

Transformative Scenario Planning: Unpacking Theory and Practice

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Abstract

Objectives: Transformative Scenario Planning (TSP) is an underdeveloped approach, which is rarely applied in academic research. Based on review and synthesis, this study has been conducted to lay down a conceptual framework for TSP, so that it assists to unpack theoretical and methodological rigor of TSP. **Methods:** Deploying 'theory U', TSP is grounded in five steps: convening, observing, constructing, discovering, and acting. These steps are founded on the three building blocks—a whole system team, a strong container and a rigorous process—that produce four outputs, like understandings, relationships, intentions, and actions, which culminate in change at different levels. The conceptual framing of TSP is substantiated by the lessons of two case studies. **Results:** Findings indicate that deliberate transformation can occur through generating scenario insights and creating alternative environments. TSP is built on shared visioning, meaningful stakeholders' engagement, building strong collaboration, effective policy implementation, and encouraging gradual change. **Application:** TSP is useful for crafting adaptive and transformative policies. Empirical research and analysis is required to formulate a well-accepted theory and methodology for TSP.

Keywords: Scenario Development, Shared Visioning, Social Change, Theory U, Transformation, Transformative Policy

1. Introduction

Scenario planning has become more popular whenever life becomes more hectic and uncertain¹. It has begun to prove itself as a powerful tool for strategy and policy formulation^{2,3,4}. Adaptive^{5,6} and participatory^{7,8} scenario planning tools have been employed in a plethora of cases such as environmental management⁹, climate change adaptation¹⁰, strategic business planning¹¹, water resource management¹², adaptive natural resource management¹³, and sustainable development¹⁴, and produced useful outputs and outcomes. Scholars have said that scenario planning is closer to magic than technique¹⁵,

and in similarity with perceptions of magic, can be difficult thing to demonstrate and materialize. To do so, scenario planning essentially needs planner's power-to-perceive, power-to-think, and power-to-act¹⁶. Mapping the limitations of current practice (e.g., approaching incremental or temporary change) of scenario planning tools, literatures illustrate that these tools should be able to do better at crafting adaptive (and transformative) policies^{17,18}.

In the context of an increasingly turbulent environment, a lack of suitable response and/or approach is observed; particularly, in overcoming the current and imminent challenges like climate change and water

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Table 1. Distinctive features of participatory, adaptive and transformative scenario planning

	Assumption	Foundation	Feature	Application	Limitation and overcoming strategy
Participatory scenario planning (PSP)	Sound evidence and multiple stakeholder involvement can enable communities to be prepared by assessing the impacts of possible future events.	Devising a coordinated action plan for future visioning by building trust and recognition of stakeholders.	Planning based on collaboration and negotiation between communities and authorities.	Investments for small-scale farming in Tanzania ²⁶ , and Community resilience in Honduras ²⁷	PSP is useful like other participatory tools, which support incremental change. It suffers from stakeholders' social-psychological limitations of participation: local conflicts, gender disparities and interests of powerful groups. Empowerment participation can enhance the results of participatory scenario planning
Adaptive scenario planning (ASP)	It is not possible to neither predict the future nor influence it.	Developing stories about possible futures to study what could happen.	Deducing new systemic understandings of the future.	Global energy business ⁵ , and Climate change adaptation and scenario planning ²⁸	ASP is effective up to a point of adjustment in natural or human systems in response to actual or expected stimuli or their effects. Effective adaptive scenario planning can be achieved through shared visioning, exploiting broad-based social contrasts, and leveraging adaptive governance.
Transformative scenario planning (TSP)	Partly, it is possible to predict the future and influence what goes on around us; therefore, TSP softens the basic assumption of adaptive scenario planning.	Studying the future is insufficient, and so TSP develops stories about possible futures to influence what could happen.	Not only deducing new systemic understandings of the future but also developing sustained relationships with multistakeholders and inclusive transforming intentions.	The Mont Fleur project in South Africa ²⁴ , and the Destino Colombia ¹⁸	TSP has enormous power for transformation, but it requires investment, researcher's empirical experience and perseverance in building a strong alliance of transdisciplinary actors, building a strong container and administering a rigorous process. Moreover approaches like system thinking, resilience thinking and transition management in developing policy instruments can drive social change and transformation.

scarcity, which require a predominant focus on the development of self-triggering networks, personal values and social learning^{19,20}. Moreover, fresh understandings and innovative forms of collaboration are essential in order to face daunting challenges and seize the opportunities of emerging crises. ‘Transformation’ as a fourth potential response (after mitigation, adaptation and suffering) to global environmental change²¹ has increasingly received attention in climate change literature²². This has occurred since it has become increasingly clear that ‘business-as-usual’ reduction scenarios of greenhouse gas emissions will not be sufficient to address the unprecedented social and ecological impacts posed by climate change²³. It is difficult to find tools that provide robust strategies and navigate pathways for transformational processes and/or research like transformational adaptation. In this context, Transformative Scenario Planning (TSP) is a promising tool for better decision making by taking four issues into account: dealing with assumptions through developing detailed and careful contextual understandings; recognizing uncertainties by mapping causal relationships of important (current and imminent) variables; widening perspectives through combining a wide variety of ideas from disciplines; and resolving dilemmas and conflicts by considering a wide range of stakeholders’ views. TSP performs as a process tool, which builds on conversation, collaboration, iteration, and systematization for delving through information and ideas, accommodating diversified values and opinions, understanding the situation and context, promoting strategic and effective thinking, deducing overarching decisions and policy inputs, and fostering change^{24,25}. A deeper and more thoughtful understanding of transformative action is, therefore, an important tenet of TSP. Another distinctive feature of TSP is that it extends the boundaries of other scenario planning tools.

More specifically, TSP facilitates multiplication and spreading the scenario works and transforms the situation through transforming actors’ understandings, thoughts and actions; whereas adaptive and participatory scenario planning largely supports incremental changes.

