d·i·e

Deutsches Institut für Entwicklungspolitik

German Development Institute

Studies

Building Long-Term Scenarios for Development

The Methodological State of the art with an application to Foreign Direct Investment in Africa

Erik Lundsgaarde

Building long-term scenarios for development

German Development Institute (DIE)

The German Development Institute is a multidisciplinary research, consultancy, and training institute for Germany's bilateral development cooperation as well as for multilateral development cooperation. On the basis of independent research, it acts as consultant to public institutions in Germany and abroad on current issues of co-operation between developed and developing countries. In a 9-month training course, the German Development Institute prepares German and European university graduates for careers in the field of development policy.

Dr. Erik Lundsgaarde is a research fellow at the German Development Institute (DIE), Bonn. His current research explores how the global development landscape could evolve in the coming decades. His previous research has examined the domestic politics of foreign aid in donor countries in detail. Dr. Lundsgaarde received Ph.D. and M.A. degrees in Political Science from the University of Washington, a Diploma in European Studies from the University of Strasbourg, and a B.A. in Political Science and International Studies from the University of Kansas.
E-Mail: erik.lundsgaarde@die-gdi.de

Studies
Deutsches Institut für Entwicklungspolitik 40

Building long-term scenarios for development

The methodological state of the art with an application to foreign direct investment in Africa

Erik Lundsgaarde

DIE Research Project "Development Policy: Questions for the Future"

Bonn 2008

Studies / Deutsches Institut für Entwicklungspolitik
ISSN 1860-0468

Lundsgaarde, Erik: Building long-term scenarios for development : the methodological state of the art with an application to foreign direct investment in Africa / Erik Lundsgaarde. DIE Research Project "Development Policy: Questions for the Future" – Bonn : Dt. Inst. für Entwicklungspolitik , 2008 – (Studies / Deutsches Institut für Entwicklungspolitik ; 40)
ISBN 978-3-88985-376-9

Tulpenfeld 6, 53113 Bonn
☏ +49 (0)228 94927-0
🖷 +49 (0)228 94927-130
E-Mail: die@die-gdi.de
http://www.die-gdi.de

Preface

This paper was produced in the context of a research project funded by the German Ministry for Economic Cooperation and Development (BMZ) that seeks to evaluate the applicability of methods of futures analysis in the development policy arena and to identify emerging development cooperation challenges. In the early stages of preparing this study, I benefited from discussions with Nicholas Davis, Masataka Fujita, Roland Hunziker, Anne Miroux, and Per Sandberg, whose help is gratefully acknowledged. I also would like to thank my colleagues at the German Development Institute, who provided helpful comments on an earlier version of this study. The standard disclaimer applies.

Erik Lundsgaarde Bonn, December 2008

Contents

Figures

Tables

Boxes

Abbreviations

DCDC	Development Concepts and Doctrine Center
DFID	Department for International Development, United Kingdom
DRC	Democratic Republic of the Congo
FDI	Foreign Direct Investment
GDP	Gross Domestic Product
IMF	International Monetary Fund
IFPRI	International Food Policy Research Institute
IMPACT	International Model for Policy Analysis of Agricultural Commodities and Trade
IPCC	Intergovernmental Panel on Climate Change
LDCs	Least Developed Countries
NEPAD	New Partnership for African Development
NIC	National Intelligence Council, United States
ODA	Official Development Assistance
OECD	Organisation for Economic Cooperation and Development
SADC	Southern African Development Community
SID	Society for International Development
UNCTAD	United Nations Conference on Trade and Development
UNECA	United Nations Economic Commission for Africa
WAEMU	West African Economic and Monetary Union

Summary

1. An overview of scenario analysis methods

This study provides an introduction to scenario analysis as a tool for development policy planning. The study is divided into three parts. The first part of the study outlines the central characteristics of scenario analysis methods, distinguishes scenario analysis from other research approaches, and presents a general guide for building scenarios. Illustrations of applications of scenario analysis methods in fields related to global development complement the methodological discussions in this part of the study.

A second part of the study develops an original illustration of how scenario methods can be applied to examine development policy issues by focusing on the question of how foreign direct investment flows could change the African development landscape toward the year 2030. This chapter culminates with the presentation of four fictional narratives charting how investment patterns and development outcomes could unfold over the next two decades.

The third and final chapter of the study outlines several considerations that policymakers potentially interested in using scenario methods as a supplement to their existing planning tools should make in evaluating whether the application of these methods within their organizations is desirable.

The term "scenario" has a theatrical connotation, reflecting the outline of a plot that ties a story together. Scenarios can be considered to be imagined narratives, or hypothetical sequences of events that explain how possible futures can unfold. The emphasis that scenario analysts place on exploring multiple alternative futures underlines that scenario analysis does not purport to predict the future. Instead, scenario analysts generally aim to deal with future uncertainty by presenting a range of possible outcomes that can be accepted as equally plausible.

From the 1950s onward, scenario analysis methods developed to support planning processes in the security arena, and became increasingly popular in corporate settings from the 1970s onward. These methods can fulfil several aims. By offering a tool for anticipating uncertain out-

comes that can impact an organization's ability to accomplish its goals in the future, scenario analysis often serves a risk assessment and risk management function, and the approach can also be used to evaluate the robustness of adopting particular strategies. The process of scenario construction can also serve to promote dialogue and to stretch the existing mental maps used within an organization to interpret the external environment.

The scenario approach accommodates multiple methods. Scenarios may be constructed with the assistance of quantitative modelling, may rely more exclusively on qualitative research techniques, or may involve a combination of quantitative and qualitative approaches. While they differ in terms of the type of information that they use to build scenarios, quantitative and qualitative scenario approaches share a basic understanding of scenarios as fictional representations of the future.

The most prominent examples of quantitative scenario exercises in areas of relevance to global development policy are scenarios generated with the aid of systems dynamics models that highlight how interactions among central variables produce changes in the structures in which these interactions take place. This approach to scenario building, featured in Limits to Growth and applied by the International Futures project, emphasizes non-linear developments as well as feedback effects. Drawbacks of these kinds of quantitative approaches include the high demands of data collection that they impose as well as their lack of open-endedness given the fixed quality of the models that underlie scenario generation efforts.

Proponents of qualitative scenario approaches underline that qualitative methods may be especially useful in drawing attention to questions of cause and effect, exploring interaction effects, and anticipating future surprise occurrences. Qualitative scenario exercises generally adopt either a normative or an exploratory orientation.

In outlining the process of building scenarios, the study focuses on the roadmap to scenario construction provided in the literature on the intuitive logics method, a qualitative scenario approach with an exploratory orientation popularized by Shell and other leading scenario analysis exponents. Key elements of this approach include its emphasis on

drawing on tacit knowledge held within an organization and its focus on isolating the most important and most uncertain drivers of change as a basis for constructing scenario storylines.

Drivers of change are identified as variables that are considered to have a determining influence over the direction that the future will take. The scenario analysis literature points to several common categories of drivers of change to consider, including demographic patterns, general economic conditions, the nature of governmental systems and regulation in a particular setting, technological forces, and international influences. Some driving forces may be more predictable than others, and scenario builders are advised to separate constant and so-called predetermined drivers from unpredictable drivers. Developing scenarios with reference to the most uncertain drivers ensures that scenarios will reflect a wide range of possible futures. For the sake of simplification, scenario builders may wish to construct a grid that juxtaposes the two most important drivers of change along its axes. This scenario matrix helps in organizing the narratives that illustrate how different trajectories of events unfold through time.

While the widespread use of scenario analysis provides an indication that scenario methods are considered to be useful supplements to other planning techniques, there are limited assessments of the utility of scenario approaches in the scenario analysis literature. Indeed, existing evaluations of scenario methods have been critical. Common scenario analysis shortcomings have included an inadequate differentiation among scenarios, the limited integration of unexpected occurrences into storylines, and the presentation of overly vague policy recommendations. The conclusion of this chapter suggests that analysts can improve scenario analyses by ensuring that key stakeholders are involved in the scenario development process and by attempting to narrow the focus of the scenario exercise.

2. Scenario analysis and FDI to Africa

This section begins with a review of general global trends in foreign direct investment (FDI). In comparison to other developing regions and to the world as a whole, the African continent has traditionally been a marginal investment destination, accounting for some 3 % of global

FDI flows in recent years. Focusing on the future of investment in the African context is relevant in exploring the future of development policy given that private investment potentially represents an important source of external development finance and because Africa will continue to be the region of the world with the highest concentration of less-developed and low income countries beyond the time horizon of the Millennium Development Goals.

With respect to overall macroeconomic indicators, African economies as a whole have performed well in recent years. Rising commodities prices and fiscal discipline at the national level have contributed to these positive outcomes. Nevertheless, the continent also continues to face a variety of development challenges, including rising inequality and high levels of absolute poverty.

African foreign direct investment trends have mirrored overall macroeconomic trends on the continent, increasing significantly since the beginning of the decade. Yet investment in Africa is concentrated both geographically and by sector. A small number of large economies (including Egypt, Nigeria, and South Africa) have attracted the lion's share of investment, while the natural resource sector has been favoured across the continent. Diversification remains a major challenge for African economies.

To identify key drivers of investment patterns to Africa in the future, the study reviews the literature on determinants of FDI flows. Determinants of FDI include geographic factors such as proximity to major markets and natural resource wealth, economic factors such as market size and the skill-level of the workforce, and political factors like the security situation or policy context in the host country. The study selects political stability and the nature of the global economic context as two key uncertainties that can be used to provide a skeleton for creating four distinct scenarios, that reflect futures characterized respectively by an expanding global economy and a politically stable African continent *(l'Essor Africain)*, an expanding world economy and an unstable continent *(The Lucky Few)*, a contracting global economy and unstable continent *(The Lost Continent)*, and a contracting global economy and stable continent *(Weathering the Storm)*.

Such scenarios might be used by policymakers to compare their own views of how the future could unfold with the fictional storylines. This type of comparison may encourage readers to think about what types of occurrences might disrupt progress toward the "official future" that they imagine. In addition, policymakers can focus on the positive and negative developments identified in the scenarios and think about the types of policy responses that might be necessary in order to bring about favourable outcomes. Finally, policymakers can use the range of scenarios to explore how well current strategies would fare in the varied contexts the scenarios describe. These scenarios do not by themselves provide a clear roadmap for action, however. Indeed, they leave policymakers with a great deal of room for interpretation.

3. *Scenario Analysis and Global Development: Considerations for Policymakers*

This section offers several concluding points relating to considerations that development policymakers should make in evaluating whether and how scenario analysis methods should be integrated into their planning portfolios. Scenario analysis methods were developed in corporate and governmental settings in response to dissatisfaction with existing planning tools. Organizations interested in using scenario analysis to support long-term planning should first consider what factors have contributed to the lack of capacity to anticipate emerging trends and long-term challenges within the organization. In the development policy context, the sub-optimal transmission of information from field-level offices to headquarters may represent one cause of limited foresight; another may be lacklustre investment in research on development issues in general. Because scenario analysis can integrate knowledge produced through a variety of channels, if an aid agency has a strong research base to draw on, its scenario building efforts may also be more robust.

As the first chapter of this study emphasized in particular, the integration of a diversity of perspectives in the scenario development process is regarded as a key factor contributing to the success of scenario-building efforts. On the one hand, it is important that key officials within an organization have ownership of the scenario process, so that they can

directly benefit from the process itself rather than just the finished product. On the other hand, involving other stakeholders, for example individuals representing a variety of societal groups, can be beneficial in collecting alternative viewpoints that may challenge conventional wisdom within the organization.

Policymakers considering relying on scenario methods to enhance their long-term planning also need to be careful in their selection of questions to frame their scenario analyses. If a scenario exercise is not sufficiently thematically or geographically focused, it risks painting an overly broad portrait of future developments which may not be well-suited to informing the organization's current strategy.

Finally, policymakers should be aware of basic resource constraints in considering whether to apply scenario analysis methods. Scenario-building can be time and resource-intensive, and since it ideally involves a commitment on the part of key managers within an organization, policymakers will need to determine how many organizational resources they want to invest in a research process that does not necessarily deliver neat actionable policy recommendations.

1 Overview of scenario analysis methods

1.1 Introduction

This study provides an introduction to scenario analysis as a tool for supporting development policy planning. This method, which represents one prominent approach for studying what the future may bring, has been applied in a host of seemingly different domains, including security analysis, corporate strategy, and environmental planning. Across these areas of analysis, planners share the fundamental challenge of anticipating developments in a future that is uncertain.

Coping with uncertainty is a challenge common to many individuals and organizations and the governmental actors who will make decisions about the future priorities of global development policy are no exception. The context in which development policy is formulated and implemented is naturally complex, given the diversity of governmental and private actors involved, the range of social, economic, and political problems development policies aim to address, and the wide variations in the nature of the local settings where policy interventions are ultimately implemented. Adding to the uncertainty generated by these features of the global development landscape is the often long-term quality of development interventions. While development assistance may produce results in the short-term, through the delivery of health care treatment or food assistance, for example, it may also contribute to transformational processes that shape economic and political opportunities over a longer time horizon. Development policies enacted in the present will influence the quality of life of future generations, and imagining the kind of world these future generations may inherit can be useful in encouraging reflection on what types of policies can be devised to address long-term challenges.

The present study forms part of an ongoing research project that aims to reflect on how the global development landscape may change in the coming decades. As a starting point for the analysis of long-term changes in the development arena, the first part of this study outlines the central characteristics of scenario analysis, highlights the distinctiveness of the scenario approach from other forms of inquiry, and offers a general guide for building scenarios. This discussion also reviews illustrations of how scenario methods have been used to grapple with themes such as the global security context, the international business environment, and global environmental

challenges that are also relevant in considering how the context of development policy might change in the years ahead. In providing an overview of this methodological approach, this study highlights its promise as well as its limitations, and stresses those purposes for which scenario analysis appears to be most appropriate.

