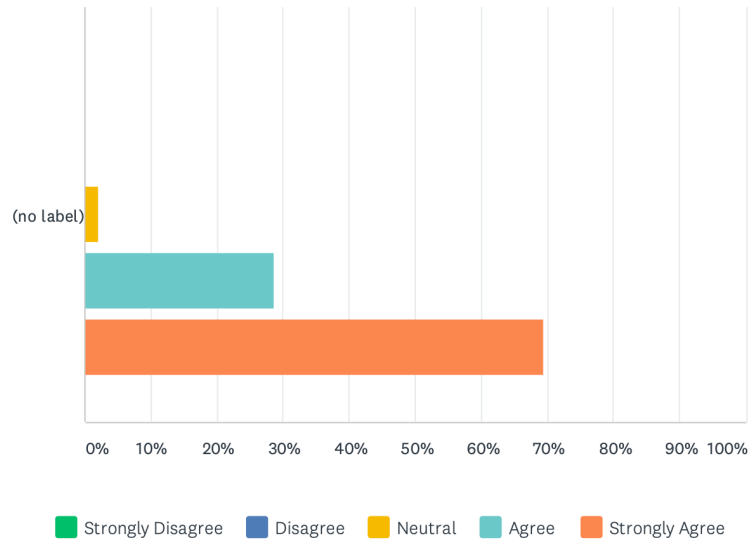
Answered: 49 Skipped: 0



	STRONGLY DISAGREE	DISAGREE	NEUTRAL	AGREE	STRONGLY AGREE	TOTAL	WEIGHTED AVERAGE
(no label)	0.00% 0	2.04% 1	2.04% 1	40.82% 20	55.10% 27	49	4.49

Q19 The scenarios touched on issues that I would like to see addressed.

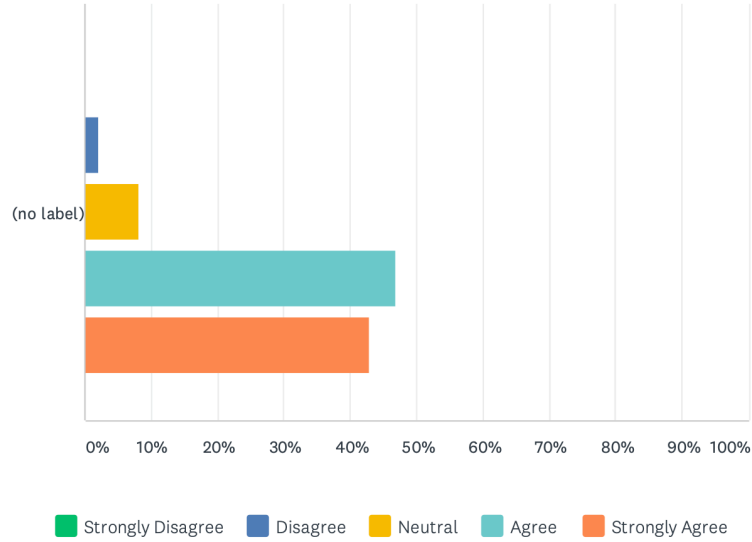
Answered: 49 Skipped: 0



	STRONGLY DISAGREE	DISAGREE	NEUTRAL	AGREE	STRONGLY AGREE	TOTAL	WEIGHTED AVERAGE
(no label)	0.00% 0	0.00% 0	2.04% 1	28.57% 14	69.39% 34	49	4.67

Q20 I can imagine what my life would be like in one (or more) of the scenarios.