A description of participatory, adaptive and transformative scenario planning is presented in Table 1. TSP offers an effective route to work cooperatively in order to change the future, by making a profound and subtle shift in how actors understand their surroundings; think about the dynamics of change; combine knowledge with thinking; make decisions; and strive for change. Firstly, TSP centres on developing ‘scenarios’, which are descriptions of journeys to possible futures for actors’ situation or carefully created stories about the future, but not a prediction of what the future will be. Scenarios are used for multiple purposes such as raising awareness, encouraging creative thinking, and better decision-making²⁹. The overarching aim of constructing scenarios is to generate useful policy information and catalyse the process of change through forging stakeholders’ engagement^{13,16,30}.

TSP deeply embeds the understanding that not only is it necessary to construct scenarios but also to strongly influence actors for change. Secondly, TSP builds on ‘planning’ not solely through formulation and implementation of the plan, but rather through deducing a systematic way of engaging multi-stakeholders that employ a process of systems thinking and thus simultaneously transforming actions. TSP has been applied in few cases so far, such as building the Mont Fleur Scenarios in South Africa. It has not yet been applied in academic research due to the lack of a replicable TSP method. This study has been undertaken to further build an understanding of theories and practices of TSP for transformative response/research, and to draw policy insights for implementing scenarios in various aspects, inter alia, transformation in human and natural systems. To achieve this, the study undertakes a careful review and synthesis of scenario development and implementation, and change management literature. In addition, discussion of theoretical and practical framing is substantiated by two case studies of TSP conducted in South Africa and Zimbabwe. The study findings outline a series of useful insights relevant to fostering transformational change to address current and imminent challenges.

2. Applicability of Transformative Scenario Planning (TSP)

TSP is applicable to many cases where a situation is unacceptable, unstable or unsustainable; for example, devising a plan to transform smallholder rice farming systems in South Asia toward sustainability. It is also applicable where socio-political-economic systems are embedded in complexity. Shrimp farming systems in Southeast Asia possess similar contexts. Political influence is an important driver of farming shrimp (making an financial profit) often achieved through exploiting a range of social aspects of shrimp labourers as well as degrading coastal ecosystems; and in the process this market has accrued considerable foreign currency from exporting shrimp. Moreover, TSP can be applied in exploring development interventions where the complexity of the situation might be described as a riddle wrapped up in an enigma; for instance, urban wetland land grabs in many developing countries have received less political attention owing to the interests of elite classes and political leaders⁴. TSP is suitable for unravelling the individual and collective 'blind spots'-unknown areas that impose limitations on peoples' understanding-in current thinking and decision making^{5,31}. Blind spots are areas consciously or unconsciously ignored. A person with a blind spot in a particular area may dismiss sound arguments, refute evidence and refuse to change his/her views. Blind spots are so embedded in the 'human mind' and 'institution' that they present an insurmountable block to learning^{19,12}. It is found, for instance, in leadership, specifically, Members of Parliament (MPs) in Bangladesh, have not only inadequate knowledge of climate change but also they are less politically aware of and committed to this issue³².

Moreover, blind spots in adaptation research-the issues (e.g., inequality, social conflicts, unequal power structures, and political conflicts) connected to the political economy of adaptation are rarely explored in many countries, like India³³. Adaptation planning and implementation are dysfunctional without addressing the political economy of adaptation³⁴.

3. Methodology

3.1 Theoretical Underpinning of TSP

TSP is cogitated to facilitate change and transformation. In principle, TSP acts as a 'composite social technology'¹⁹, which employs existing technologies and tools in an inclusive way, which produces new results for altering actions. TSP deploys the fundamentals of the 'theory U'-a model of social transformation¹⁹. Theory U works as a change management method intended to transform unproductive patterns of the individual and collective behaviour. It was developed of the Netherlands Pedagogical Institute in 1968. Since the early 2000s, this theory has evolved as Theory U (some proponents have termed this as the 'U' methodology, Betty Sue Flowers have incorporated the theories of Presencing and Capitalism 3.0³⁴. Theory U serves three main purposes. It acts as (1) a framework for a composite social technology; (2) a method that facilitates profound change; and (3) a way of connecting to the more authentic, higher aspects of self. This theory functions on the grounds that the most intractable problems can be addressed by cultivating individual and collective capacities, wisdom, and the right conditions (i.e., conducive policy environments). Theory U proposes that producing good results in social systems largely depends upon actors' states of awareness, knowing, attention, creativity, and consciousness. Following the three movements of the U, Scharmer³⁴ refers to this as the U process because of the 'shape' of the journey.

He states that moving down the left side of the U explores complicated and dynamic situations through observation and opening up the mind and heart; then dealing with the resistance of thoughts and emotions by retreating, reflecting and allowing inner understanding to emerge at the bottom; and moving up the right side reintegrates the ability of hand, heart and head in the context of living social systems. TSP has adopted the process of the U methodology, since U methodology is an established approach for facilitating change and transformation¹⁸. TSP has five steps: convening, observing, constructing, discovering, and acting. These steps can be framed

with five movements of the U-process to exploit the fundamentals of this process, in order to change and/or transform the complex problematic situations. These five movements are co-initiating (in TSP, this is the convening step), co-sensing (the observing and constructing steps), co-presencing (in TSP, this is discovering step), and co-creating and co-evolving (the acting step). Adapting from Scharmer¹⁹ these movements are briefly defined as:

- **Co-initiating** is equated with the convening step in TSP. Co-initiating refers to act of convening constellations of core players that co-frame problems, co-develop visions, and co-inspire common intention.

- **Co-sensing** is a collective seeing and perception of problems through observation, observation, observation; listen with your mind and heart wide open. The act of co-sensing guides the observing and constructing steps.
- **Co-presencing** refers to exploring potential future changes through retreating and reflecting, and allowing inner knowing to emerge as well as connecting to the source of stillness and/or presence. This movement leads to discovery and innovation. Presencing here blends the words 'presence' and 'sensing' and works through seeing from the deepest source.