A second part of this study develops an original illustration of how scenario methods can be applied to examine development policy questions. This specific illustration focuses on the question of how foreign direct investment flows may change the African development landscape toward the year 2030. It presents four narratives (*L'Essor Africain*, *The Lucky Few*, *Weathering the Storm*, and *The Lost Continent*) that describe possible futures for the African continent. These narratives are organized around two key dimensions of uncertainty that may influence investment trends. The first dimension of uncertainty deals with the question of how the state of the global economy will influence investment patterns and development outcomes and the second area of uncertainty relates to the ability of African governments to maintain political stability both internally and across the region. The justification of the selection of these drivers of change is discussed alongside a presentation of general determinants of investment patterns prior to the elaboration of the scenarios themselves. A third and final section of the study outlines general considerations for policymakers potentially interested in using scenario methods.

1.2 Scenario analysis: Definition and history

Used in its original sense, the term "scenario" refers to the outline of a theatrical plot, an imagined sequence of events that ties a story together. Scenario analysts often take this conceptualization of a scenario as an imagined narrative as a starting point. Thus Porter defines a scenario as *"an internally consistent view of what the future might turn out to be"* (1985, 446), while Schoemaker characterizes scenarios as *"focused descriptions of fundamentally different futures presented in a script-like or narrative fashion"* (1993, 195). In adopting the plural form, this definition highlights the emphasis that scenario analysis places on the elaboration of multiple alternative futures rather than focusing on a presentation of a single vision of the future.

The emphasis on a scenario as a narrative highlights that scenario building requires more than a description of static future states. According to one influential definition, *"scenarios are hypothetical sequences of events con-*

structed for the purpose of focussing attention on causal processes and decision points" (Kahn / Wiener 1967, cited in Greeuw et al. 2000, 7). This formulation underlines that understanding how a possible future may unfold is just as important as describing the potential end state. The notion of a *hypothetical* future is also a concept of central importance running through these definitions, since many scenario analysts would emphasize that a scenario is not a prediction (van Notten 2006).

In the same way that scenario analysts often suggest that scenarios are not intended to generate predictions about the future, they also underline the distinction between forecasting and scenario analysis (van der Heijden 2005). A forecast is a projection of future trends based on observed regularities in correlations between a given set of variables. While forecasters may acknowledge the uncertainty of their predictions by estimating the likelihood of a particular occurrence, scenario analysis aims to deal with uncertainty by presenting a set of fundamentally different outcomes that are generally accepted as equally plausible.

Although the use of scenarios for planning purposes has a long heritage, particularly in the area of military strategy, the approach gained momentum in the early Cold War period. In the United States, scenario analysis emerged as a tool to grapple with the uncertainties that accompanied the development of new weapons technologies and heightened confrontation with an unfamiliar political system (Bradfield et al. 2005). Herman Kahn, a prominent defence intellectual affiliated with the Rand Corporation, is often credited with providing the foundation for the wider use of scenario techniques in the United States in this period. Kahn's work emphasized the need to "think about the unthinkable", or to develop perspectives on the nature of future challenges that defied conventional thinking. For Kahn, the scenario approach offered a means to stimulate imagination, to uncover important trends and anticipate potential crises, and to explore the implications of alternative policy choices. Ultimately, the goal of the scenario enterprise was to help policymakers make better decisions. To this end, Kahn founded the public policy think tank the Hudson Institute in 1961 (Aligica 2004).

France represented another important centre for the development of scenario techniques from the 1950s onward. As in the American case, the rise of scenario analysis in France was driven by a desire to inform public policymaking. The scenario approach developed by Gaston Berger known as *La Prospective* emphasized that political decisions needed to take the long-

term consequences of policy choices into consideration (Masini 2006). The prospective thinking advocated by Berger and other French futurists such as Masse and de Jouvenel could be seen both as an attempt to provide a corrective to existing forecasting techniques and as an effort to emphasize the normative functions of scenario building (Bradfield et al. 2005). For these thinkers, the imagination of preferred future states could serve to encourage policymakers to make decisions that would move the country toward those better futures. As leading French scenario planning expert Michel Godet stresses, *La Prospective* seeks to combine the anticipation of possible or desired changes (pre-activity) with pro-activity, action based on the assessment of strategic options available given a set of possible or desired futures (Godet / Roubelat 1996; Godet 2006).

While scenario methods enjoyed a first boom in the public policy arena, scenario analysis became increasingly popular in corporate planning from the 1970s onward. The development of scenario planning within Royal Dutch Shell, one of the world's largest corporations, contributed to the heightened popularity of the method. The scenario techniques developed at Shell responded to a demand within the company to move away from traditional planning practices that viewed the future business environment as a likely continuation of existing trends.

Using Kahn's method as a foundation, planners at Shell first generated exploratory scenarios that attempted to distinguish between uncertainties and predetermined elements in the business environment. These scenario building efforts in the early 1970s examined potential changes in the nature of supply and demand for oil and the possible effects of how energy markets could be regulated. A more detailed analysis of the interests and behaviour of key actors in response to changing conditions of oil availability led the scenario planners at Shell to recognize that a major discontinuity in the nature of the oil supply was possible in the decade ahead. While the scenario team suggested that the oil disruption might come in 1975, the oil crisis of 1973 offered clear evidence that what might have appeared unthinkable some years earlier had actually come to fruition (Wack 1985b). The apparent success of the scenario approach in anticipating the oil shocks provided a compelling reason for Shell's management to continue to rely on scenario planning to inform corporate strategy, and the company's experiences remain a central point of reference in understanding what scenarios can accomplish and how they should be developed.

1.3 Purposes of scenario analysis

Scenario analysis can serve numerous functions. As the discussion above suggests, one of the key promises of the scenario approach has been to anticipate uncertainties in an external environment that will influence how an organization can accomplish its goals in the future. In this way, scenario building serves a risk assessment and risk management function (Wack 1985a; Miller / Waller 2003). More generally, scenario analysis can provide decision-making support. The presentation of alternative futures may enhance decision-making processes within organizations by challenging existing cognitive biases among decision makers and stimulating thinking about the potential consequences of experimenting with untested policies (Chermack 2004).

The identification of a range of possible futures can also serve to reflect on how robust a particular strategy may be. For example, if the scenarios that are generated point to a policy response that would be valuable across the range of potential outcomes, this response might be considered to be safer than a potential policy response that would be appropriate only in one scenario of how the future could play out (Clemens 1995; Schwartz 1996). Decision makers can also evaluate how well their policies will perform in individual scenarios to test policy robustness. As van Notten (2006) suggests, scenario analyses that perform these functions can be characterized as "product-oriented", since they aim to produce information about the drivers of emerging trends and to test specific policy options.

Advocates of scenario methods also highlight a broader purpose of scenario construction efforts: to prod individuals and organizations to re-examine the assumptions that underlie their views of the world, and in so doing, to increase their capacity to accommodate diverse perspectives and to generate new ideas (Shell International 2003). In this vein, Chermack (2007) describes scenario building as a process of disciplined imagination that succeeds when a target audience alters its mental map of the world.

The importance of broadening perspectives in the scenario enterprise stems from a core belief that knowledge held by a single individual or expressed in a single viewpoint is less complete and less reliable than knowledge that is accumulated from multiple sources (Blasche 2006). If the inclusion of a broad range of viewpoints may allow analysts to obtain a better picture of reality, the expression of diverse perspectives can at the same time con-

tribute to a heightened appreciation of common viewpoints and foster the emergence of shared understandings about how the future may develop. Scenario building may therefore contribute to consensus-building, particularly when the process is designed in a participatory manner emphasizing group dialogue as a stimulus for creating images of the future.

One scenario building process that is often cited as a prime example of the dialogue-promoting function of scenario construction was the *Mont Fleur* scenario exercise carried out in South Africa between 1991 and 1992. During the Mont Fleur process, 22 South African participants representing a broad spectrum of societal and political groups worked together to formulate narratives about how the country could develop toward the year 2002. Taking the contemporary South African context marked by economic and social crises as a starting point, the participants developed four scenarios that were organized around three central questions relating to the prospects for a negotiated political settlement between the apartheid regime and anti-apartheid political groups, the rapidity of a regime transition, and the sustainability of government policies. One of the scenarios produced by this group pointed to the prospect of a political settlement leading to participatory democracy that could be achieved within a short period of time and that would create a soft political and economic landing for the country (Kahane 1992). While this scenario exercise did not outline concrete policy proposals that would put the country on a path toward rapid and stable democratic reform, the publication of the scenarios did sketch an optimistic path out of crisis that fed into the political discourse of the transition period.

The idea generation and dialogue promoting goals of scenario analysis underline that the approach often fulfils a basic exploratory function. In constructing the pathways that lead to alternative outcomes, however, scenario analysts may also evaluate or create means of representing knowledge about the world by drawing attention to questions of cause and effect and by considering how central factors interact to produce a given outcome. As Aligica (2007) suggests, a scenario can be likened to a thought experiment that can examine the limitations of existing theoretical frameworks and propose new models for representing the relationships between central variables of interest. While other methods may aspire to do the same, the distinctiveness of the scenario approach lies in its commitment to accepting multiple and potentially competing models as equally valid.

1.4 Varieties of scenario analysis

The scenario approach accommodates multiple methods. A central distinction can be made between quantitative scenario methods that draw on formal models to project the future and qualitative methods that hew more closely to the definition of the scenario as narrative proposed earlier in this study. Quantitative and qualitative scenario analysis approaches differ in terms of the types of information they rely on to build scenarios, but share a fundamentally similar view of the kind of knowledge that scenario construction produces. This section first examines more formalized scenario methods and then reviews the qualitative approaches that have developed from the Shell scenario analysis tradition in particular.

1.4.1 Distinguishing trend extrapolation from scenarios

Before outlining key quantitative approaches to scenario analysis, it is useful to briefly highlight the difference between scenarios and trend analysis or trend extrapolation. Trend analysis offers a projection of the future based on patterns observed from the past. These projected trends may be of a linear, exponential, or parabolic nature (which may for example reflect cyclical patterns of change) and are generally based on a model that provides the best fit to historical data (UNIDO s. a.). An example of a long-term projection based on a model incorporating assumptions taken from historical experiences is the Goldman Sachs study on the future weight of Brazil, Russia, India, and China in the world economy (Wilson / Purushothaman 2003). Although the authors of this report acknowledge that their projections toward 2050 are laden with uncertainty and hint that there are factors that could disrupt the progression of the trends they describe, they nevertheless present single projections for each of the countries they examine.

The orientation of trend extrapolation toward the past likely makes it difficult to identify potential discontinuities. However, trend extrapolations are acknowledged to be useful in examining changes in the short-term and may be more effective when available data stretch across a time period that is much longer than the forecasting horizon (Duinker / Greig 2006).

While trend extrapolation generally results in the identification of a single probable trend line, another form of trend analysis called trend impact analysis identifies multiple potential trajectories and produces a result consistent with the alternative futures generated in scenario analysis. Trend im-

pact analysis shares a common point of departure with trend extrapolation, in that the first step is to project a "surprise-free" trend line based on historical data. The method then seeks to develop divergent projections through the identification of factors or future events that could hamper the progression of the existing trend (Bradfield et al. 2005). Trend impact analysis may be especially useful when a researcher wants to evaluate the potential range of effects that the variation in a single central variable of interest may produce (Kosow / Gaßner 2008). This method has been used to present a range of predictions on the progression of indicators including per capita gross domestic product (GDP), infant mortality, and food availability that are combined in the State of the Future Index prepared by the Millennium Project run by the World Federation of UN Associations (Gordon 2003c).

1.4.2 Quantitative scenario analysis methods

One key criticism of trend extrapolation is that by assuming that the future will mirror the past, this approach neglects the dynamic interactions between central variables of interest that produce changes in the structures in which these interactions take place. Scenario building on the basis of systems dynamics modelling has sought to address this deficiency in trend analysis. Systems dynamics models have their foundation in the principle that in order to offer projections about how the future will evolve, it is necessary not only to identify a list of variables that are likely to influence the outcome of interest but also to examine the way that the values of the variables themselves may change through time as a result of the influence of their interaction with other variables constituting the entire system. The assumption that such feedback effects are common and the assumption that variables often have a non-linear relationship to one another suggests that the evolution of the system would be difficult to understand without recourse to formal statistical analysis (Größler 2006).

The influential publication *Limits to Growth* built scenarios on the basis of a systems dynamics model. According to the authors of this work, the purpose of the model they developed was *"to understand the broad sweep of the future – the possible modes, or behaviour patterns, through which the human economy will interact with the carrying capacity of the planet over the coming century"* (Meadows et al. 2004, 137). This statement underlines the study's consistency with one of the basic aims of scenario analysis,

namely to map the contours of potential developments rather than to offer hard predictions about future occurrences. The World3 model that the authors of *Limits to Growth* developed explored the relationships between demographic changes, the evolution of capital stocks, and the use of non-renewable natural resources. The central claim of this work was that exponential growth in population as well as in industrial production would eventually overtax the capacity of the world's physical systems to provide inputs for the continuation of these patterns. Without the enactment of policies that would curb population growth and prevailing production and consumption patterns, humanity would ultimately face the prospect of sharp economic decline (Meadows et al. 2004).

The scenarios that *Limits to Growth* generated were based on a single model. Variations in potential outcomes were explored by manipulating the values of particular variables to reflect more optimistic or pessimistic projections. As an example, one alternative to the baseline scenario simulated the world's growth trajectory in the presence of double the estimate of available natural resources. While the experimentation with values of variables included in a model may produce alternative futures that can serve as useful tools for thinking about key issues, the fixed quality of the model itself can invite criticisms similar to those raised with respect to trend extrapolation. If the relationships between variables are predefined, the open-endedness of such scenario exercises may naturally be limited.

Another prominent scenario analysis effort that is based on a systems dynamics model is the International Futures project led by Barry Hughes.[1] This research initiative has developed a publicly available software program that allows interested users to explore how the global system may evolve through time horizons stretching as far into the future as 2100. The platform permits users to select parameters and to include or exclude categories of drivers of change at will and therefore provides the user some flexibility in creating scenarios that respond to their individual assessments of how relationships between central variables in the model should be defined and what types of drivers of change should be regarded as most im-

1 The project is housed at the University of Denver, and links to further information about the nature of the model as well as the software program itself can be found at the following web address: http://www.ifs.du.edu/.

portant (Hughes / Hillebrand 2006). Even with this flexibility, however, the set of equations that underpin the model cannot be changed (Greeuw et al. 2000).