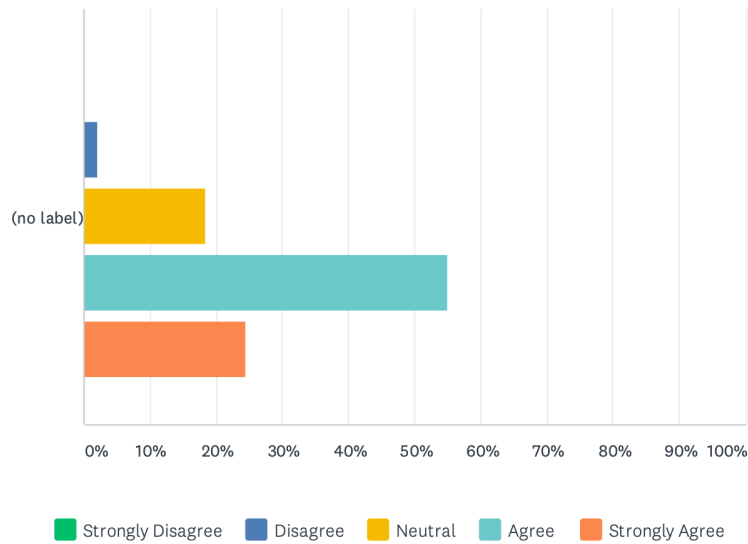
Answered: 49 Skipped: 0



	STRONGLY DISAGREE	DISAGREE	NEUTRAL	AGREE	STRONGLY AGREE	TOTAL	WEIGHTED AVERAGE
(no label)	0.00%	2.04%	8.16%	46.94%	42.86%	49	4.31
	0	1	4	23	21		

Q21 The scenarios felt familiar to me.

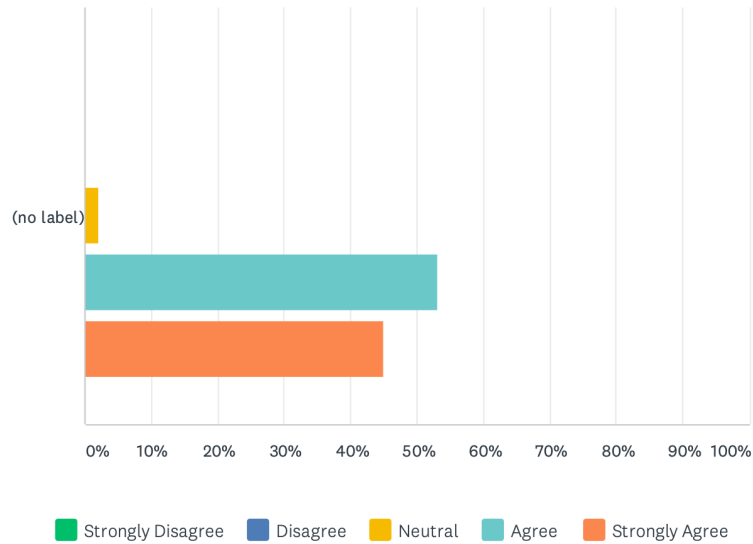
Answered: 49 Skipped: 0



	STRONGLY DISAGREE	DISAGREE	NEUTRAL	AGREE	STRONGLY AGREE	TOTAL	WEIGHTED AVERAGE
(no label)	0.00%	2.04%	18.37%	55.10%	24.49%	49	4.02
	0	1	9	27	12		

Q22 I think the scenarios are useful.

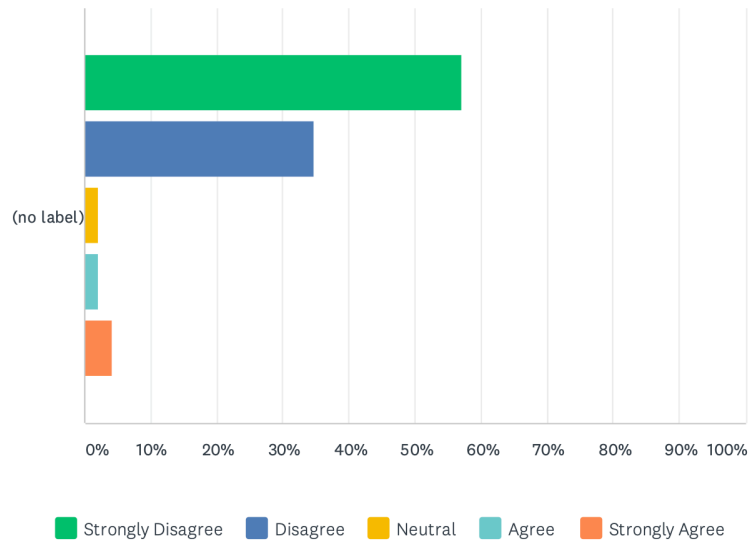
Answered: 49 Skipped: 0



	STRONGLY DISAGREE	DISAGREE	NEUTRAL	AGREE	STRONGLY AGREE	TOTAL	WEIGHTED AVERAGE
(no label)	0.00% 0	0.00% 0	2.04% 1	53.06% 26	44.90% 22	49	4.43

Q23 I didn't understand the scenarios.