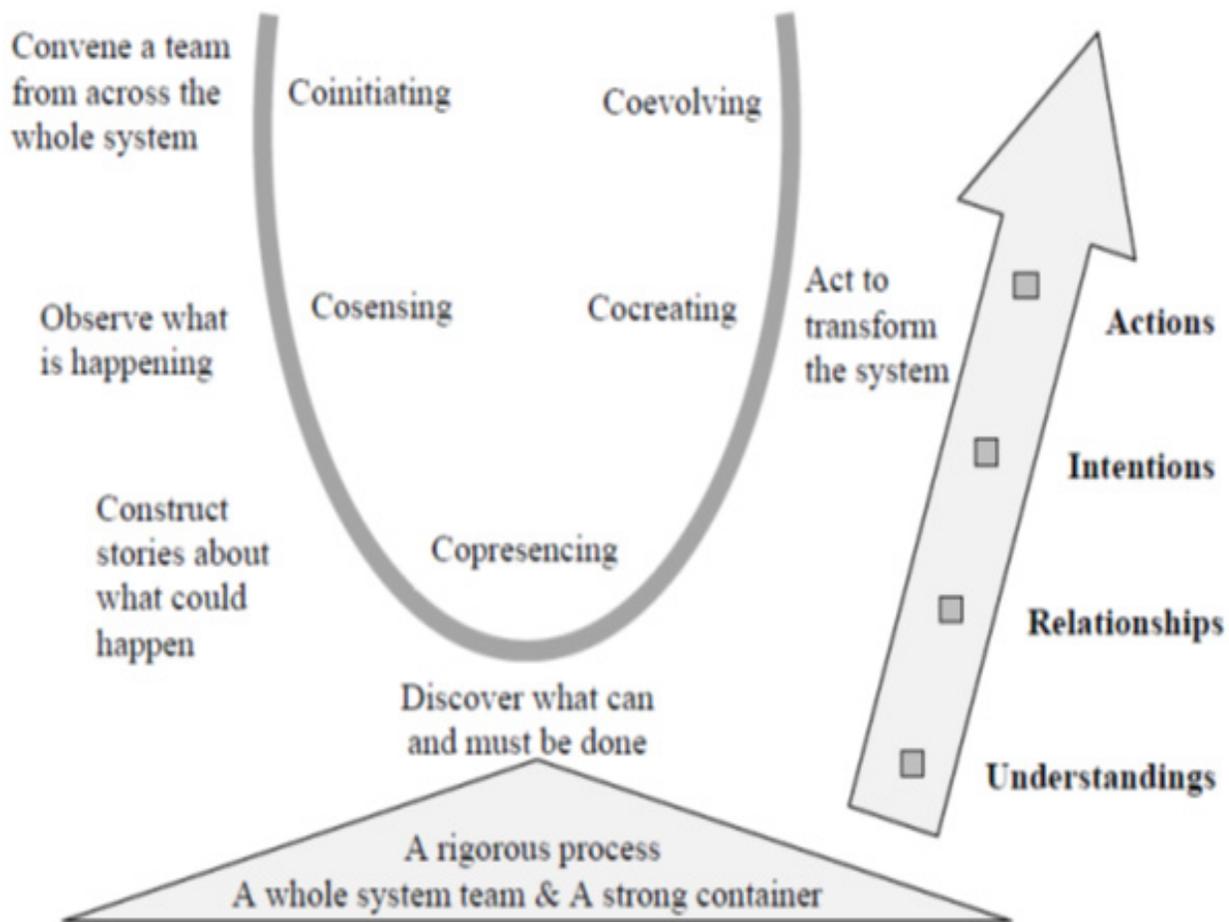


Figure 1. A theoretical framework of Transformative Scenario Planning (TSP) process. TSP builds on the five steps of the theory U, the foundational three components, and four strategies, e.g. deep understanding, through which actors transform their problematic situation.

Source: Elaborated from Kahane¹⁸ and Schamer¹⁹

- **Co-creating** refers to approaching the future by doing; developing and enacting prototypes of the future by bridging the power of the hand, heart and head. Co-creating produces results that foster acting and beginning implementation.
- **Co-evolving** refers to co-developing a dynamic innovation ecosystem that connects people across boundaries, promotes mutual learning, and allows people to see and act from the emerging whole. It mobilises stakeholders' support that will have greater leverage for the acting step in TSP.

Five steps of the TSP are founded on the three building blocks: a whole system team, a strong container and a rigorous process that produce four outputs – understandings, relationships, intentions, and actions¹⁸ – which culminate in social change (i.e., changes in perception, knowledge, behaviour, and habit) and transformation. Schematically, a theory of transformative scenario planning (TSP) is demonstrated in Figure 1.

3.2 Foundations of TSP

3.2.1 A Whole System Team

A whole system team is comprised of interested, dedicated and insightful actors from various parts of society – growers, entrepreneurs, civil society members, NGO workers, and policy makers – who are (natural) systems thinkers and who are trying to construct a better future by engaging in the co-designing, co-producing and co-disseminating of knowledge. These actors represent an 'influential unit' of the system as a whole. It is, therefore, the important task of a researcher to choose the right actors, who consider that they can act together for positive change. One of the key purposes of forming a whole system team is to stimulate 'systems thinking' – a critical approach in addressing environmental, political, social, and economic challenges faced by the world³⁵. This is since, thinking in systems transcends disciplines and cultures, and helps us to manage, adapt, and see the wide range of choices we have before us.

3.2.2 A Strong Container

An essential component of TSP is building 'a strong container' within which actors can nurture a strong collaboration to transform their understandings, relationships, intentions, and actions. A typical container is marked by the boundaries of activities, definition of capacities, and limits of actor's protection. Working under the auspices of a strong container, the scenario teams feels safe and secure in organising meetings and getting access to the public documents, and offices to connect diverse actors, gather data, conduct research, and disseminate information. Paying due attention to multiple dimensions of the space within which a team does their work is required for building such a container, as well as charging the container. Working in close collaboration with the government and private organisations (including NGOs) is a useful strategy for creating a strengthened container. A strong container has good relationships with good content (cutting-edge research) of the study, since a well desired research issue should receive good support from decision-makers⁴. Moreover, developing a strong team of experts/leaders is itself a vital factor for building a strong container for several reasons; for instance, their individual, collective and organisational influences leverage strong advocacy communication and media coverage. A strong container is a sine qua non to effective policy implementation².