An advance of the International Futures project over the model presented by the authors of *Limits to Growth* is its attempt to incorporate a more comprehensive set of drivers of global change into its baseline model. Along with a host of other variables, production and consumption functions in a range of economic sectors including industry and agriculture, demographic factors, energy supplies and use, and features of the global political landscape including regime characteristics in individual countries form sub-systems that together influence the broader global system (Hughes / Hillebrand 2006). The inclusion of such a wide range of variables as well as the reliance on indicators used to describe conditions in individual countries can pose a challenge for data collection. Though one stated advantage of systems dynamics models is that they can be run from a single base year and do not require extensive time-series data (Greeuw et al. 2000), the resource commitments and modelling skills needed to construct and manipulate large datasets represent key constraints for carrying out quantitative scenario analyses.

Hughes and Hillebrand (2006) underline that the scenarios generated with the International Futures software program are fundamentally exploratory in nature. They note that the program *"is no crystal ball. Even with the best of computer simulations, the future remains essentially unpredictable"*(ibid., 5). As with other forms of scenario analysis, the exploratory quality of the enterprise does not necessarily limit its potential utility to policymakers, however, and the International Futures software program has recently served as an input to governmental initiatives to identify future challenges in the intelligence and environmental fields. The main emphasis of the program's current research efforts is directly relevant to the study of the future of development policy, as the International Futures research team is presently examining prospects for progress in human development over the coming decades.[2]

2 This ongoing research project is detailed on the following website: http://www.ifs.du.edu/documents/index.aspx.

A final example of quantitative scenario analysis is the International Food Policy Research Institute's (IFPRI) work exploring global food security prospects toward the year 2050 (von Braun et al. 2005). The International Model for Policy Analysis of Agricultural Commodities and Trade (IMPACT) that is at the heart of IFPRI's scenario generation process is built around supply and demand equations and produces images of the future that are based on the manipulation of variables representing agricultural productivity, population and income growth, and the level of investments directed toward social sectors.

These scenarios are designed to reflect futures that emerge as a result of different policy responses to the challenge of food insecurity. Policy choices are reflected in the simulations through the expected effects that they would have on the central variables of interest. For instance, the increased prioritization on rural development as a development policy goal is expected to lead to enhanced agricultural productivity in IFPRI's "Progressive Policy Actions" scenario; inattention to global agricultural development through stalled international trade negotiations is expected to contribute to declining productivity in its 'Policy Failure' scenario. Hence, policy choices are integrated only indirectly into the stories presented in the scenarios.

Like the other quantitative scenario exercises described above, IFPRI's scenarios serve to illustrate what can happen if certain broad political priorities are adopted, however they do not provide an evaluation of what the most appropriate policies for achieving these goals would be. As an instrument of policy planning support, scenario analyses with such a wide scope may therefore leave policymakers with many unresolved questions. This discussion underlines that the practical outcome of a scenario building process is often to open a dialogue about necessary priorities rather than to propose a detailed set of actionable recommendations. Such scenarios may be described as demonstrative, highlighting how the general orientations favoured by an organization can promote particular outcomes.

1.4.3 Quantitative techniques for assessing drivers of change

Apart from the approaches that undertake scenario construction through computer simulations, another set of quantitatively-oriented techniques has been developed to estimate the impact of particular factors as drivers of fu-

ture changes through the attempt to assign a value to the impact that potential drivers have on one another. These techniques can be used as inputs to scenario development projects, but they are not stand alone instruments for scenario generation. One simple technique is known as Influence Analysis, which arranges potential drivers of change in a matrix where the same drivers are arrayed in the rows and columns. A representation of such a matrix appears below.

Figure 1.1: Influence matrix *)

	Factor A	Factor B	Factor C	Factor D	Sum
Factor A		3	3	1	7
Factor B	0		3	2	5
Factor C	1	1		2	4
Factor D	3	3	1		7
Sum	4	7	7	5	

*) The numbers reflect an ordinal scale from 0 to 3, with hypothetical values assigned according to the following schema: 0=no influence, 1=limited influence, 2=moderate influence, 3=strong influence.

Source: This table reproduces a table appearing in Kosow and Gaßner (2008) that draws on Blasche (2006)

The matrix allows the researcher to make an assessment on an ordinal scale on how strongly each possible driver influences each of the others. The sums in the final row and the final column of the matrix then indicate the relative scale of the influence of various drivers. The above matrix suggests, for example, that Factor A has a strong influence over Factors B and C, but is not as strongly influenced by other factors as the remaining potential drivers are.

More complex methods of cross-impact analysis similarly attempt to explore interaction effects between hypothesized drivers of change or the occurrence of specific events. In particular, this method seeks to evaluate the probability of a hypothesis or event materializing given the occurrence of another event under consideration (Godet / Durance 2007). In the version

of this technique promoted by Godet, the estimation of probabilities of events is conducted through subjective assessments made by experts via surveys. One of Godet's contributions to the field has been the development of software (Smic-Prob-Expert) that can be used to compile and analyze these expert opinions. Like other quantitative techniques, one disadvantage of cross-impact analysis is its limited open-ended quality, since the preparation of a cross-impact matrix or a survey requires that factors for which experts are expected to evaluate the likelihood of their occurrence be set in advance (Gordon 2003a).

One final method that can incorporate quantitative analysis into the scenario construction process is the Delphi Method. This method shares a reliance on expert opinion with cross-impact analysis. The distinctiveness of the Delphi technique is its attempt to identify a general tendency in the appraisal of the occurrence of particular events through multiple rounds of surveys. The survey format allows experts to remain anonymous and purportedly fosters the equal expression of views that might be lost in group exchanges.

The multiple iterations are designed both to allow for feedback from the survey organizers that nudge participants toward consensus and also to allow respondents to reassess their own responses over time (Gordon 2003b; Landeta et al. 2008). Quantification through simple explorations of central tendency can give the researcher an idea about the expected probability of a given phenomenon materializing. While one emphasis of Delphi methods is the generation of insights about when a particular phenomenon might occur, the technique can also be used to assess whether a particular course of action is desirable or to identify specific policy measures that may be appropriate to achieve desired outcomes (Gordon 2003b).

While a Delphi round may have the advantage of being able to collect opinion without having to confront the logistical problem of assembling experts in one location, other practical considerations may offset this perceived advantage of the technique. The requirement of multiple survey rounds naturally prolongs the data collection process, and may also diminish the attentiveness of the participants to the focus questions as the process unfolds. Moreover, the survey format may limit the open-endedness of expert responses. A series of individual expert interviews may therefore provide a good alternative to generating the information that the Delphi technique is designed to produce. If the interviewer incorporates knowledge acquired

through exchanges with early interviewees into subsequent interviews, the interviewer may also be able to approximate the Delphi experience based on the anonymous airing of expert opinion (Gordon 2003b).

1.4.4 Qualitative scenario analysis methods

The quantitative scenario techniques described above acknowledge the subjective quality of the assessments they produce and do not claim to provide hard predictions about how the future will unfold. These techniques can be viewed as potentially complementary to qualitative approaches, and some scenario building projects may integrate both quantitative and qualitative elements.

An example of scenario work that combines qualitative and quantitative approaches is the research conducted by the Intergovernmental Panel on Climate Change (IPCC) to explore future patterns of carbon emissions. These climate scenarios were built around alternative narratives that sought to account for the potential impact of factors including forms of governance, patterns of economic activity, and technological change on the nature of carbon use. The narratives served as a basis for models employing quantitative indicators that were considered to reflect the central elements of these storylines.[3] Quantitative indicators may also serve as useful inputs for narrative scenarios by offering descriptive information about existing trends or by estimating the impact of particular drivers on the outcome of interest.

In the study of politics, qualitative research methods that emphasize the in-depth study of individual cases and display sensitivity to time and place in developing explanations for social phenomena have enjoyed a resurgence in the last decade. This resurgence has been exemplified by the literature expounding on the main elements of the process-tracing method, which seeks to examine causal relationships between variables through the analysis of historical documentation and interview research in particular (George/Bennett 2005).

Characteristic elements of process-tracing include an attention to examining the sequence in which events unfold and the exploration of interaction

3 The Special Report on Emissions Scenarios prepared by the IPCC can be accessed at the following website: http://www.grida.no/climate/ipcc/emission/index.htm.

effects, such as effects that relate to the way that the behaviour of political actors is shaped by the institutional environment in which they operate. In addition, proponents of process-tracing methods suggest that this form of inquiry carries the further advantage of being able to generate new hypotheses, whereas methods relying on statistical analysis may emphasize theory testing more exclusively.

Authors advocating qualitative approaches to scenario planning echo the arguments that are made in favour of using qualitative methods in the social sciences. In his scenario analysis manual, for example, van der Heijden (2005) highlights the process orientation of qualitative scenario analysis, which enables a consideration of cause and effect through attention to sequencing. Ralston and Wilson indicate that because qualitative scenario analysis *"is not tied to computer algorithms…this approach is more likely to generate the sort of lateral thinking that is needed to anticipate future surprises and major inflection points"* (2006, 9). Uninhibited by a formal model, the qualitative approach may therefore leave open a process of discovery. Mirroring arguments in favour of case-study analysis, Aligica underlines that a key purpose of the detailed narratives that characterized Kahn's approach to scenario building was to provide a form of analysis that allowed for *"the comprehension of many interacting elements at once"* (2007, 295).

Qualitative scenario-building exercises can be described as either normative or exploratory in nature (Börjeson et al. 2006). Normative scenarios focus attention on questions related to "what should happen", while exploratory scenario building exercises ponder questions about "what could happen". Clearly, even in an exploratory scenario building exercise that attempts to assess how an organization might be affected by changes in its external environment, a normative element is still present, since the question framing the scenario analysis is likely to be driven by the set of goals an organization hopes to achieve. The sections that follow briefly highlight key aspects of normative and exploratory scenario exercises.

1.4.5 Normative scenarios

A scenario builder's decision to adopt a more explicitly normative focus at the outset of a scenario project can influence the choice among qualitative scenario analysis procedures. If the purpose of a scenario exercise is to

imagine a pathway toward a preferred future, scenario builders can adopt a backcasting approach, where the starting point tends to be a visioning exercise that first outlines a goal to be achieved and then proceeds to map out the types of transformative measures that need to be taken to move from the present situation toward those desired goals (Carlsson-Kanayama et al. 2008). Backcasting, and normative narrative scenarios more generally, tend to focus on exploring the pathway leading to a single desirable end goal, in contrast to the emphasis placed on multiple futures in other forms of scenario analysis (Gaßner / Steinmüller 2006).

The backcasting approach has been especially popular in examining questions of environmental sustainability, energy use, transportation, and urban planning. As an example, the Organisation for Economic Cooperation and Development (OECD) conducted a backcasting study over the period between 1994 and 2000 that sought to identify how environmentally sustainable transport systems could be developed by 2030 (OECD 2002b). This initiative began with a review of policies in the handful of countries used for case studies and the selection of indicators that could be used to measure the achievement of an environmentally sustainable transport system. Teams of experts working in the case countries then developed baseline scenarios that reflected likely developments in the presence of "business as usual".

Through a process of structured brainstorming, experts then generated ideas about how to move toward the desired sustainable future, orienting this process around two main alternative emphases that could put countries on the right pathway: technological improvements and restrictions in transport use. For the OECD, the value of this type of exercise lay in its ability to motivate deliberate movement toward a more sustainable future by stressing the distance between the pathways outlined in the business as usual scenarios and the preferred scenarios (OECD 2002b). Backcasting may also provide a way of assessing the key challenges that could disrupt progress toward desired futures.

While the backcasting approach may be useful in providing an impulse for needed ruptures with existing practice, it also has some limitations. Börjeson et al. (2006) note, for instance, that the priority attached to achieving a long-term goal may lead to an emphasis on priorities that may be difficult to implement in the short-term. Moreover, the focus on identifying a pathway toward a single preferred goal may be problematic since the goals of

interested actors as well as the menu of policy choices available to address these goals may themselves evolve through time.

1.4.6 Exploratory scenarios: The intuitive logics method

The qualitative approach labelled "intuitive logics" occupies a central place in the English language scenario analysis literature. It is also considered to be the dominant scenario technique in use (Hives 2007). The intuitive logics approach is associated with the scenario development work of Shell, the California-based think tank SRI International, and the Global Business Network, a California-based business consultancy. Its wide application may reflect the effective publicity that scenario analysts associated with these institutions have provided for the method. Several leading primers on scenario analysis methods have been written by individuals with ties to Shell (Wack 1985a; 1985b; Schoemaker 1993; van der Heijden 2005). Other scenario analysis handbooks emphasizing this approach include a book written by SRI analysts Ralston and Wilson (1998), and Peter Schwartz's *The Art of the Long View*. Schwartz, now the head of the Global Business Network, previously worked for both SRI and Shell International.

The intuitive logics approach is exploratory in nature. At its core, the focus of scenario development in this tradition is the identification of challenges that may alter the environment in which an organization operates. In describing the external conditions that organizations will ultimately have to react to, the approach is strongly oriented toward supporting decision-making processes, and its practitioners view scenarios as instruments for reshaping perceptions held by decision makers, which can in turn better allow them to respond to forces of change that are mostly beyond their control (Wack 1985a). The strategic role of scenarios in this tradition is often reflected in the use of the term "scenario planning", which implies organizational learning that translates into action.