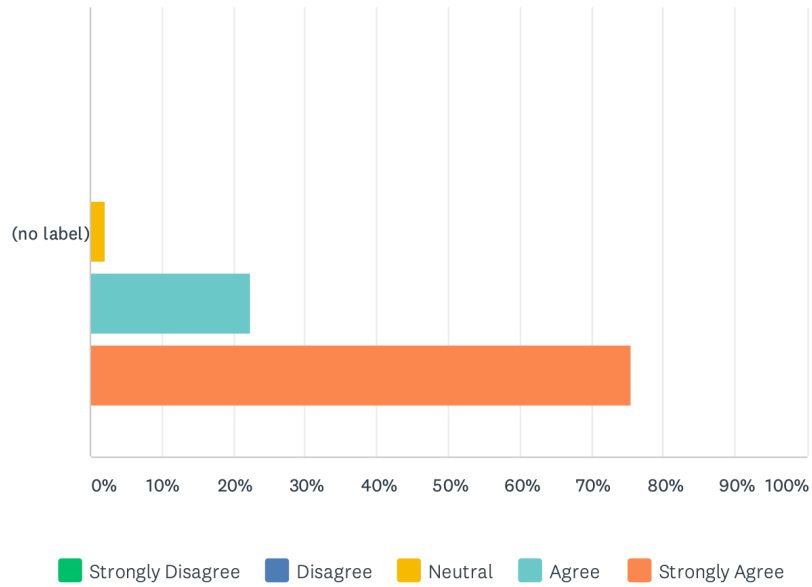
Answered: 49 Skipped: 0



	STRONGLY DISAGREE	DISAGREE	NEUTRAL	AGREE	STRONGLY AGREE	TOTAL	WEIGHTED AVERAGE
(no label)	57.14% 28	34.69% 17	2.04% 1	2.04% 1	4.08% 2	49	1.61

Q24 I think Guyanese should read the scenarios.

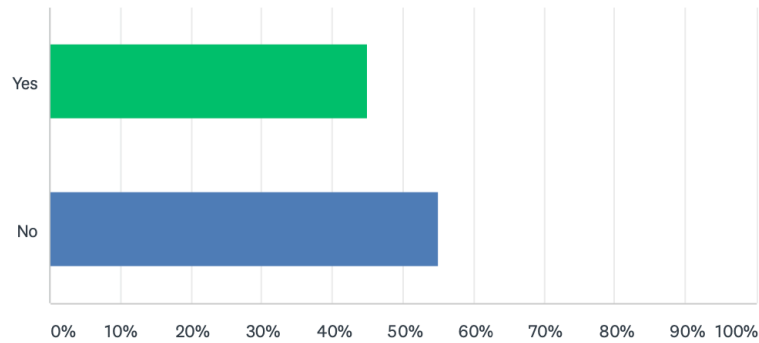
Answered: 49 Skipped: 0



	STRONGLY DISAGREE	DISAGREE	NEUTRAL	AGREE	STRONGLY AGREE	TOTAL	WEIGHTED AVERAGE
(no label)	0.00% 0	0.00% 0	2.04% 1	22.45% 11	75.51% 37	49	4.73

Q25 Have you talked about the scenarios with other people?

Answered: 49 Skipped: 0



ANSWER CHOICES	RESPONSES	
Yes	44.90%	22
No	55.10%	27
TOTAL		49

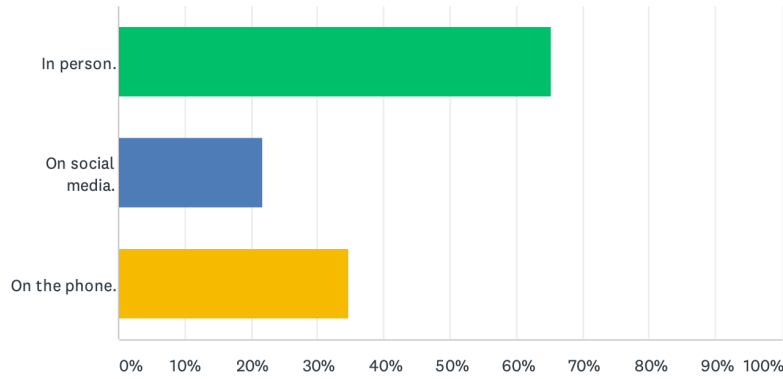
NB:

One participant responded 'No' to this question but then indicated that they had a phone conversation with someone about the scenarios in the next question. It was therefore considered an accidental mis-entry for this question. That is why in S4 the percentage of respondents who responded 'Yes' to this question is cited as 46%.

$$23/49=46\%$$

Q26 If yes, where did that/those conversation(s) take place?