3.2.3 A Rigorous Process

TSP is an assemblage of the application of approaches; for instance, determining a convening team to conduct community meetings. Ensuring a rigorous process requires a wise application of methods/approaches, namely, convening, observing and discovering. To focus on making changes in 'the system' or on 'implementing' a predetermined 'change process,' TSP process has to be solution-driven, intuitive, and inspirational in a way that supports building shared perception and creating a deep understanding of the system, as well as minimising the complexity and potential for conflict^{18,11}.

3.3 Key Steps of TSP

3.3.1 Convening

- Preparing a succinct outline of the project, clarifying the goals, objectives, focuses, participants, timeline, and budget to enlist multi-stakeholders⁶;
- Forming a convening (5 experts) and scenario team (50 thinkers and practitioners of the respective fields), as well as selecting 200 informants including local growers, leaders, women, NGO workers, and others who are directly affected by problems arising from say climate change, i.e., sea level rise;
- Getting appointments of scenario team members and arranging initiatives for organising community meetings, e.g., preparing community facilitators;
- Mapping and determining an initial list of blind spots by reviewing and analysing policy papers and strategy documents⁵.

3.3.2 Observing

- Conducting informal interviews with the informants of the study area;
- Building up a rough shared understanding of what is happening in the system and sharing it with actors;
- Conducting dialogue interviews¹⁹ with the scenario team members;
- Organising a number of community meetings at sub-district level. These meetings have to be supplemented by learning programmes to undertake systemic study of the past, present, and future;

- Preparing issue-, keywords- and theme-based summary documents;
- Determining structural driving forces (and variables), certainties and uncertainties¹¹;
- Corroborating the list of blind spots through informant and dialogue interviews, and finalising blind spots and preparing a report on blind spots.

3.3.3 Constructing

- Analysing qualitative data (i.e., editing, coding and summarising) and determining key issues, certainties and uncertainties;
- Constructing scenarios deductively, i.e., developing four scenarios (2 x 2 quadrant) from two key uncertainties, or inductively – a creative approach that employs a form of the intuitive logics for scenario development¹⁶;
- Presenting logical narratives, i.e., what happens, why, and how of hypothetical future events;
- Drawing metaphors (e.g., logic trees), evocative images and naming of scenarios;
- Creating pictures or art expressions that compare and contrast the scenarios;
- Presenting scenarios to the team members and actors.

3.3.4 Discovering

- Taking an adaptive and transformative stance based on the perspectives of the study content¹⁸;
- Conducting a strengths, weaknesses, opportunities, and threats (SWOT) analysis of each scenario¹¹;
- Deducing concrete options by exploring the meaning of the scenarios;

- Drawing conclusions and policy implications about what the scenarios will address.

3.3.5 Acting

- Disseminating the scenarios using print, electronic, and social media as well as using cultural agents and local government and NGOs³⁶;
- Organising community meetings as well as holding individual and organisational meetings for dissemination and actions;
- Cultivating and coordinating networks of trans-disciplinary team members to leverage gradual transformational change.

3.4 Transforming Strategies of TSP

TSP process alters actors' awareness, understanding, relationships, thinking, intentions, and practices to transform their problematic situations¹⁸. First, they transform their 'understandings' through which actors become aware, impart knowledge, and decide what they should do, or at least what they should try to do in response to a changing/changed situation (Figure 1). The scenarios demonstrate well elaborated narratives of possible future, i.e., what is happening and what could happen in the larger social system. Individual and collective learning, information sharing, and consciousness open a new window of understanding and judging their situation³⁷. In a problematic situation such fresh understandings enable forward movement. Second, actors strengthen fair and trustworthy 'relationships' through working in close collaboration with scenario team members, experts, and other stakeholders. Joint thinking, actions, and reflection enlarge their spirit of cooperation and trust in other actors and, more importantly, improve mental ability, capacity, and willingness to work together for societal change³⁷.

Building networked relationships of production, power and exposure are a crucial outcome of TSP. Third, actors' transformed understandings and relationships shift in seeing (what actions could be taken for building a

better future?), exploring (what is happening and why?), understanding (where are we heading?), and approaching problematic situations (what we must do to alter a changing/changed situation). This collective synthesis of improved understandings and relationships inspire common 'intentions' and change their fundamental will¹⁹. And fourth, transformation in understandings, relationships and intentions espouse actors' intention to transform their 'actions' (Figure 1). Change efforts occur when placing emphasis on making changes in 'the system' or in 'them' or on implementing a predetermined 'change process'; rarely on how 'I' and 'we' must alter to deal with an unexpected situation^{29,30}.

4. Practical Aspects of Transformative Scenario Planning

4.1 Data Collection

Scenario planning builds on a comprehensive understanding of human activities, institutions, policy instruments, and other drivers of change. Several instruments are required to undertake data gathering, as well as gaining a broad exposure of the human and natural systems. Three instruments can be primarily applied for data collection, besides reviewing policies, strategy documents and annual reports of government and private organisations (e.g. NGOs). Brief information on instruments, including the suitability of these instruments, their purpose, sampling approach and informants is presented in Table 2. Scholars found that the two day workshops are not enough for tapping into deeper information; rather considering workshops as a form of group interviewing can provide more useful information for scenario development²⁹.

To collect data from the top decision-makers/experts such as the Environment Minister, Secretary of Agriculture, and Country Director of the Food and Agriculture Organisation (FAO), this study adopts dialogue interview – a data gathering tool that engages the interviewee in a reflective and generative conversation^{19,38}.

Table 2. Data collection instruments and informants

Instruments	Suitability	Purpose	Key issue	Sampling technique	Informants
Informal interview	At the early stages of the study	Understanding social settings of the study area	Building 'rapport' with informants and in gaining their 'trust' and information	Random-walking method	Local stakeholders
Dialogue interview ¹⁹	Minimising social and personal fragmentations	Conducting a cross-cultural, cross-sectorial, and cross-generational dialogue and actions	Paying attention to the 'contents', but also to the 'processes': deep listening and suspending voice of judgment	Snowball sampling method	Experts and practitioners
Community meeting	Strengthening community involvement in development	Creating community awareness, bringing together a cross-section of viewpoints	Avoiding 'elite biases' and take careful consideration for under-representing data from the 'less heard'	Deliberate approach	Community members

So far as experience goes most of the top decision-makers and other high rank personnel were less interested to contribute by participating workshops, justifying this through reference to their busy work schedules. Attending workshops involves following procedural activities that consumes time, which discourages these persons from participating in workshops. However, in a dialogue interview setting, it becomes possible to collect data from these high profile persons and executives through accommodating a time and place convenient to them.