As Ralston and Wilson explain, this approach *"is 'intuitive' in the sense that it builds on mental models, 'soft' inputs, and the hunches and assessments of uncertainty by the scenario participants. But it is also logical, formal, and disciplined in its use of 'hard data', analysis and a structured approach to the task"* (200, 8–9). According to Aligica (2003), the tacit knowledge that individuals carry around with them is a significant source of insight about current and future trends, yet translating this background

information or expertise into knowledge about the future likely requires a structured process of idea exchange. The set of guidelines for conducting scenario analysis that are laid out by practitioners of the intuitive logics method provide a road map for using individual expertise to generate plausible futures that can guide decision-making processes. These guidelines are discussed in detail in the section that follows.

1.5 The scenario-building process: General overview

This section outlines the guidelines for the scenario building process that have emerged in the literature on the intuitive logics model. There is some variation among authors following this tradition in terms of the number of steps in the scenario building process that they identify. Schwartz (1996) divides the scenario construction process into 8 steps, Schoemaker (1993) outlines 10 steps, and Ralston and Wilson (2006) break the process down into 14 phases. In spite of these differences in emphasis, the roadmap for scenario-building is broadly similar among these authors.

The differences in the number of steps that have been identified by these authors suggest that the phases of the scenario process that are outlined below are not necessarily discrete stages. While the discussion below is generally structured around the list of procedures produced by Schwartz and reproduced in Box 1 below, the discussion also includes recommendations from a wider variety of authors to reflect the central elements of best practice in scenario development.

Box 1: Main steps in the scenario building process

1. Identify the focal issue or decision
2. Identify the factors in the external environment shaping the issue or decision
3. Isolate the driving forces that influence the factors identified in stage 2
4. Evaluate the relative importance and uncertainty of the driving forces
5. Determine the scenario logics, select dimensions along which scenarios will differ
6. Construct narratives around these dimensions
7. Assess implications of scenarios for focal issue or decision
8. Develop indicators to monitor whether a scenario is materializing

Source: Schwartz (1996)

Step 1: Problem definition

The process of scenario construction begins as any other research process would, with the formulation of central research questions and the delimitation of the scope of inquiry. If the goal of a scenario-building exercise is ultimately to inform decision-making processes within an organization, this stage focuses on the identification of the questions that individuals within the organization regard as critical in understanding how the organization should respond to future change.

These types of critical questions will often be brought out in relation to the discussion of the core competencies of an organization. At the earliest agenda-setting stage of a scenario project involving an organization, an important part of the process is allowing members of the organization to freely articulate their concerns about the future. Van der Heijden (2005) suggests that this process can be carried out either through group brainstorming sessions or through individual interviews, with interviews representing a preferable technique due to the greater detail that they provide.

One element of determining the decision focus of the scenario exercise is assessing the strategic versus tactical nature of the goals that are of central interest to decision-makers. If the preoccupations of decision-makers are primarily oriented toward short-term considerations, scenarios may be not be very useful tools for decision support, since scenarios that would be developed would differ little from one another (Ralston / Wilson 2006).

The case for pursuing a scenario approach then often begins with the recognition that central challenges facing the organization will play out over the long-term. For example, the integration of scenario analysis techniques into the corporate planning portfolios of major energy companies reflects the fact that these companies undertake capital-intensive investments that require a substantial lead time. The construction of an offshore oil platform requires a massive resource commitment, with the return on investment dependent on the state of an international market many years in the future. The selection of the time horizon for the scenario analysis is an important element of this early stage of the scenario building process and should reflect the key issues and decisions on the organization's agenda.

If a given scenario project aims to address an audience that is wider than the particular organization that may fund the study or where the research is carried out, an early stage of the scenario development process will also un-

dertake to conduct a stakeholder analysis to assess what actors will be affected by the decisions or issues that are brought into focus. Schoemaker (1993) suggests, for instance, that stakeholder analysis should be conducted at an early stage not only to assess how particular actors may be affected by developments in a specific area, but also to understand how these actors will be able to influence unfolding events. The nature of the interests of these actors as well as their power to influence conditions relevant to the decision focus can be made explicit during this phase.

In their treatment of scenario methods, Ralston and Wilson (2006) propose other steps that must be taken at the outset of the scenario process including measures related to overall project design that will determine how a scenario project is managed. For these authors, a typical scenario analysis project usually involves planning for a series of multi-day workshops that will engage up to a dozen individuals stretching across several months. The duration of a scenario building exercise will depend on the scope of the research question: global scenarios generally take a year or more to complete.

The scenario process can be managed by a team of researchers to ensure that a diversity of competencies and viewpoints is reflected in the process of elaborating the scenarios. Van der Heijden (2005) similarly emphasizes the need to assemble a research team to accompany the scenario development process, and notes the desirability of having a multidisciplinary team that includes a variety of stakeholders and a mix of individuals with expertise to contribute and those who are able to offer novel perspectives on the problems discussed.

Step 2: Analysis of the external environment

Once the research focus that backgrounds the scenario development process has been narrowed down, analysts can move to a second phase of data collection and analysis that seeks to assemble what is known about the external environment relevant to the problem under consideration. This stage may represent an initial exploratory or idea generation phase that begins to isolate the factors that will be assessed in greater detail as the scenario project unfolds.

As Ralston and Wilson (2006) suggest, information relevant to understanding how a particular problem will evolve in the future will already exist in the organizational setting where the scenario analyst is working, either in the form of studies about specific topics or in the form of personal knowl-

edge. Information gathering can as a result take the form either of literature researches or interviewing. Idea generation workshops within an organization may serve the same purpose. In the course of this information gathering process, scenario analysts will need to focus on a manageable list of topics to explore in further detail. At the same time that this stage unearths relevant knowledge within an organization or related to a particular issue, it also involves the identification of knowledge gaps that scenario builders will need to fill in.

In Shoemaker's (1993) summary of the scenario analysis process, the identification of current trends enters the picture during this early stage of scenario development. The relevance of examining current and historical trends as a foundation for scenario building is clear. On the one hand, producing descriptively accurate pictures of the present can generate insights about what underlying factors have contributed to these outcomes. On the other hand, it is necessary to establish a common starting point for the scenarios that will describe alternative future development paths.

Steps 3 and 4: Identifying and assessing relevant drivers of change

A "driver of change" or "driving force" is a central concept in the scenario analysis literature. The isolation of drivers of change follows from a broad analysis that lists factors that could potentially influence the outcome of interest. A driver is a central explanatory variable, a factor that is considered to have a determining influence over the direction that the future will take. Clearly, the concept is not exclusive to the scenario analysis literature, but is relevant in other research contexts where explanation is a desired goal. The British Department for International Development (DFID) has, for instance, recently introduced a "drivers of change" approach to guide its country-level development assistance programming.

As Warrener writes, DFID's approach focuses on *"understanding* how change occurs *within specific contexts"* and also reflects *"the application of political economy analysis to formulation of donor strategy and implementation"* (2004, 1, emphasis in original). The DFID "drivers of change" approach seeks to identify factors that shape development prospects that fit into three main categories: structural factors that include historical, geographical, and demographic forces, institutional factors that principally relate to the rules that structure political and economic organization, and factors that focus on the qualities of economic and political actors.

The drivers of change that DFID has proposed are similar to the range of potential driving forces listed by Ralston / Wilson (2006). They outline a set of categories of potential drivers to consider that includes demographic patterns, social factors such as values and consumer preferences, general economic conditions, factors relating to the nature of government and regulation in a given context, technological forces, and international influences.

The phase of the scenario building process that focuses on the identification of key influences on the outcome of interest also involves an assessment of how the variety of factors relate to one another, with the prioritization of particular forces over others as an ultimate goal. As noted above, such an analysis may be aided by the techniques of influence analysis (see Kosow/ Gaßner 2008), or through the construction of a visual influence diagram that maps out the direction and quality of the influence of particular variables on others being considered (van der Heijden 2005). In the intuitive logics school, the process of identifying and weighing the importance of driving forces is ultimately a subjective matter, but this process often draws on expert opinion and deliberation on prioritization in a group setting.

Many scenario analysts emphasize that it is important at this stage to not only assess the relative importance of driving forces, but also to isolate which factors seem to be surrounded by the highest degree of uncertainty. According to Porter (1985), it is useful for a scenario analyst to distinguish between three key types of variables that affect the outcome being analyzed. These categories relate to whether factors can be considered to be constant, predetermined, or uncertain.

Constant factors are those that are unlikely to change at all, while predetermined factors can change, but are likely to change in predictable ways. Uncertain factors are characterized by a lack of clarity about the direction in which they will evolve in the future. As Porter (1985) argues, it may be useful at this stage to attempt to distinguish between independent uncertainties, elements of the external environment that do not seem to be influenced by other uncertainties, and dependent uncertainties, factors that display uncertainty because they are influenced by the independent uncertainties.

The separation of uncertain factors from predetermined and constant factors is a central element of the scenario approach. In Kahn's early work on the scenario method, certain types of variables were considered to be more generally stable than others. Geographical, cultural, and institutional fac-

tors were understood to be relatively fixed, while demographic factors were likely to change only slowly. War, natural disasters, and international variables were considered to be larger unknowns (Aligica 2004).

In the course of preparing a list of drivers of change, scenario builders are encouraged to focus on the factors that can be characterized as both important and uncertain (Mercer 1995). On the one hand, scenario analysts should strive to isolate which drivers should have the strongest influence over the outcome of interest. On the other, they need to focus attention on the factors that are the least predictable, since the identification of such factors will enable the scenario builder to develop scenarios that display a wide range of variation. Scenario analysts may find it helpful to create a basic table that maps driving forces according to the degree of uncertainty on one dimension from low to medium to high and the level of impact (low, medium, or high) on the other at this stage (Wilson 1998).

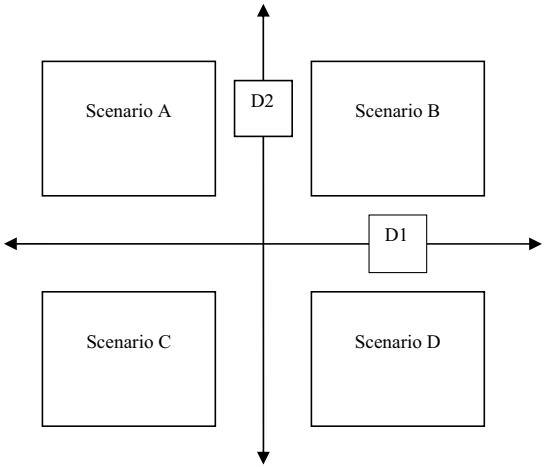
Step 5: Determining scenario logics

As Schwartz (1996) emphasizes, the selection of too many drivers and the identification of too many elements of uncertainty can make a scenario building process unwieldy, hence it is necessary that the scenario builder limit the choice of key dimensions of uncertainty in order to produce pictures of the future that provide their intended audience with a clear sense of the scope of possible outcomes. One tool for ensuring that the scenarios are both reflective of central elements of variation and easily presentable is the development of a scenario matrix.

A scenario matrix has the same function as a two-by-two table that indicates that the important variation in outcomes can be summarized by drawing attention to the variation through time of two key variables of interest. In Figure 2 below, the axes of a standard representation of a scenario matrix are identified with the labels D1 and D2, reflecting the two drivers of change that have been identified as the most important and most uncertain. The ends of each axis represent extreme values of the central drivers. As the figure suggests, the construction of such a matrix allows a researcher to outline four basic scenarios that can easily be distinguished from one another.

A classical example of a scenario axis is the one presented by Wack (1985b) that was developed in the period when Shell France first began to use scenario analysis techniques. The scenario team identified uncertainties in the business environment of the energy provider that related on the one hand to

Figure 1.2: The scenario matrix



the nature of the regulatory climate that energy companies would be subject to and on the other hand to the nature of competition in the energy market from alternative energy sources, namely natural gas. Hence, a scenario matrix could be plotted where one dimension represented the extremes from low to high availability of natural gas and another reflected a continuum going from a continuation of the dirigisme characteristic of French regulatory policy at the time to the liberalization that would likely be favoured to bring France in line with the regulatory approach of the European Community.

A scenario exercise carried out in connection with the European Development Cooperation (EDC) to 2010 research program provides another example of the types of variables that can be juxtaposed on the axes of a scenario matrix. Addressing the question of how EU development policy could evolve in the future, the EDC 2010 researchers identified one axis of uncertainty that reflected whether EU member states and the Commission would move in the direction of more or less coherence and coordination in their own policy choices and a second axis that related to the degree to which European actors would adopt a stronger or weaker poverty reduction focus in the future (Maxwell / Engel et al. 2003).

The construction of a scenario matrix, like the selection of the driving forces that provide the basic foundation for the scenario logics, may draw on a deductive process guided by theory. As Nordfors (2006) indicates, for example, prominent theories of international relations, while often positing that world politics will evolve in a particular direction, can serve as a basis for outlining a continuum along axes in a scenario matrix. From the globalization literature one could for example suggest that one axis for understanding future developments in world politics could be bounded at one end by a situation where nation-states maintain dominance in the management of economic relations and at the other by a logic where private actors and market forces are dominant.

In a recent paper considering the role that large developing countries might play in reshaping international relations toward the year 2030, Phillips (2008) also provides an example of how theory can offer a basis for developing alternative visions of the future. Though the paper focuses on a single possible future and does not invoke a scenario matrix, multiple possible futures of international relations can be contemplated on the basis of the key variables that Phillips's analysis highlights.

Phillips indicates that two main forces that may shape how the future of international relations could evolve relate to the nature of the distribution of power in the international system on the one hand and the nature of interdependence and cooperation among states on the other. These are classical preoccupations in international relations theory, and can be used as a basis for a scenario matrix. While Phillips emphasizes the possible future characterized by a non-conflictual multipolar order, where international institutions and substantial economic ties offset the potential for instability and conflict owing to the rise of new power centres in the international system, the possibility of a conflictual multipolar order where institutional institutions are weaker is also implied by this analysis.

As Schwartz and Ogilvy (1998) note, an alternative to determining scenario logics with the aid of a scenario matrix is to arrive at possible scenario plots through what they label an inductive process. One variant of this alternative approach involves thinking about "significant events" in the future and then developing a storyline that identifies the chain of events that would produce these outcomes.