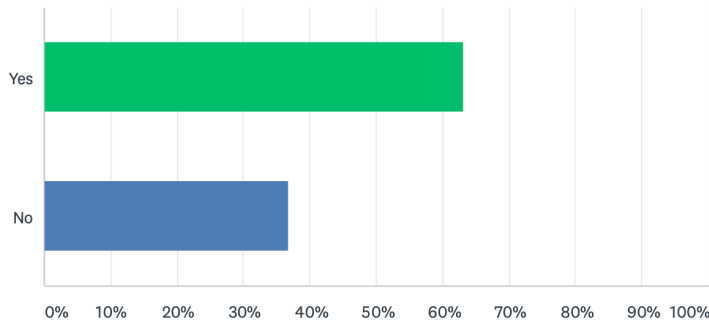
Answered: 23 Skipped: 26



ANSWER CHOICES	RESPONSES	
In person.	65.22%	15
On social media.	21.74%	5
On the phone.	34.78%	8
Total Respondents: 23		

Q27 Have you asked anyone else to read the scenarios so that you could discuss them?

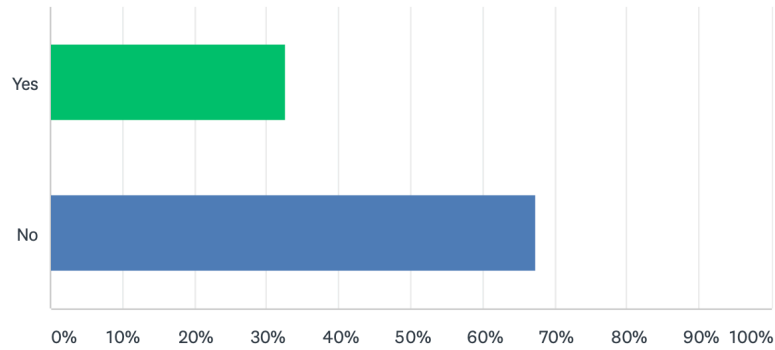
Answered: 49 Skipped: 0



ANSWER CHOICES	RESPONSES	
Yes	63.27%	31
No	36.73%	18
TOTAL		49

Q28 Have other people tried to talk to you about the scenarios?

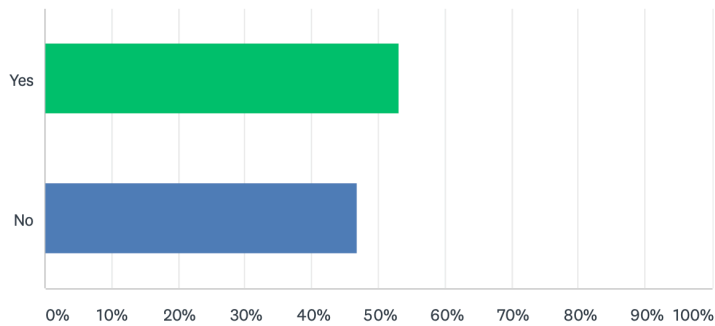
Answered: 49 Skipped: 0



ANSWER CHOICES	RESPONSES	
Yes	32.65%	16
No	67.35%	33
TOTAL		49

Q29 Have you heard other people (not including yourself) talking about the scenarios?