4.2 Data Analysis

4.2.1 Editing

Data editing is done at different stages of data collection to detect and correct errors in the information given by the informants. Some time needed to be given immediately after each informal interview to review and edit information and to carefully highlight the answers to a range of questions, such as: what struck the interviewer most,

what surprised him/her, what touched him/her, and was there anything that he/she needs to follow-up on?

4.2.2 Coding and Classifying

Coding builds on keywords, ideas, topics, themes, concepts, terms, and phrases found in data, e.g., interview transcripts and meeting minutes. One of the ways to code data is to create a storyline – a narrative of possible futures – that: (1) determines what important concepts and themes are required to consider in assessment; (2) provides hints about how data should be arranged and/or assembled and coded; and (3) gives essential structure for the coding scheme. Coding can be created in two ways: open and pre-set (a priori) codes. It is better to use a hybrid approach, using both these coding procedures. An initial list of pre-set codes can be prepared (e.g., resilience and poverty), which are derived from the objectives, research questions and problem areas. After data collection, a final list of codes has to be prepared – this is often referred to as a ‘code book’. Besides pre-set codes, ‘emergent codes’ emerge from reviewing, synthesising and analysing the data. For refining codes, keeping coding notes, illustrating coding and marginal remarks, and handling other pertinent issues of coding, this study follows the procedures highlighted in *Coding Manual*³⁹.

4.2.3 Analysing and Interpreting

Qualitative data analysis is mainly a process of looking at and summarizing data with the intent to extract useful information and draw conclusions. Specifically, this analysis can be done by examining, categorising, comparing, and synthesising the mass of raw materials.

To reduce the amount of data for analysis and interpretation, one key way of processing the data is to write summaries of what informants have said. A number of summaries can be produced, for example, villages-based interview summaries. In the same way, theme- and concept-based summaries can be presented in tables, modes (most frequently occurring) and graphs (bar and pie charts). Moreover, as an ‘aid’ in the analysis, this study can use NVivo – a Computer Assisted Qualitative Data

Analysis Software (CAQDAS) – to explore data, create codes, retrieve codes’ functionality, deduce outputs, and, above all, to manage the analytical process^{40,41}. After analysing data – i.e., preparing summaries and stories – scenarios are constructed (see steps of TSP) employing inductive and deductive methods^{16,5,19,6,18}. Interpretations of scenarios are a crucial part of scenario development and implementation. A succinct interpretation is then required through using an array of means of communication and demonstration, such as drawing images, schematic presentation, writing a summary report, organising seminars, and showing video clips.

5. Practices of Transformation Scenario Planning: Two Case Studies

5.1 Case 1: The Mont Fleur Scenarios, South Africa (Inductive Method)

In the midst of deep conflicts over power, politics and racial segregation (i.e., the apartheid system), the Mont Fleur scenario exercise was undertaken in 1991-92 to think creatively about the future of South Africa. The objective of conducting the Mont Fleur scenario exercise was ‘not to present a definitive picture, but to stimulate debate on how to shape South African’s socio-political-economic condition in the next 10 years’²⁴. To construct scenarios, the Mont Fleur scenario project brought together a transdisciplinary team of 22 insightful and influential South Africans: academicians, businessmen, politicians and activists, and recruited an expert at scenario planning of Shell International, London – to serve as a facilitator. The scenario team met three times in a series of three-day workshops, where team members were requested to talk about what they predicted will happen or what they believe should happen, but not only about what they think could happen. The scenario exercise initially came up with 30 stories of possible futures for South Africa. After considering several possible stories, the scenario team members inductively constructed four

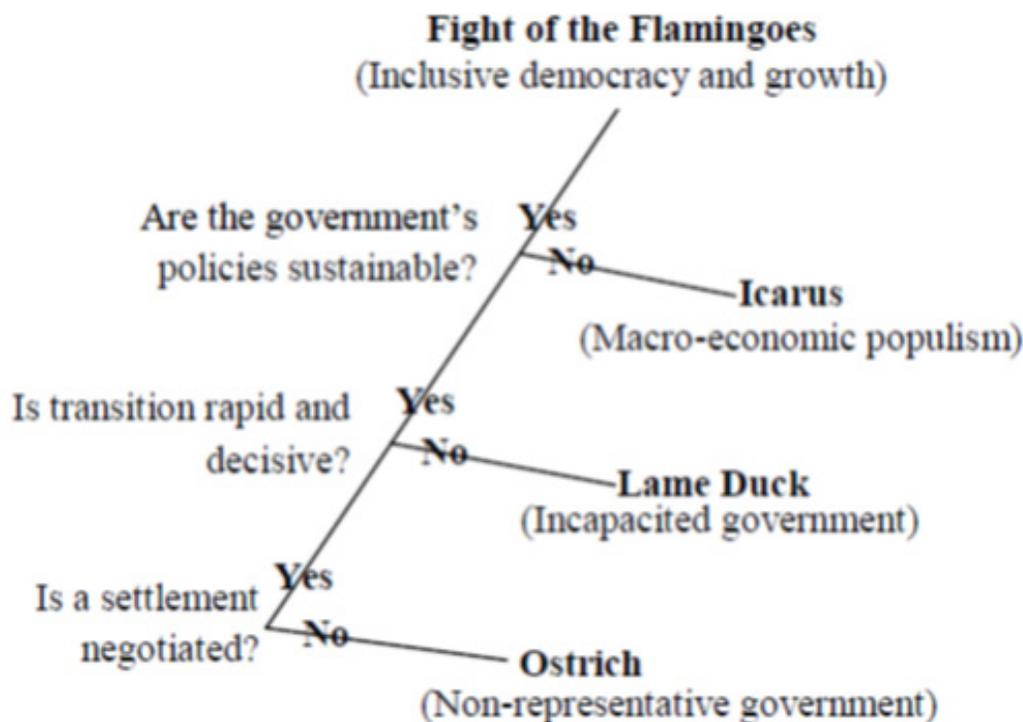


Figure 2. The Mont Fleur scenarios (1991-92), South Africa Source: Le Roux and Maphai. Source: Le Roux and Maphai²⁴

scenarios (Figure 2) based mainly on two merits—plausibility and relevancy—of the stories.