Another variant takes as its starting point the elaboration of "the official future" of the scenario user, which reflects a standard view within an organi-

zation about how the future will unfold. Schwartz and Ogilvy characterize the official future as *"an unsurprising and relatively nonthreatening scenario, featuring no discontinuous changes to current trends, no crises, and continued stable growth"* (1998, 62). The consideration of what forces underlie a continuation of the status quo might serve as a basis for developing scenarios that are fundamentally different, as scenario builders can then consider how the future would unfold if the driving forces evolve in a direction other than the one expected in the "official future".

Step 6: Constructing narratives

The matrix approach is also advantageous because it effectively establishes a limit for how many scenarios can be generated. It provides a foundation for constructing four scenarios that in van der Heijden's view are *"as different from each other as possible within the limits of credibility to the scenario user"* (2005, 247). Wack (1985a) cautions against developing more than four scenarios if the goal of the scenario building enterprise is to inform decision making, suggesting that three scenarios are ideal. Departing from the logic of the matrix, these three scenarios could include one "surprise-free" scenario and two others that reflect fundamentally different pictures of how critical uncertainties could play out. Ralston and Wilson (2006) favour four over three, noting that with three scenarios there may be a tendency to see the middle route as the most probable future, where the alternative futures concept generally seeks to present all scenarios as equally plausible.

At this stage of the scenario building process, the emphasis turns to fleshing out storylines that will trace the development of a particular phenomenon from the near future to a more distant time horizon. Whether a scenario builder or a scenario team has used a scenario matrix to frame a scenario plot or taken the "official future" as the baseline for developing scenario logics, the previous step leaves unfinished the narrative that makes a scenario more than just a static snapshot of an alternative future. Nordfors (2006) underlines the analytical value of a narrative by referencing its central place in the field of History. Nordfors writes that: *"the narrative is an extremely efficient way of creating insight into complex matters and processes. You seldom have to tell the whole story in order to gain an understanding: a good narrative is open-ended and new snippets of information can easily be inserted into the plot as they surface"* (2006, 312).

The process of constructing narratives ultimately requires a good deal of creativity, but the scenario analysis literature also provides some general guidelines about considerations scenario builders need to make in order to be convincing storytellers. Van der Heijden stresses the importance of anchoring a narrative in the past and ensuring that it can be *"appreciated as one whole rather than as disconnected parts"* (2005, 258). Alternative narratives produced in the scenario building process have a common starting point in what is already known about the context being described. Due to this common starting point, scenario builders should avoid introducing fundamental differences in the narratives in the earliest time period of the account of future events. Paying attention to the contextual backdrop for a narrative can serve not only to make storylines more believable but can also focus attention on interaction effects between key drivers of change and other factors.

Even as the alternative narratives are designed to illustrate divergent trajectories of how a particular phenomenon may develop through time, Ralston and Wilson (2006) emphasize that there will also be commonalities across the scenarios that relate to the presence of the constant or predetermined elements that have been discussed above, and these commonalities should ideally be incorporated into the narratives.

Ralston and Wilson also highlight the utility of introducing change agents into the plot lines and writing stories in the present tense. While scenarios themselves are understood to be hypothetical futures, removing uncertainty in the author's voice can aid the scenario user in accepting the possibility that each alternative will materialize. Finally, these narratives can be produced in various forms. Scenario authors may choose to present a retrospective account of how a given future came to pass from the standpoint of an observer commenting on these developments at the end of the time horizon under consideration. Such an account may for example take the form of a speech delivered by a political figure or a media report.

One challenge that a scenario builder is likely to face in the narrative writing process is to determine what level of detail to convey. On this point, Shell's scenario experts underline that scenario builders *"need to make sure that the scenarios raise issues that are relevant to their recipients and challenge them to think about the future in a constructive and helpful fashion. But this does not mean that they must provide very detailed descriptions of events and their timing. Indeed, such precise details can seem misleading-*

ly like predictions" (Shell International 2003, 56). While a narrative painted too broadly may invite scepticism about the substance of the scenario building exercise, too refined a treatment of how the future will unfold risks restricting the space for interpretation for the end user of a scenario exercise, so a scenario builder must find a middle ground between these extremes in assembling the narrative.

Steps 7 and 8: Evaluating the implications of scenarios and monitoring

The final component of the intuitive logics method is to feed the scenarios back into decision-making processes within an organization to evaluate what improvements in strategy might be suggested by the alternative futures presented. As Wilson (1998) indicates, decision makers can assess the implications of scenarios for the organizations in multiple ways. One alternative is to examine scenarios individually in terms of the opportunities and threats that they present for the organization and to consider the extent to which the organization is prepared to deal with these threats.

A second means of feeding scenarios back into the decision-making process is to examine the organization's current strategy and evaluate how well it performs in the different contexts that the scenarios describe. This approach encourages reflection on the adaptability of an existing strategy to changing circumstances. Alternatively, scenario users might consider whether alternative strategies exist that would better be able to help the organization deal with challenges identified through the evaluation of the flexibility of existing approaches. This stage of the scenario process can be likened to "rehearsing the future", where decision makers can explore how they would need to react in a variety of circumstances. This step may therefore promote organizational learning (Ralston / Wilson 1998).

Another variant on using scenarios to deliberate on organizational priorities would be for an organization to orient strategy by focusing on the possible developments identified in the scenarios that the organization may be especially interested in working toward or on the negative developments that the organization should work to avoid.

Apart from deliberating on the appropriateness of particular strategies given alternative possible futures, scenario users may at this end stage also develop measures that would indicate whether a given scenario seems to be playing out or not so that decisions that are informed by a scenario exercise can be re-evaluated in light of unfolding developments (Schwartz 1996). It

is important to note that these final steps that are referenced in the intuitive logics literature relate to scenario analysis that is conducted with an explicit planning orientation. Scenario building by itself does not produce strategic recommendations, while scenario planning implies a process of integrating the results of a scenario building exercise into deliberations on organizational strategy.

1.6 Evaluation of scenario methods

While the literature referenced above provides a good roadmap for carrying out a scenario analysis project, this literature provides little information that demonstrates how the application of scenario methods has helped organizations to anticipate challenges and better adapt to a changing context. The incorporation of scenario analysis techniques into the planning portfolios of many corporations provides an indication that scenario methods are considered to be effective at accomplishing their goals, yet as Chermack (2007) suggests, general appraisals of the utility of scenario methods have been limited. He notes that *"scenario planning has been in use for several decades yet there is little empirical research to refute, support, or explain the effectiveness of the process"* (2007, 2). In a document produced in conjunction with a recent review of methods of scenario analysis in use in Africa, scenario builders from Oxford's James Madison Institute and the World Economic Forum present a similar criticism of the state of the field. They note that:

> *"scenario practice is generally a fuzzy field, characterized, on the one hand, by persistence, and recently renewed popularity, and on the other hand by methodological confusion and a lack of well-grounded theory. Despite the increasing wealth in scenario practice, there is a poverty of understanding about what works for what purpose, when and why – and when/why not"*(Wilkinson et al. 2008).

One seeming exception to the overall lack of assessment of the performance of scenario methods is a synthesis study prepared for the European Environmental Agency by Greeuw et al. (2000) that evaluated 40 scenario exercises relevant to European environmental policymaking. These authors also underlined several points of weakness in how scenario methods have generally been applied, noting that common scenario analysis shortcomings

have included the inadequate differentiation among scenarios, the limited integration of unexpected occurrences into storylines, and the presentation of overly vague policy recommendations. In addition, Greeuw et al. suggest that many scenario analyses have not sufficiently allowed for the inclusion of multiple perspectives.

Even strong proponents of the scenario method acknowledge that the effectiveness of scenario techniques in contributing to innovative thinking may be dependent on the disposition of the decision makers that are the potential end users of a given effort at scenario analysis. Using Shell's improved understanding of the evolving world oil market in the 1970s as an example, van der Heijden remarks that: "*the criterion for success of such a scenario-based planning activity is not the insight alone, but whether this was internalized sufficiently in the organization through an appropriate scenario process, such that it led to action in response to the new perception"* (2005, 140). Yet if scenario techniques only work well in the presence of decision makers who display openness to incorporating insights gained from a scenario exercise, this raises a question about whether such success is simply reflective of a pre-existing disposition to incorporate innovating thinking into organizational strategy rather than unique contributions of scenario methods in their own right.

The difficulty in assessing the utility of scenario approaches may stem partly from the limited truth claims they propose, which distinguishes scenario techniques from positivistic methods of analysis that place greater emphasis on proving or disproving theoretical claims. Indeed, the goals that scenario analysis aims to achieve may be somewhat modest. Scenario building success might be measured by the degree to which a given set of scenarios opens a dialogue about future priorities for an organization rather than by the nature and long-term effectiveness of the strategy that emerges from a scenario process itself. This paper has already stressed that many scenario practitioners are aware of the limitations of scenario methods. Attempting to paint pictures of what the future could look like is a fundamentally different exercise than delivering a clear prognosis of what will happen, and scenario analysts recognize that uncertainty remains even when multiple futures are mapped out.

While it may be difficult to determine whether scenarios have had intended effects of generating dialogue and providing an impetus for the discovery of innovative solutions to future challenges, scenarios that are generat-

ed can be assessed on their own merits by evaluation criteria that are similar to those used to evaluate other types of research. As Kosow and Gaßner (2008) note, scenarios can be judged by measures of plausibility, consistency, traceability and transparency, and the extent to which they present differentiated visions of the future.

This list of criteria invites another comparison between theory construction and scenario building. Internal and external consistency, respectively referring to the absence of contradictory elements and coherence with theoretical work in similar areas of inquiry, are considered to be desirable qualities for theories as well (Bunge 1998). The transparency criterion highlights the importance of outlining how data are collected and analysed, so that even if the reproducibility of the findings is not desired, external observers can still judge the validity of the findings by evaluating the process through which findings are produced. The goal of transparency in the research process is by no means unique to scenario methods; it is a desideratum across varied research approaches.

1.7 Examples of scenario-building exercises

The following section provides an overview of studies that have incorporated scenario analysis methods in order to further evaluate standard practice in the field of scenario development. It pays particular attention to studies that can inform the project examining how the global development landscape could change toward the year 2030. The studies referenced below have been selected primarily due to their thematic emphases, which relate broadly to the global security context, the future of the global economy, and the future of the global environment. At the end of this section, applications of scenario analysis in the field of development policy will also be outlined. In outlining these examples of scenario analysis in practice, attention will be given to the methods employed and the purposes for which these research projects were carried out.

1.7.1 Scenarios and security analysis

The application of scenario techniques in the area of defence planning follows from the general risk assessment and risk management benefits that scenarios can provide. Military forces are complex organizations that require a long lead time to reform their personnel structures and to develop

and integrate new material capabilities into their operations. Scenario analysis has been integrated into the planning portfolios of defence agencies and the research institutions that support them in order to provide clues about how the global context they will have to confront in the future could evolve.

One example of the use of scenarios in security planning comes from the United States Air Force, which as part of broader reflections on the need to understand how to transform the US military in the post-Cold War era undertook an exercise called "Air Force 2025" that was launched in 1994. The goal of this project was to think about how the US Air Force could maintain its international dominance given the potential for manifold changes in the international system and within the United States (Engelbrecht et al. 1996).

The starting point for the Air Force 2025 scenario exercise was background research consisting of familiarization with scientific studies in areas relevant to the research focus and existing work by futurists on the subject as well as basic exploration of a broad range of current trends, including projected developments in technology, medicine, international relations, and economic and environmental change. From this initial assessment, the researchers moved on to an analysis of key drivers of change.

The selection of drivers took place through a multi-stage process involving some 225 participants. These participants were initially divided into 14 different groups where potential drivers were generated with the aid of multiple techniques including topical research, expert interviewing, and brainstorming. The list of 100 possible drivers that emerged from this stage was then narrowed down through a second stage of discussion among representatives from each of the initial research groups, eventually focusing on three key drivers of change related to 1) the character of the US world view, 2) the nature of technological diffusion, and 3) the nature of the distribution of power in the international system (Engelbrecht et al. 1996). The central place of group deliberations in focusing attention on key drivers is consistent with the social orientation of many scenario exercises.

The emphasis on three key drivers of change provides a slight variation on the scenario matrix approach described in the presentation of the scenario construction above. By mapping out the range of the selected drivers, the Air Force researchers produced a three-dimensional scenario matrix, which

they labelled the "strategic planning space". One side of this box represented a continuum between a domestically and globally-oriented US worldview, another represented a continuum between a slowly evolving versus an exponentially changing technological context, and the third dimension reflected a continuum between concentrated and fragmented power in the international system. The combinations of these dimensions represented in the corners of the box provided a general outline for the main alternative futures that would be developed, and the research project proceeded to fill in story lines leading to these possible futures through the construction of "plausible histories". Plausible histories tie together a series of hypothetical events in order to make the postulated future believable (Engelbrecht et al. 1996). The storylines developed therefore have a retrospective quality anchored in a description of a hypothesized end state.

The report summarizing this scenario development project suggested that a primary contribution of the study was to provide a hypothetical testing ground for the introduction of new strategies. The reports' authors noted that: *"any set of systems, concepts, or technologies being considered by the US for security purposes can be evaluated for utility relative to the six alternative futures presented"* (Engelbrecht et al. 1996, 113). This point stresses that a completed scenario development project is often designed as a tool for further reflection and analysis rather than as a closed initiative that generates a list of precise recommendations for decision makers.

A more recent application of scenario techniques in the field of security analysis was carried out under the aegis of the National Intelligence Council (NIC) in the United States, a body designed to generate research to inform long-term strategic thinking in the American intelligence community. The research conducted by NIC had an exploratory emphasis and sought to identify future opportunities and challenges that might suggest the need for policy action by analysing how the global context could evolve toward the year 2020. The NIC 2020 project served as an extension of two research projects (*Global Trends 2010* and *Global Trends 2015*) which sought to map out emerging trends and to identify key drivers of change, and could be distinguished from these earlier forward-looking studies by its increased focus on scenario building (National Intelligence Council 2004).