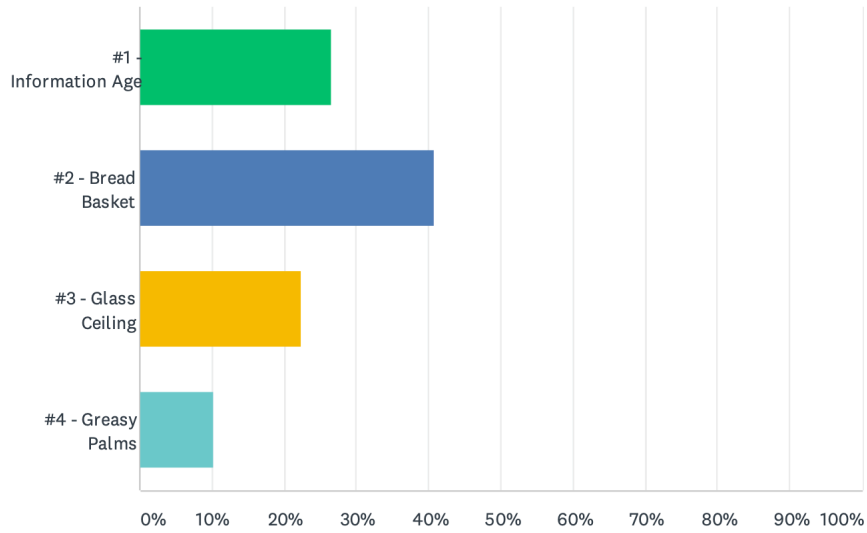
Answered: 49 Skipped: 0



ANSWER CHOICES	RESPONSES	
Yes	53.06%	26
No	46.94%	23
TOTAL		49

Q30 Which scenario was your favourite?

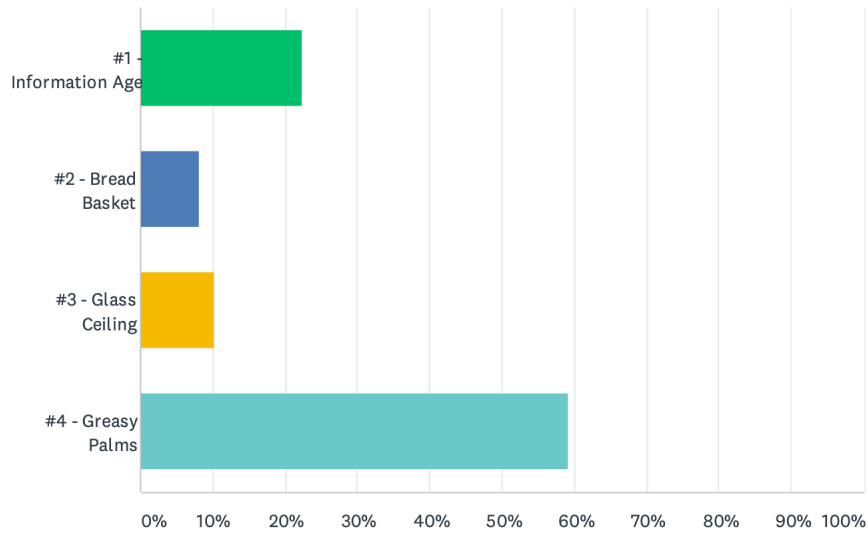
Answered: 49 Skipped: 0



ANSWER CHOICES	RESPONSES	
#1 - Information Age	26.53%	13
#2 - Bread Basket	40.82%	20
#3 - Glass Ceiling	22.45%	11
#4 - Greasy Palms	10.20%	5
TOTAL		49

Q32 Which scenario was your least favourite?

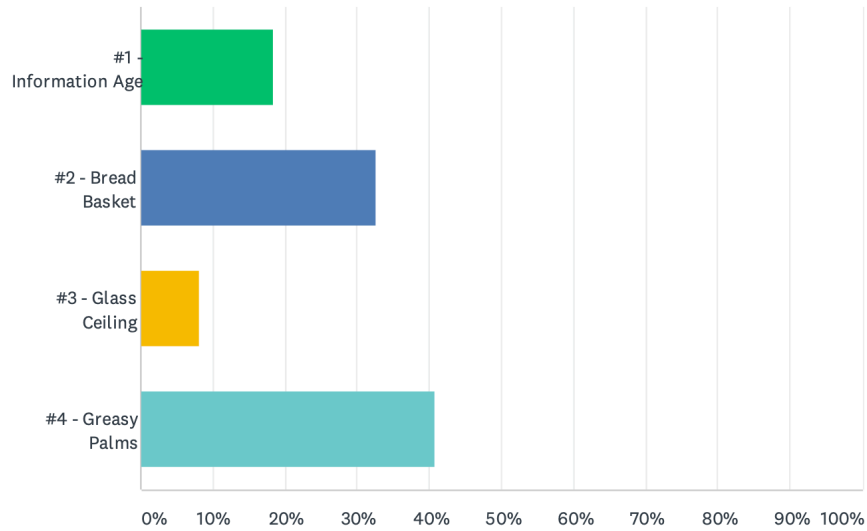
Answered: 49 Skipped: 0



ANSWER CHOICES	RESPONSES	
#1 - Information Age	22.45%	11
#2 - Bread Basket	8.16%	4
#3 - Glass Ceiling	10.20%	5
#4 - Greasy Palms	59.18%	29
TOTAL		49

Q34 Which scenario do you think is most likely?