5.1.1 Discussion of the Results

Key outcomes of the Mont Fleur scenarios were a changed way of thinking, problem framing, building informal networking, and drawing explicit development interventions²⁴. These outcomes resulted in ‘surprisingly’ significant impacts, such as influencing the thinking of the public, driving the wheel of transition to democracy, and changing the thinking of the leaders around the development of its economic policy^{18,42}.

The first scenario, Ostrich, was a story of the white minority government that refused to negotiate with its opponents. Like the Ostrich (i.e., a very large bird), this government stuck its head in the sand and did not want to face realities. It depicted a non-negotiated government occupied, leader of the National Party that worsened the crisis by perpetuating repression, negative business cli-

mate, economic stagnation, and with no social delivery. This scenario pinpointed an urgent need for an inclusive political settlement in order to foster economic take off. Otherwise, a totalitarian regime of the National Party that incapacitated the democratic government led to the Lame Duck (2nd scenario).

The ‘Lame Duck’ narrates a story of a negotiated settlement (i.e., weak coalition) that constitutionally weakened the government and left it unable to deal with the country’s challenges. The second scenario, Lame Duck, presents an image of a bird with a broken wing, so it cannot get off the ground, and thus has an uncertain future. This scenario envisages a long transition that results in indecisive policies that purport to respond to all, but satisfy none because of uncertainties in investment, insufficient growth and ever increasing social crisis. A formal and protracted transition creates a vicious cycle of political, social and economic crises were the main characteristics of the Lame Duck scenario. The third scenario

'Icarus' illustrates the dangers of macro-economic populism. Populist economics usually leads to a short-term boom but a long-term economic bust^{24,43}. According to Greek mythology, 'Icarus' was a young man who enjoyed the freedom of flight and flew higher and higher. When he arrived too close to the Sun, the wax which his father had used to glue each of his wings melted, and he plummeted to his death into Aegean Sea²⁴. Icarus scenario presents a story of popularly elected democratic government which tries to achieve rapid transition, ignoring fiscal limits, and crashed the economy. Although this government had good intentions it unwisely pursued unsustainable, populist economic policies (e.g., massive social spending spree) which results in economic and social collapse and political chaos.

To manage capacity constraints and imbalances, the democratic government consequently embraced some form of authoritarian rule. Leading economist Nick Segal summarised the warning of 'Icarus' around the danger of macro-economic populism in elsewhere (see Segal⁴⁴). The fourth scenario is all about inclusive democracy and

growth. 'Flight of the Flamingos' was a story of a society that put the building blocks in place to develop gradually and cooperatively²⁴. Key strategies for development include a decisive political settlement, good governance, and creating a conducive environment for slow but sustainable social and economic take-off. In the face of uncertainty and turbulence, this scenario painted a credible and optimistic image of hope for South Africa. 'Flight of the Flamingos' captured a well-elaborated way forward for transformative economic growth, including its necessary conditions, options, opportunities, and challenges for South Africa.

5.2 Case 2: The Great Zimbabwe Scenarios (Deductive Method)

Zimbabwe had swallowed violence, and stagnation due to an extremely problematic economical, political and social situation. In 2010, a group of six Zimbabwean leaders administered the Great Zimbabwe Scenarios Project to influence a democratic and prosperous future for Zimbabwe²⁵. This scenarios project yielded four possible

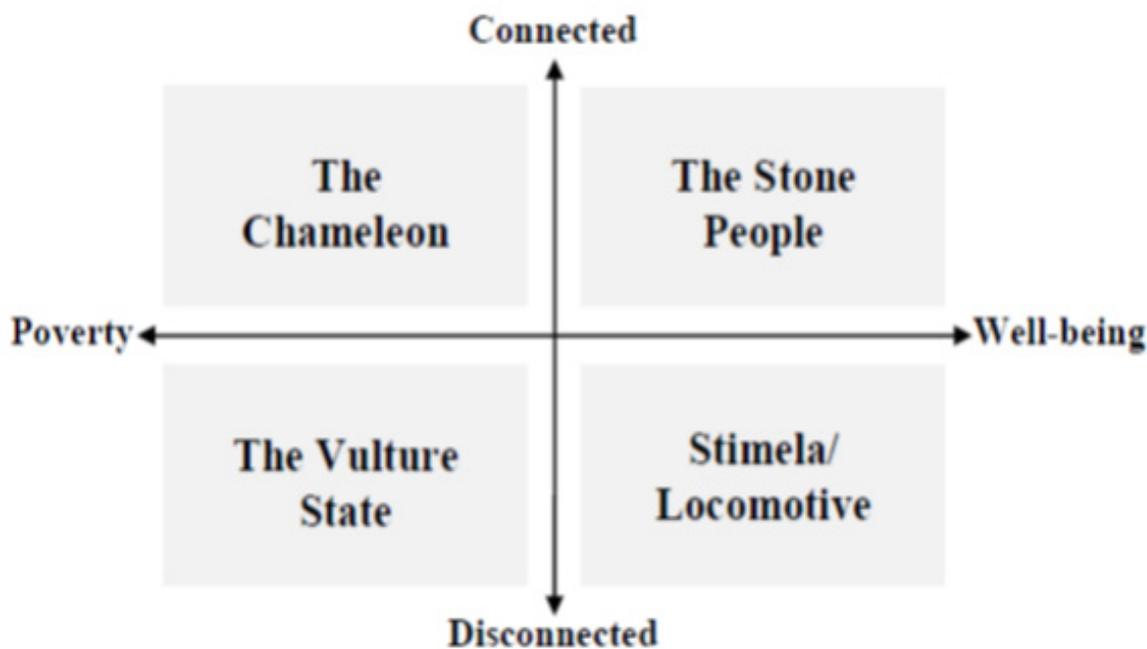


Figure 3. The great Zimbabwe Scenarios (2010-12) Source: Mharidzo-Ndoro. Source: Mharidzo-Ndoro²⁵