As the broad nature of the project's guiding research question suggests, the scope of the research effort was wide-ranging. Although the summary report of the project does not outline the methods employed in great detail,

the report's authors indicate that a combination of trend analysis and scenario building was used to create the finished product.[4] A central feature of the research process was its highly participatory orientation. In the course of a year, more than 1000 individuals contributed to the project.[5] This wide participation was facilitated by the organization of numerous workshops and conferences in both Washington and across the world. These workshops and conferences were aimed at collecting a diversity of viewpoints about topics more focused than the global question orienting the study, including the politics of identity, biotechnology, and climate change. In addition, they were designed to collect perspectives from a variety of world regions in order to be able to better integrate insights about the challenges that emanate from these regions and to better understand how the United States was perceived abroad. The airing of expert opinion played a central role in the data collection process.

Rather than developing a set of scenarios around two or three key dimensions of uncertainty, the NIC project generated illustrative scenarios by focusing on the consequences of the progression of individual trends that provided the key scenario logics. One scenario emphasized the consequences of the continued progression of economic growth and Asian economic dynamism, while a second focused on the continued political dominance of the United States in a changing global power structure. The third scenario suggested a world where radical Islam experienced growth in regions disaffected by globalization processes in particular. A final scenario emphasized the prospects for the proliferation of weapons of mass destruction given the spread of communications technology (National Intelligence Council 2004).

---

4 The project drew inspiration from an ongoing research program at the Development Concepts and Doctrine Center (DCDC) affiliated with the British Ministry of Defence. The focus of the DCDC Global Strategic Trends Program is to outline how individual trends across a range of categories (for example relating to demographic change, resource use, the development of science and technology, and military conflict) could develop in coming decades. The discussion of unfolding trends suggests particular challenges and the project also examines the implications of individual trends for defence policy. More information about the Strategic Trends project can be found at the following website: http://www.dcdc-strategictrends.org.uk/home.aspx.

5 Please see http://www.dni.gov/nic/NIC_2020_project.html for more information about this project.

A problematic feature of these scenarios is that because the reports' authors are not careful to distinguish the dimensions along which the scenarios will differ, it is unclear whether each of these images of the future is really structurally different from the others or whether they instead reflect different aspects of a fundamentally similar future. In terms of research output, the discussions of individual trends and the presentation of the results of the expert dialogues are likely more valuable than the individual scenarios. Oversimplified scenarios that reflect one dimension of global change may have a hard time delivering on the promise that scenarios will bring the attention to complex interaction effects and unpacking causal relationships that they are often lauded for. The potential for oversimplification may be especially great when scenario exercises aim to have a global scope.

These two illustrative examples of applications of scenario analysis to international security issues differ in their level of formalization, with the Air Force study presenting a more transparent account of how its scenarios were actually produced. Yet the NIC study makes the incorporation of divergent viewpoints a more explicit goal in comparison. Both studies underline that collective efforts are often a critical component of scenario work, whether such collaboration comes from individuals within the organization or through cooperation with partner institutions and external experts.

1.7.2 Scenario building and the future of the world economy

Scenario methods have been widely applied by corporations seeking to better understand how their business environments may evolve. While the scenarios developed within corporations often have an industry-specific focus – Porter (1985), for example, provides an illustration of the use of scenario techniques to assess the future competitive environment for chain saw producers – for corporations with multidimensional business operations, complex production processes, and markets that transcend national borders, scenario projects that paint a picture of broad trends in the global economy may be a useful tool for evaluating their global business strategies. This section highlights two main types of scenario building endeavours that focus on how the international economic context will evolve: those that cast a wide net to look at the evolution of forces in the global economy as a whole and those that adopt a regional focus to explore the dynamics of change in the world's major economic power centres.

An obvious reference point for scenarios that are global in scope and that have an economic focus are the global scenarios that Shell has generated. Shell undertakes a global scenario building project once every three years to assist its management in assessing risks and opportunities in the global business environment (Shell International 2003). The scenario development process is lengthy. According to a guide to scenario development published by Shell International (2003), its 2001 global scenarios emerged after more than a year of research and focused scenario building workshops. Contributors to the scenario development process included a 15 member core team, 15 additional team members that acted as liaisons with key business divisions, and some 200 specialists that made topical contributions on a short-term basis.

The scenario development process within Shell progresses from an initial stage of information gathering and interviewing within the organization to identify central areas of concern and research gaps to an orientation workshop designed to synthesize the material collected in the initial phase and to outline key uncertainties emerging from existing data collection efforts. A multi-day scenario building workshop that produces sketches of central scenario logics follows, and this workshop is succeeded in turn by an "affirmation workshop", the goal of which is for the scenario team to critically review polished narratives according to criteria of plausibility, relevance, and internal consistency.

The institutionalization of scenario building as a planning tool within Shell means that each scenario exercise builds on previous organizational experiences. As the years go by, the general scenario logics that have been produced in earlier rounds of scenario development can inform the frameworks that guide subsequent global scenario projects. Summaries of Shell's global scenario initiatives from 1992 onward are available online and make it possible to trace revisions to scenario logics in fresh scenario building work.[6]

The 1992 global scenario project took as its frame of reference a contemporary trend toward growing political and economic liberalization around

6 Shell's global scenarios can be found at the following web address: http://www.shell.com/home/content/aboutshell/our_strategy/shell_global_scenarios/previous_scenarios/previous_scenarios_30102006.html.

the world and produced two alternative pictures of how the world would develop toward the year 2020. One possible future, described in the scenario labelled "New Frontiers" was characterized by the widespread embrace of globalization processes, which would lead to a redistribution of wealth in favour of poorer countries and a restructuring of the global division of labour. The scenario also posits that in response to mounting environmental challenges produced by sustained global economic growth, states respond by getting involved in more multilateral initiatives. If this first scenario might be considered to be an expression of pro-globalization discourse, the second scenario suggests that the consequences of initial movement toward greater global liberalization may actually be negative. In this scenario, labelled "Barricades," resistance to globalization processes leads to a reinforcement of cultural identities and a determination to preserve national systems of economic organization. The world as a whole is characterized by deeper divisions among countries and rising conflict (Shell International 1993).

One of the questions this first Shell scenario example raises is the contribution that theory might be able to make to scenario development, since the alternative futures presented in the 1992 global scenarios reflect differing outcomes related to central theoretical preoccupations in the field of International Political Economy. These questions include the consideration of how national autonomy can be maintained in the face of market integration and what the distributional implications of changing economic conditions might be.

The 1995 iteration of Shell's global scenarios project adopted a stronger position on the dominance of liberalization as a force shaping the world economy. The scenarios in this round were based on the claim that global actors had recognized that "There Is No Alternative" (TINA) to globalization. The alternative futures were then distinguished by how actors would harness globalization processes to their benefit.

One scenario postulated a dominant model of societies with flexible regulatory systems giving precedence to private actors in managing economic affairs, while an alternative scenario identified leading beneficiaries of globalization as societies where social cohesion attributable both to government intervention designed to steer the economy and society in the right direction and the presence of informal social networks generate efficient economic outcomes (Shell International 1996). One might question

whether these scenarios offer an expanded mental map of the world or whether they instead recapitulate commonly held beliefs in the contemporary context in which they were created, since the alternative views might be considered to correspond to the American model of economic management on the one hand and an Asian model on the other. Similar themes relating to the relationships between social cohesion, market efficiency, and regulation, and the nature of the relationships between different types of political and economic actors have also been emphasized in Shell's more recent global scenarios (Shell International 2002; 2005).

This discussion of the central orienting frameworks of Shell's global scenarios glosses over the detailed research process that contributes to the preparation of simplified summary narratives. To craft a compelling global story, some attention must be given, for example, to the dynamics of change across world regions. The development of country and region-specific scenarios may therefore accompany the process of developing global scenarios.

The limitation of a scenario exercise to a particular geographical region carries obvious benefits in terms of making the analysis more tractable and context-specific. As part of its work on identifying future global challenges, the World Economic Forum has conducted several regionally-specific scenario analyses in recent years.[7] These scenario exercises follow the intuitive logics approach and are developed with reliance on extensive interviews and stakeholder workshops. The scenario exercises carried out by the World Economic Forum have focused on rising power centres in the world economy and include treatments of possible development trajectories of China, India, and Russia. The Forum has also undertaken studies that have thematic rather than geographic emphases, including one project examining how technology and innovation could transform access to and provision of financial services and an ongoing project investigating the future of the financial services industry. Key elements of the scenario studies on the future of India and China are briefly outlined below, given the prominent place of these countries in discussions about what the future of the developing world will look like.

---

7 More information about the scenario building work of the World Economic Forum can be found at the following web address: http://www.weforum.org/en/initiatives/Scenarios/index.htm.

The Forum's scenario project on the future of India was conducted over a period of sixteen months and included input from some 100 individuals from the private sector, government, and academia. The scenarios evolved from the consideration of two main questions: first, how would the quality of India's engagement with the world affect its own interests, and second, how might internal development processes be managed. The scenario builders generated a matrix where one dimension reflected extremes between active engagement with the international community and an inward-looking orientation and another dimension represented the possibilities of growth that would be exclusive with respect to the nature of the benefits distributed to society or domestic growth that would be more broad-based and inclusive. Three scenarios were produced to reflect possible combinations of these dimensions, leaving a fourth matrix-implied possibility (inclusive growth and international isolation) out of the final product (WEF 2005).

One instructive feature of the scenario reports produced by the World Economic Forum is the structure that is imposed on the finished narratives. The discussion of India's evolution over the period 2005–2025 is divided into four five-year time periods. While the indication of particular occurrences in specific years also punctuate the narratives, the five-year increments allow the scenario builder to chart changes through time without laying out an overly specific (and perhaps more unbelievable) chronology.

In the scenario labelled "Bolly World", which describes a future vision of India that is internationally engaged but domestically divided along economic lines, the scenario writers depict an evolution that begins with a period (2005–2010) of increased foreign investment in knowledge-intensive industries that leads to domestic resources being channelled to areas that are attractive internationally. In the following period (2010–2015), domestic fissures resulting from inadequate investments in areas such as social infrastructure and rural development become evident and a divide between rural and urban areas in India is reinforced. Triggered by a global economic downturn, the next short period (2015–2020) is characterized by a contraction in the nature of international investment that has been facilitated by a narrow governmental vision that has hindered economic reform and left persisting social problems unaddressed. In the final period (2020–2025), India's economic problems continue, in a manner consistent with the developments described in the prior periods.

The summaries of development trajectories that emerge from these narratives condense complex processes into relatively simple storylines. Yet scenarios may be deceptively simple research products. Behind the story presented above, for example, the authors are building on explorations of the distributional effects of foreign direct investment patterns, the links between public investment, social welfare, and inequality, and the dynamics of migration, among other issues.

The scenarios developed by the World Economic Forum might be useful for both governmental actors interested in thinking about what future challenges they may encounter and business leaders trying to anticipate how particular markets will evolve. Even if an organization has not participated in their elaboration, such scenarios may provide a lens for testing strategy toward these countries. A development agency might for instance be able to consider how to engage with India in the event that the country follows the hypothetical course toward sector-specific growth outlined in the above example.

Using externally-generated scenarios to support policy planning processes may also have drawbacks, however. The goals that inform the scenario building process will likely not be identical to the organization's goals and the scenarios may therefore be designed to inform decisions that differ from the central preoccupations of leaders within the organization. In addition, considering that the scenario development process itself may be beneficial in terms of stimulating innovative thinking, organizations that rely on second-hand scenarios may miss an opportunity to fundamentally challenge organizational mindsets.

The Forum's scenarios on the future of China also relied on consultations with more than 100 experts from the private sector, government, and the academic community. The nature of the matrix selected to organize the scenario project also reinforces the point that has been made about similarities between scenario building and theory construction. Along one dimension of the scenario matrix, the Forum's scenario team considered the shaping role of the nature of domestic institutional reform in China on its long-term economic prospects. Along the second dimension, the scenario builders highlighted the relevance of understanding how the quality of the international environment (i.e. whether it displays an inclusive or discriminatory attitude toward China) could influence the position of China in the world (WEF 2006). The matrix effectively represents a key area of exploration in the

field of International Political Economy, namely the examination of the intersection between domestic politics and international relations.

While the China scenarios may also be instructive for governmental officials or private sector actors for purposes of exploring strategy in the face of possible challenges, one of the useful points made in the scenario report that has not yet been referenced in this overview of scenario techniques is that so-called "wild card" events may be introduced into scenario exercises in order to integrate discontinuities more directly into the narrative and to introduce additional stress into the picture with the goal of encouraging reflection on more robust strategies. Wild cards are unlikely events that might have significant consequences. Examples include natural catastrophes, financial crises, or epidemics (WEF 2006).

1.7.3 Scenario analysis and the gobal environment

As noted earlier in this study, the environmental field represents another area where scenario analysis has been widely used. While the technique has been employed for environmental impact assessments at the local level, scenarios have also been used to explore the potential consequences of global environmental change. The most prominent application of scenarios in the global environmental field has been in the climate change issue area, where the Intergovernmental Panel on Climate Change (IPCC), through its Task Group on Data and Scenario Support for Impact and Climate Analysis, has served as a repository for information for building climate scenarios.[8]

In addition to providing guidelines for climate modelling, the Task Force is a source for climate data and data on driving forces including socioeconomic factors. Although the climate scenarios constructed by the IPCC have a basis in narratives that explain linkages between factors such as demography, socio-economic conditions, and technological change on carbon emissions, these scenarios, and the climate scenarios produced by researchers exploring the implications of climate change at a regional level, are elaborated primarily with the aid of quantitative modelling techniques.

8 Information about the Task Group is available at the following website: http://ipcc-wg1.ucar.edu/wg1/wg1_tgica.html.

In a process modelled on the IPCC's experiences, scenario analysis has also been integrated into the work of the Millennium Ecosystem Assessment, an initiative designed to examine the consequences of ecosystem change for human well-being and to improve the interface between scientific knowledge and policymaking on environmental issues.[9] In addition to outlining scenarios that highlight the relationships between ecosystem change and development, the research reports of the Millennium Ecosystem Assessment are also notable because they position this research effort in relation to existing scenario exercises in the environmental domain and offer a detailed overview of the methods used to construct their own scenarios.