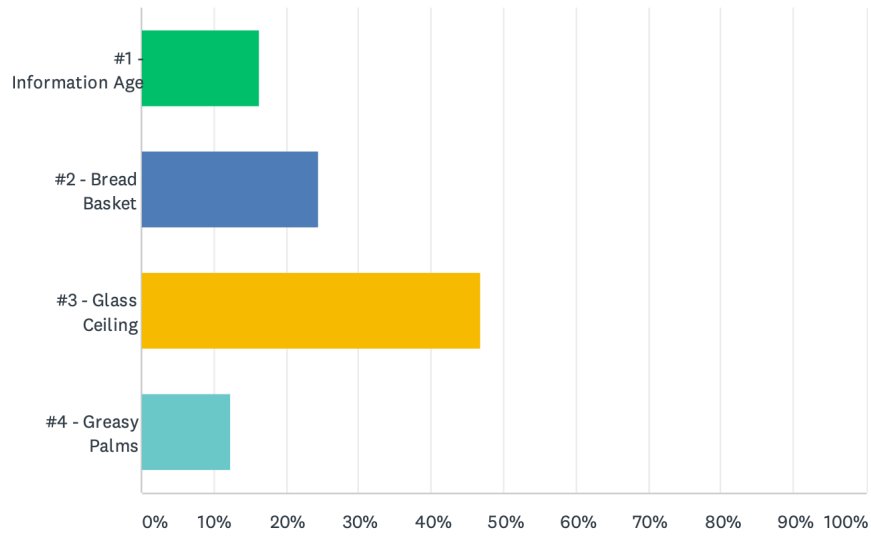
Answered: 49 Skipped: 0



ANSWER CHOICES	RESPONSES	
#1 - Information Age	18.37%	9
#2 - Bread Basket	32.65%	16
#3 - Glass Ceiling	8.16%	4
#4 - Greasy Palms	40.82%	20
TOTAL		49

Q35 Which scenario do you think is least likely?

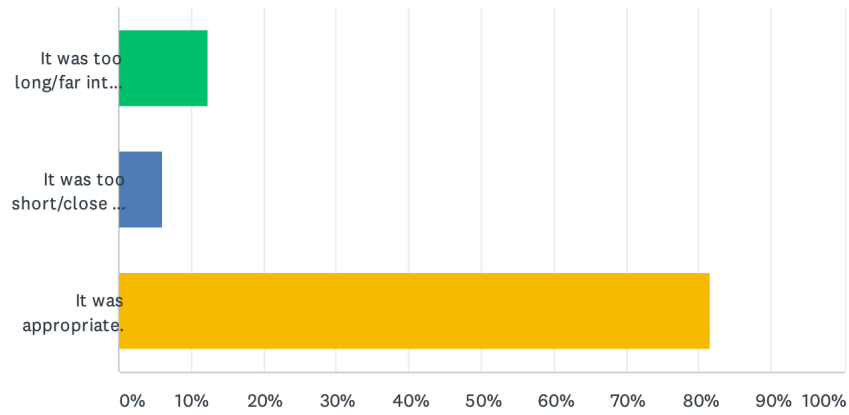
Answered: 49 Skipped: 0



ANSWER CHOICES	RESPONSES	
#1 - Information Age	16.33%	8
#2 - Bread Basket	24.49%	12
#3 - Glass Ceiling	46.94%	23
#4 - Greasy Palms	12.24%	6
TOTAL		49

Q36 What did you think of the timeline (2020 to 2050) of the scenarios?

Answered: 49 Skipped: 0



ANSWER CHOICES	RESPONSES	
It was too long/far into the future.	12.24%	6
It was too short/close to the present.	6.12%	3
It was appropriate.	81.63%	40
TOTAL		49