futures—the Stone People, Stimela, The Vulture State, and The Chameleon (Figure 3). This process includes three phases. The first phase appoints convenors and recruits the secretariat of this project. The second phase constructs the four scenarios through mainly appointing 69 sectorial leaders, conducting 38 in-depth interviews, and administering three workshops. In the third phase, a series of dialogue meetings were organised with multi-stakeholders including academics, politicians, business community, civil society, young people, and women entrepreneurs. To transform the socio-economic condition of Zimbabwe, the scenario exercise deductively (i.e., a straightforward approach for developing four scenarios by determining two key uncertainties) produced four possible stories (Figure 3) that incorporate the metaphor of each scenario and explore the risks and opportunities posed by each scenario.

5.2.1 Discussion of the Results

‘The Stone People’ scenario depicts a story of a government that is responsive to the needs of the citizens. It historically shapes the national fabric through: properly addressing socio-economic and political concerns; promoting inclusive governance where people’s broad participation is expected to be achieved for needs assessment and priority setting; and the efficient and effective exploitation of resources, as well as providing goods and services. Moreover, this scenario guarantees freedoms and rights for all irrespective of colour, creed, gender, age, political affiliation, and religious beliefs. Furthermore, the Stone People seeks to work towards the full engagement of the international community to ensure investor confidence and financial support. This scenario faces minimum challenges, as it engages peoples to develop a shared vision. The Stone People presents a desirable future for the Zimbabweans.

The ‘Stimela’ (the Ndebele word for “locomotive”) scenario illustrates a leadership that provides a viable development vision, facilitates a conducive growth environment (i.e., maintaining regional stability), and implements this vision according to an agreed-upon development plan. The Stone People is connected with the

Stimela scenario in the sense of short-term development of socio-economic condition, institutional scaffoldings and leadership. The development of the Stimela would be a national stabilising phase for political, economic and social sectors, and this phase is expected to take 10 years before the realisation of the Stone People. To progressively utilise its natural resources, Zimbabwe needs to first adopt the ‘Stimela’ scenario.

The locomotive is a critical mode of transport that follows a route that is well known and defined, but less capable to manage new situations, which a challenge of this scenario is. A directed approach to development may create a kind of leader that does not have supporters/people, which is another challenge of this scenario. ‘The Vulture State’ articulates a government that is loosely connected with the people. This government exploits public institutions (and organisations) for fulfilling desire of certain groups and purposes. This scenario assumes that the country is governed to some extent following the characteristics of the vulture. For instance, vultures have a knack for identifying weak prey and they have no qualms about eating their prey alive. Key challenges of this scenario include a leader’s firm wishes for national development, detached from their personal economic interests.

‘The Chameleon’ describes a coalition government that struggles to move the nation forward, but the pace of development remains very slow, as politicians remain politically connected to their own partisan and ideological policy positions that perpetuate economic recession, social crises and regional conflicts. The main challenge is the lack of an inclusive system of governance in order to create development pathways that efficiently and effectively manage diversity to build one nation.

6. How TSP Facilitates Transformation

6.1 Developing a Shared Vision

A clearly articulated vision of (sustainable) development is an important outcome of TSP. A vision means a moving target or a tangible image of the future that cannot be

defined exactly in terms of setting or of achieving specific goals⁴. TSP procedurally assumes that the best way to lead people into the future is to connect with them deeply in the present and create shared visions through listening very, very closely to others, appreciating their hopes, and attending to their needs. TSP process is participatory and iterative; involving a joint problem framing, assessment and reassessment, and evaluation and learning. Findings of the case studies indicate that creating a shared vision was the centre of constructing scenarios. The Mont Fleur scenarios, for instance, began to flourish with a vision of attaining a 'decisive political settlement' for socio-economic development within the next 10 years²⁴.

The Great Zimbabwe scenarios team created a shared vision by exploring the country's uncertainties (including surprise, critical thresholds, and abrupt change) and certainties about the future and this vision of the future influenced contemporary decisions. Visioning, in Zimbabwe, not only created mass awareness, emotion and imagination with the intention of bringing new inclusive governance systems into being, but also provided resources, built capacity and created conducive policy environment for fostering sustainable development²⁵.

6.2 Engaging Stakeholders in the Co-design, Co-production and Co-dissemination of Knowledge

Multi-stakeholder engagement is crucial to (transformative) scenario planning. The active involvement of civil society, policy-makers, science communities, and businesspeople is required in creating a shared and/or cohesive vision, framing problems jointly, generating solutions-oriented knowledge, creating mass awareness, experimenting with solutions, developing networks of mutual learning, and leveraging collective action for implementation. Stakeholders actively engage with the five steps of the TSP and their inputs form the basis of generating and implementing scenarios. Stakeholders' involvement transforms (1) their understandings on what are happening and what could happen around the surrounded systems; (2) their relationships with other stakeholders/actors, which build their trust and confi-

dence for working together; and (3) their intentions and actions to embrace the new situation. The Mont Fleur scenario exercise was innovative and historical, because in the midst of a deep conflict – the apartheid system of racial segregation – it created an avenue and brought people from organisations in order to think creatively (and collectively) about the future of their country. This scenario exercise set up several forums (for instance, formal, informal, public negotiations, and off-the-record workshops) that gathered together the broadest possible range of stakeholders to develop knowledge, understandings, and a new way forward for a political settlement for democracy and growth. Proponents reported that public engagement in the co-design, co-production and co-dissemination of knowledge was a principal factor of the peaceful transition from a system of apartheid to stable multiracial government in South Africa.