In reviewing existing scenario work on the future of the global environment (including work done by the IPCC, the OECD, and the World Business Council for Sustainable Development), Millennium Assessment researchers note that there are important commonalities across these global scenario exercises.[10] These commonalities include the nature of the contours of finished scenarios themselves, which tend to identify possible futures characterized either by an increasing focus on sustainable policy choices, a slide toward environmental collapse and institutional failure, or a context where new values shaping development take shape. According to the Millennium Assessment scenario report, another common point is that these studies generally *"suggest that a global future that excessively relies on a 'market forces' vision of economic globalization and on the consumer society as a model for successful development would be a perilous basis for global development."*[11] This statement provides an interesting contrast to the global scenarios produced by Shell in the 1990s, which emphasized economic globalization as a positive force.

While different types of organizations may undertake scenario work to achieve a similar kind of understanding about how global systems could evolve in the future, their own organizational objectives are likely to colour

9 The homepage of the Millennium Assessment can be found at: http://www.millenniumassessment.org/en/index.aspx.

10 The discussion in this paragraph and in the paragraphs that follow draws on the Millennium Assessment's scenario report, available online at: http://www.millenniumassessment.org/en/Scenarios.aspx.

11 The selected quotation can be found on page 42 of the Millennium Assessment's scenario report.

how outcomes are depicted. It follows that even if scenarios produced across a variety of organizations highlight many of the same types of driving forces of global change, the utility of scenarios developed from one organizational standpoint may not be equally relevant for organizations that do not share its goals.

On the basis of a research process involving input from a variety of contributors through interviews, the formulation of qualitative narratives, and quantitative modelling, the Millennium Assessment produced four scenarios reflecting alternative possibilities for how ecosystems could change toward the year 2050. The scenarios were organized around two key axes of uncertainty, with one critical uncertainty representing the nature of international connectedness (a regionalized or globalized world), and another representing the quality of policy responses to environmental challenges (more or less active and anticipatory environmental management). Hence, the alternative futures follow the general outlines of a globally interconnected world without active policy responses to environmental change, a regionalized world with similarly reactive policy approaches, and worlds where local and global environmental management systems are more robust.

In assessing the lessons learned from this scenario analysis, the authors point to risks that exist in each of the scenarios to emphasize the tradeoffs that might be involved in moving in one direction or another with respect to environmental management. In addition to drawing attention to such tradeoffs, the Millennium Assessment report also suggests that part of its value to policymakers lies in identifying forces which seem to take on an irreversible quality (such as deforestation) across the various scenarios, and which may therefore demand more attention in policy discussions.

As with other scenario exercises, it is difficult to judge the effectiveness of the initiative described above without having information about how scenario end users have responded to the report's conclusions. The relative lack of monitoring of scenario impact in concrete examples of scenario construction referenced in the preceding pages highlights a critical challenge for scenario builders: namely, to demonstrate that these methods succeed in challenging mindsets, calling attention to new priorities, and contributing to the formulation of more robust strategies. While an argument for adopting a scenario approach can be made on the basis of the observation that numerous organizations have invested significant resources in carrying out such exercises, ultimately this argument by itself is not an entire-

ly compelling justification for encouraging other organizations to add scenario techniques to their planning portfolios.

1.8 Applications of scenario analysis in the development policy arena

Without evaluations of how scenarios have informed concrete policy choices, the assessment of the potential contribution of scenario analysis to development policymaking lies more in a conceptual review of the method's perceived advantages and in an overview of where organizations have invested resources in developing scenarios than in a summary of when scenarios have worked and when they have not. As the previous sections of this paper outline, there are numerous examples of applications of scenario analysis to areas of inquiry that have points in common with the development arena, and these examples help to identify the prospects for applying scenario techniques to assess global development challenges.

While the examples above focus on exploratory scenarios that address elements of the global system such as the global security context, the global economy, and the global environment that are relevant to understanding the context in which global development occurs, there are also examples of applications of scenario methods to questions that have a more explicit global development focus. These examples are discussed briefly below in order to outline the possible uses of scenario exercises in the development community.

1.8.1 Scenario-building as an instrument for country or regional-level dialogue

The openness to multiple perspectives that the scenario approach embodies suggests a compatibility with participatory approaches in development cooperation that seek to bring together multiple stakeholder groups to develop common strategies for addressing development goals. As the *Mont Fleur* example early in this study illustrated, because scenario exercises often aim to generate multiple plausible futures rather than a single vision of the future, they may promote dialogue, as individuals are allowed to explore how the future could develop independent of their own particular interests.

One initiative that fits with this participatory orientation of scenario analysis is the work carried out by the African Futures Institute to support the preparation of National Long-Term Prospective Studies (NLTPS) across the African continent. This program, initiated by the United Nations Development Program in 1992, has supported the completion of 25 long-term studies that have aimed to stimulate dialogue on how African countries can attain the short and medium-term development goals related to the Millennium Development Goals and individual Poverty Reduction Strategy Papers while promoting a long-term vision for the future of a given country.[12] Through its East African Scenarios Project, the Society for International Development (SID) has also sought to use the scenario approach to promote idea exchanges between non-governmental organizations, private sector representatives, and governmental actors. This ongoing initiative is designed to produce insight about emerging trends and drivers of change in the East African region, and also to contribute to reflection on the political future of the region as a whole.[13]

The future of Southern Africa has similarly been explored via scenario analysis. A project financed by the *Friedrich-Ebert-Stiftung* and carried out in partnership with the Johannesburg-based Institute for Global Dialogue over several years beginning in 1997 painted five different scenarios for how the future of the Southern African region could evolve toward the year 2020. The project was designed to examine the challenges that the South African Development Community in particular might face in trying to meet its objectives related to enhanced regional integration and economic development.

Following the approach outlined by Schwartz (1996), the project researchers outlined scenarios that highlighted prospects for a destabilized and unequal region with collapsed states on its fringes, the potential for private actors playing a dominant role in shaping patterns of economic activity and political outcomes, the possibility of a regional renaissance driven by good democratic leadership and prudent management of natural resource

12 A summary of the African Futures Institute's activities can be found at its homepage: http://www.africanfutures.org.

13 SID's East African Scenarios Project is briefly described in its Annual Report, available at: http://www.sidint.org/files/Annual_Report_2007.pdf.

wealth, the spectre of a slow return to authoritarian rule, and the prospect of a poor region that is nevertheless politically stable (IGD / FES 2004).

Each of the narratives presented in the scenario compendium was paired with a set of policy implications, however the policy recommendations that are listed are quite broad in nature. For instance, an implication drawn from the scenario pointing to the prospect of a destabilizing region is that regional conflict resolution mechanisms should be maintained. The concluding chapter of the book presenting these scenarios includes a paragraph evaluating the usefulness of the scenario exercises. The author notes that:

> *"…the test of our scenarios thus far is not whether any one of them is in the process of being realised. It is whether they are proving to have identified at least some of the key factors at work in the region; given some idea of how those factors and forces could play themselves out; and shown that they can help to inform decision-makers' perceptions of the region and its underlying dynamics."* (IGD / FES 2004, 132)

This statement underlines the limited goals that the scenario method often seeks to achieve. The long process that contributes to the formulation of scenarios may be viewed as a vehicle for generating discussion on challenges that lie ahead and to highlight the shortcomings of current political approaches to key issues. Steering a country or a region toward a desirable future or away from an undesirable one requires the enactment of concrete policy measures that may not be instantly at the disposal of policymakers on the completion of a scenario building initiative.

The limited detailed policy proposals that emerge from many scenario exercises may also stem from the broad reach of these projects rather than with an inability of the method to generate such recommendations. A scenario exercise that is global in scope, for instance, may naturally draw very broad conclusions, whereas a geographically and thematically focused exercise may be able to deliver more specific proposals.

1.8.2 Scenario building and strategic reflection in development aid organizations

The final illustration of a scenario exercise that this overview of scenario methods discusses is a scenario initiative conducted by a research team led by Enrique Rueda-Sabater in the World Bank's strategy group (Rueda-

Sabater et al. 2006).[14] The study was oriented around the following research question: "*what major changes in the world by 2020 could significantly reshape international development?"*(ibid., 3). In attempting to answer this question, the researchers adopted an exploratory approach to scenario development mirroring the global scenario projects applying the intuitive logics approach described above.

The research group's report includes four sections. The first section maps out key trends related to demography, the characteristics of the global economy, the state of the environment and natural resources, patterns in science and technology including trends in research and development, governance issues at global and national levels, and global security trends covering issues such as intrastate conflict, terrorism, and organized crime. These trends are listed because they are considered to be driving forces of global change. By outlining key aspects of these trends, researchers can begin to assess the importance and uncertainty associated with individual drivers.

The second section of the report presents the scenarios that are organized around three main dimensions of uncertainty. One dimension reflects alternative geopolitical dynamics, with possibilities ranging from a US or G-7 dominated world system, to a fragmented global system, to one where emerging powers play an increasingly influential role. A second dimension relates to the quality of economic growth (stagnation, uneven growth, or broad-based growth), while a third dimension reflects whether non-state actors play a weak, moderate, or strong role in fulfilling functions tradition-

14 It is interesting to note that while it is commonplace for the World Bank to issue a disclaimer that distinguishes work of Bank researchers from the views of the Bank, its disclaimer in the front of the summary of the Strategy Group's scenario initiative conveys an especially cautious tone with respect to how the report's findings should be used. The disclaimer notes that the publication: *"provides a structure for thinking about alternative futures, and the content is inherently and deliberately speculative. The stories and illustrative data in this publication are in no way intended to be predictive or to indicate likelihood of any future events. This material is, therefore, not intended to convey information, interpretations, or conclusions about the issues and countries mentioned herein. No conclusions or inferences drawn from the scenarios or from any other material in this publication should be attributed to the World Bank."* This statement highlights the central purpose of the scenario exercise, namely to stimulate discussion about the strategy in the face of a changing external environment. It is not designed as an initiative that produces hard predictions about the future.

ally associated with governments. These multiple dimensions generate possibilities for many scenarios, however for purposes of simplicity, three scenarios are developed in detail.

As with other examples of global scenario exercises, these dimensions relate to general theoretical preoccupations of researchers examining the global political economy. While the strategy group's report indicates that it does not consider scenarios to be theories because of their limited causal properties, the orienting dimensions of the scenario exercise nevertheless suggest an affinity between scenario construction and theory construction.

The third section of the *Rehearsing the Future* report assesses the implications of the scenario exercise for international development. While the scenarios themselves were designed to map out the context in which future development policy interventions would take place rather than how development assistance policy would evolve in its own right, the implications section considers this second question by focusing on the nature of the demand for aid and the nature of the supply of aid suggested by the various scenarios. These implications are summarized briefly below.

In the scenario labelled "Affluence Ltd." demand for development assistance is strongest in the so-called least-competitive countries that have not been able to harness forces of globalization in their favour, while aid provision, increasingly occurring through private channels or through sector-specific ministries rather than through more traditional bilateral aid agencies, focuses on goals related to the management of interdependence and addressing persistent development needs in the countries excluded from globalization's benefits. In the scenario named "Globalization Unwinding", aid flows decline in spite of the persistence of major challenges in many parts of the developing world, due to growing mistrust among nations and a shift in focus in aid provision away from development toward security and other political goals. The "Competing Horizons" scenario suggests a world where aid flows will rise due to the increasing prominence of non-traditional aid donors. The provision of aid in this scenario is however likely to follow commercial rather than development motives.

A final brief section of *Rehearsing the Future* discusses how organizations can incorporate the scenarios prepared by the strategy group or scenarios of their own making into a process of strategic reflection. At the core of such a process is the assessment of how the broad external conditions sketched

out in the scenarios will affect key clients of the organization as well as other actors that are operating in its environment. An organization might then further assess opportunities and risks that are implied by the scenarios and discuss the types of priorities that would need to be adopted in order for the organization to thrive in its future environment.

1.9 Conclusion

The study of the future is inherently difficult. Scenario analysis methods have been proposed as one means of dealing with the uncertainty that is pervasive in thinking about how things might change over the course of a long prospective time horizon. Scenario approaches highlight the value in developing multiple pictures of how the world could develop to cover the range of future possibilities. They build storylines on an existing knowledge base, but also aim to stimulate new insight on future challenges by incorporating a diversity of perspectives into the scenario building process. These basic characteristics of scenario analysis, the integration of a long time horizon and the commitment to recognizing the possibility that a multiplicity of described outcomes could materialize, are key elements that help to account for why scenario analysis has been used to support planning efforts in a variety of contexts.

The openness to multiple perspectives that is characteristic of well-executed scenario analysis can inform other research efforts, which might similarly benefit from casting a wide net among actors that have expertise in a particular area. In the development policy sphere, the discussion of directions for policy with representatives from civil society organizations, private industry, and government may not only help to identify innovative policy priorities, but also to place policies on a stronger political footing. Indeed, in some donor countries such multi-stakeholder dialogues are already institutionalized in the development assistance policymaking process.

Both the theoretical treatments of scenario analysis discussed above and the specific illustrations provided indicate that scenario analysis is well-suited to exploratory analysis. The discussion also emphasized that scenarios can be a useful tool for opening a reflection process within organizations. Yet there are clear limitations to scenario methods as well. Importantly, the actual impact of scenario exercises in enhancing decision-making processes

has not been well-demonstrated, even though such methods have been applied in a variety of organizational contexts over the past several decades.

The ability of a scenario exercise to contribute to the improvement of organizational strategy will likely also depend on the extent to which key decision makers within an organization are engaged in the scenario development process. This engagement can take various forms, from participating in interviews that help to define the decision focus of the exercise and identify key challenges in the external environment to direct involvement on the team that is primarily responsible for elaborating scenarios. Engagement at high levels within an organization signals a commitment to the effort to search for new ways of viewing the world that can help organization's identify emerging challenges. In contrast, if key decision makers are not involved in a scenario process, such an exercise may be less useful in changing existing perceptions.