6.3 Moving Forward through (a need for) Collaboration

TSP is a real world problem-focused tool. It can be applied when existing socio-economic-political systems are incapable of keeping with the pace of development. To transform complex and locked-in situations, TSP contributes to building various forms of collaboration between people enmeshed in these problematic situations. TSP is an effective process of engaging a range of actors to create careful stories about the future, and establishing stakeholder's networks of disseminating knowledge, improving social learning and building collaboration for the processes of transformative change – a change in the fundamental attributes of human and natural systems (IPCC 2014). Cases studies indicate that transformative changes were driven by social learning, empowerment participation, institutional stewardship, and collaboration within and across groups, organisations and institutions²¹. Scenario planning literature^{16,45} documented various forms of collaboration – partnerships, coalitions, alliances, and networks – that contribute to forge grassroots movements, prevent conflicts, enhance environmental policy integration into the wider development agenda,

and provides more flexible and transformative decision-making environment.

6.4 Improving Effective Policy Implementation

A notable distinction of TSP is that it not only constructs scenarios but also develops a road map towards achieving scenarios and a systematic process of involving stakeholders for its effective implementation. TSP process facilitates scenarios implementation effectively in a range of ways. First, scenarios are developed around the notion of a shared vision, which is created in close collaboration with stakeholders, including civil societies, laymen, businessmen, academicians and others. Scenarios, consequently, address the pressing issue of stakeholders, reflect their own aspirations, and stay close to the implementers. Second, stakeholders' engagement, one the one hand, contributes to knowledge generation and dissemination, but on the other hand transforms their understandings of the situation, relationships between local actors and outsiders, intentions of working together and spirits of collective action. Thus, implementation activities achieve the right capability and are aware of, and ready to respond to, the wider system of socioeconomic development. And third, the TSP process fosters collaboration, i.e., it develops formal and informal structures and/or avenues of mutual learning, mobilising resources, and strengthening of coordination and cooperation, which keeps implementation on track, drives progress, and allows for and learns from variation.

6.5 Fostering a Gradual Transformational Change

Transformational change is often difficult due to social, economic, cultural, environmental and political barriers and resistances²³. It may emerge gradually over time or can occur suddenly in response to a specific event or incident⁴⁶. Scenario planning deals with two worlds: the world of facts and the world of perceptions⁴⁷. The development of the latter part largely depends upon the former. TSP is well-grounded in generating factual scenarios that facilitates effective real-world decision-making based on

the stories scenarios imagine. A substantial initiative of 'communication and outreach' of scenarios is essential to change the mental maps of laymen and leaders. For instance, the team of the Dinokeng Scenarios³⁶ undertook a large-scale dissemination of scenarios through, for example, private briefings, distributing reports, broadcasting videos, organising workshops, publishing through newspaper articles and other means, to share the scenarios' powerful messages, change the mindset of the public, and regenerate the active participation of people in improving the democratic system. The Dinokeng Scenarios have successfully reverberated in the national discourse and helped to build, to a great extent, new democracy through reforming the dysfunctional politics and its capacity to deal with the current and imminent challenges³⁶. Likewise, the Mont Fleur Scenarios team had undertaken strong initiatives for strategic conversation with stakeholders, citizens' movements, social media coverage, and television debates in order to present the South African crises around economic, political and cultural systems, and to transform public perception around the country's future directions (i.e., stories/scenarios).

In South Africa, TSP findings gradually transformed (1) personal mindset (i.e., willingness of contribution to the emerging South Africa) of the individuals who participated in scenario building (first order influence), (2) portfolios of the leaders who later occupied national positions (second order influence), and (3) the macroeconomic policy through internalising and applying scenarios (third order influence)⁴².

7. Summary and Implications

The unprecedented pace of climate change poses a serious threat to individuals, organisations and societies. In this context, transformations in social, economic and technological decisions and actions are considered the most effective to combat the impacts of climate change²⁰. This study has explored the theory and practices of Transformative Scenario Planning (TSP) with a view to develop a replicable method of TSP that has strong theoretical and practical bases for facilitating change and transformation. Using a review and synthesis of pertinent

literature, this article has provided evidence in support of the theory of TSP, which is corroborated by presenting two case studies of TSP application. In parallel with these case studies, methodological improvements have been documented – incorporating the essence of theory U – e.g., adding data collection approaches (e.g. dialogue interviews) and data analyses tools, i.e., traditional qualitative data analysis is substantiated by using computer-aided software.

Transformative process revolves around social, economic, political, and environmental complexities. Transformational adaptation, for instance, builds on synergies between adaptation planning and implementation, development strategies and social protection, and disaster risk reduction and management²⁰. TSP presents narratives of alternative environments (e.g., the Zimbabwe scenarios deduced four alternatives to influence the better future of the country), which determine critical decisions that must be made to maximise the future role and impact of the technological, financial, regulatory, legislative, and administrative systems. TSP visualises adaptive and transformative insights about an uncertain future and improves perceptions and judgments in resource management, decision-making and governance. Key issues of TSP process are: a whole system team that comprise ideal representatives of society and stimulate system thinking a strong container that facilitates social change through transforming stakeholders' understandings, relationships, intentions and actions; and a rigorous process that not only constructs novel scenarios but also promotes initiatives and builds networks for multiplication and spreading scenarios. Findings indicate that if these key issues are moved around the right direction, scenarios produce desired results by building shared visions, involving stakeholders in scenario generations and dissemination, promoting useful collaborations, improving implementation of policy instruments, and encouraging social transformation. Findings derive from the TSP study are useful for crafting adaptive and transformative policies in various fields. This research made three major contributions. Firstly, this is the first reported study

to outline the methodology of TSP in order for it to be applied in academic research.

Secondly, this study extends knowledge that facilitates deliberate transformative change. And third, TSP is highlighted as an approach that puts equal emphasis on planning and implementation, which is of significant importance as implementation is a rather neglected area in comparison with planning in development research, e.g., adaptation⁴⁸. In conclusion, this study provides a philosophical, methodological, theoretical, and practical basis for TSP. Application of TSP raises many challenges and working to minimise these will be an important area of future research. This study presents the theory and practices of TSP and seeks to stimulate the debates and inputs that are needed to formulate a well-accepted theory and methodology for this tool.

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