In thinking about the place of scenario analysis as a tool for policy planning support, another key limitation is that the nature of recommendations that emerge from scenario building exercises may be quite broad. While the level of abstraction in policy recommendations that are produced may reflect the scope of the research question itself, meaning that scenario-building that is geographically and thematically limited in scope may generate more specific recommendations, the formulation of detailed policy actions is something that will require additional deliberation among policymakers themselves, who will be prodded to consider risks and opportunities in adopting a particular strategy in the context of the multiple scenarios they are offered. In short, scenario analysis is a tool for spurring strategic reflection more than an instrument for devising responses to future challenges in its own right.

Highlighting these limitations of the scenario approach is useful in adopting realistic expectations about what scenario building can accomplish. While the method may be helpful in encouraging long-term thinking within aid agencies, other research methods are likely to be better suited to delivering clear proposals on how to deal with a range of specific questions about the future of development policy. Case-study research on questions of institutional design may for example be better able to offer recommendations on how to reform development assistance policymaking structures and aid delivery systems, even if the value of alternative institutional setups can be evaluated in light of how well they might respond to challenges

raised by different scenarios of the future. Hence, rather than displacing other research methods in thinking about new directions for development policy, scenario analysis should be regarded as a supplement to these approaches, which may be valuable in producing knowledge that can be integrated into scenario analysis projects by themselves.

2 Scenario analysis and FDI flows to Africa

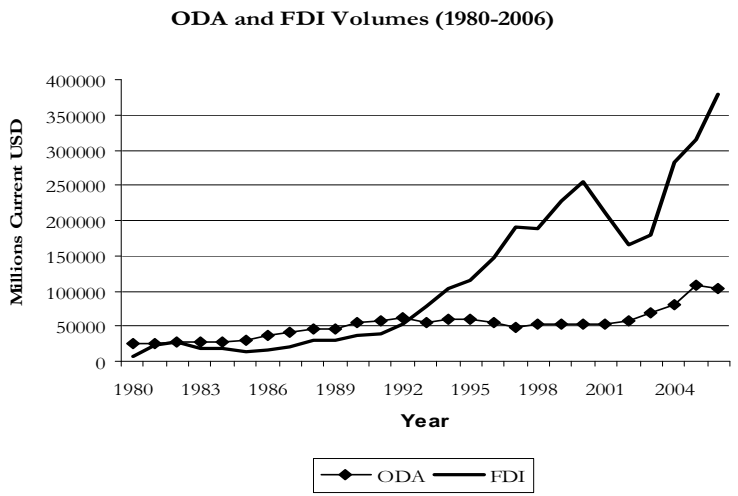
2.1 Introduction

This section of the study provides an illustration of scenario building by constructing four scenarios dealing with how patterns of foreign direct investment to Africa could evolve toward the year 2030 and what the potential development consequences of changes in this area might be.

The last two decades have witnessed a significant rise in direct investment in developing economies. As Figure 2.1 illustrates, the volume of direct investment in the developing world has outpaced official development assistance handsomely since the early 1990s and now eclipses development aid transfers by a wide margin. In 2006, direct investment in developing economies amounted to some US$ 379 billion, in comparison to US$ 105 billion in overseas assistance (OECD 2008; UNCTAD 2008a). In 2007, investment in the developing world reached a new high of US$ 500 billion, a 21 percent increase over the previous year (UNCTAD 2008e).

As the volume of direct investment has increased, the importance of mobilizing additional financial resources for development efforts through foreign direct investment has also gained an increasingly prominent place in international development discourse. In example, the Report of the International Conference on Financing for Development in Monterrey in 2002 listed measures to increase foreign direct investment and other private capital flows behind only domestic resource mobilization as a necessary step in achieving the Millennium Development Goals. This document encouraged developing countries to enhance efforts to increase their attractiveness to foreign investors and underlined the responsibility of developed countries to adopt measures to facilitate outward investment toward poor countries (UN 2002). In preparation for the Doha conference on financing for development, the United Nations has reiterated this call for greater investment, emphasizing the need to increase investment in Africa, in the world's least-

Figure 2.1: ODA and FDI volumes (1980–2006)*)



*) The figure highlights that while direct investment and aid flows toward developing economies were comparable in the 1980s, the volume of direct investment flows toward developing countries has significantly outdistanced aid flows since the early 1990s. The figures are listed in current dollars for purposes of consistency between the OECD aid and UNCTAD FDI figures.

Sources: OECD (2008); UNCTAD (2008a)

developed countries, and in countries facing particular disadvantages due to their geography in particular (UN 2008a).

Because the mobilization of private capital does not depend on a domestic budgetary process in donor countries where numerous interests must be accommodated, encouraging direct investment might be considered a convenient political alternative to relying on public channels of development financing. The growing scale of resource transfers to developing countries through private channels suggests that exploring how investment patterns could evolve in the coming decades will help to inform what types of priorities development assistance policy might need to incorporate in the future, since these private flows carry the potential to impact the quality of development processes, affect how resources are distributed among actors

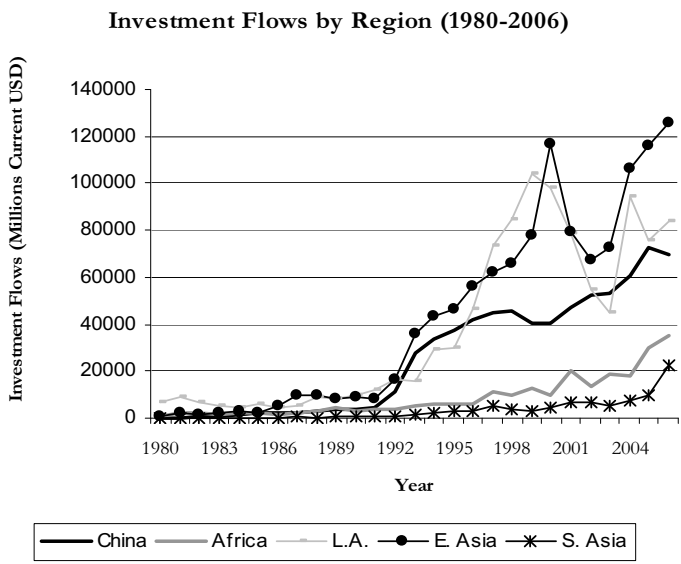
within economies, and influence the opportunities that are available to the individuals development assistance is intended to serve.

While overall volumes of foreign direct investment toward the developing world have expanded significantly in recent decades, this expansion has not affected all regions of the world equally. The emerging market economies of Asia and Latin America have been privileged recipients of foreign direct investment (FDI), while poorer economies around the world have been less attractive to foreign investors in comparison. Though investment in developing economies accounted for 27 percent of all foreign direct investment in 2006, for example, only .7 % of global investment was directed toward the world's least developed countries (LDCs) in that year (UNCTAD 2008b).

As figure 2.2 indicates, while most regions of the developing world received relatively little direct investment in the 1980s, the takeoff in direct investment in the 1990s was fuelled especially by a growing interest in China as an investment destination: in 1980, foreign investment in China amounted to US$ 57 million, but by 2006 it had approached US$ 70 billion. In contrast, investment on the African continent has lagged behind these increases. While investment in Africa totalled a little over US$ 400 million in 1980, it was about exactly half as significant as investment in China in 2006, amounting to some US$ 36 billion (UNCTAD 2007c). Even though investment in Africa has increased in recent years, the continent remains marginal as a destination for investment: between 2000 and 2006, the share of investment in Africa hovered around 3 % of global FDI flows (UNCTAD 2008d).

While Africa has traditionally received less investment than other regions of the developing world, exploring the future of investment on the African continent may be especially relevant for an exploration of the future of development policy for multiple reasons. Although donors have not always followed through on their aid commitments directed toward the African continent, they have nevertheless pledged in recent years to substantially increase their aid flows to Africa, including by calling for a doubling of aid toward 2010 (OECD / ADB 2008). This suggests that decisions about future development assistance priorities will increasingly be focused on African development issues.

Figure 2.2: Geographical distribution of FDI flows (1980–2006)*)



*) This figure charts the progression of FDI to Africa, Latin America, East Asia, and South Asia over the period 1980 to 2006. The volume of investment that China has attracted is listed separately in this chart, even though it is also included in the sum of investment toward East Asia.

Source: UNCTAD (2008a)

The increased attention to African development reflects the fact that the continent possesses the highest concentration of less-developed and low income countries in the world and is also considered to be the region of the world where the Millennium Development Goals will be the most difficult to achieve by 2015. The difficulty that Africa faces in achieving these goals is itself a reflection of the difficulties of meeting the development finance objectives outlined in the Monterrey Consensus, which involves mobilizing both additional public and private resources (UNECA 2008).

By focusing on the African continent as a whole, this exercise paints a broad picture of possible direct investment patterns that glosses over the specificities of individual African countries. Due to their distinct geogra-

phies, economic and political structures, and other distinguishing characteristics, there would naturally be large variations across the continent in terms of the range of scenarios for the future of direct investment if this study were confined to the country level. This study seeks to acknowledge relevant variations across the continent to the extent possible, but accepts a basic trade-off favouring generalization over attention to national variation that comes with the adoption of a regional focus.

To map out possible directions that investment in Africa might take over the next couple of decades, this analysis proceeds as follows. The first section provides an overview of FDI as a development instrument in order to offer a general starting point for how FDI can shape development prospects in the long term. The second section establishes a basis for scenario construction by mapping out recent economic trends in Africa and trends in FDI provision in particular. The third section of this paper explores likely driving forces of investment patterns by summarizing findings from the literature on the determinants of FDI flows. The section is followed by an assessment of driving factors that can be identified as critical uncertainties that can provide a basic framework for distinguishable narratives about the future. A final section presents scenarios for the future of investment in Africa based on combinations of these driving forces.

In the first part of this study, scenario analysis techniques were discussed in detail. One of the main points that the discussion revealed about scenario analysis in practice is that it often relies on multidisciplinary research teams that ensure that a variety of perspectives are represented in the scenario construction process. Collecting inputs in a scenario building process may be time-consuming, and scenario analysis can often take a minimum of several months to complete, though the duration of the process is likely to depend on the scope of the research question. The possibilities for casting a wide net in terms of gathering expert opinion for this scenario building effort are in contrast quite limited. While this application seeks to conform to the general process of scenario construction outlined in Part I of this study, the source of thinking about potential driving forces of future investment patterns largely stems from a review of existing theoretical and empirical work on FDI and development rather than from structured idea generation processes involving interviewing and group discussions. The present example may therefore be considered a test of the proposition that scenario construction can take cues from theory construction efforts and may serve

as an example of how scenarios can be constructed when a full-fledged scenario development process is not feasible.

2.2 Foreign direct investment as a development instrument

Foreign direct investment (FDI) refers to *"an investment involving a long-term relationship and reflecting a lasting interest and control by a resident entity in one economy…in an enterprise resident in an economy other than that of the foreign direct investor"* (UNCTAD 2007c, 245). Although FDI is generally an inter-firm activity, because state-controlled enterprises may also seek to invest abroad, it is not necessarily always a private one.

The long-term component of the above definition leads to one distinction between FDI and other sources of private capital: it is considered to be less volatile as a financing instrument than other private capital flows (Albuquerque 2003). In comparison to other private capital flows, then, the potential for FDI to make a lasting contribution to development processes should be greater. Indeed, numerous development benefits of FDI have been touted. The investments that foreign enterprises make in productive sectors of the economy potentially generate employment opportunities and income and contribute to an increased revenue base that a government can tap into to finance investments in public services. FDI is also thought to produce efficiency gains by stimulating competition and lowering prices for goods and services. In addition, FDI has the potential to produce positive spill-over effects in the local economy, for example by serving as a vehicle for the diffusion of managerial practices or innovative technologies (OECD 2002a; World Bank 2005).

In spite of these potential benefits, the effect of FDI on economic growth and development is not unambiguous. Because much investment comes through the acquisition of existing enterprises, direct investment may not always offer a stimulus for capital accumulation in the host economy, and possible spill-over effects may be curbed by firms' desire to protect trade secrets (UNCTAD 2005). Kosack and Tobin (2006) note that FDI may contribute to a decline in local entrepreneurial activity or a diminished tax base, depending on how a given government goes about attracting investment. Given the ambiguous nature of the relationship between FDI and development, Kosack and Tobin argue that it is necessary to examine both the type of FDI a country obtains and a government's capacity to absorb benefits

from these investments in evaluating the contribution of FDI to economic growth or human development (Kosack / Tobin 2006).

In exploring how FDI might change the development landscape in the future, it is therefore important to consider its composition and to understand its relationship to other factors in host countries that might be influential in shaping development outcomes. In other words, understanding the future development impact of FDI requires more than simply outlining whether investment will increase or decrease, since FDI can have both positive and negative effects and the context into which it is injected can also shape the nature of the impact of these investments.

2.3 Recent trends in investment in Africa

In order to have a basis for generating stories about how the future of investment on the African continent might unfold, it is first helpful to provide a descriptive overview of recent economic trends in Africa and trends in FDI provision in particular. The general economic prognosis for Africa as a whole has been positive in recent years. In its latest *African Economic Outlook*, the OECD reports that the African continent enjoyed a GDP growth rate of 5.7 % in 2007, continuing a trend in above-average growth over the last several years. Positive growth rates have characterized economic performance across African regions, though these high growth rates have been driven especially by rising commodities prices, which has benefited oil and mineral exporters in particular. African economic conditions have also been regarded as generally favourable due to improved macroeconomic management. Oil exporters have achieved significant budget surpluses, while countries across the continent have been credited with maintaining fiscal discipline (OECD / ADB 2008).

Notwithstanding the generally positive macroeconomic context, African countries currently face a broad variety of development challenges. The United Nations Economic Commission for Africa (UNECA) notes, for example, that rising inequality has accompanied the continent's high economic growth rates, suggesting that many disadvantaged groups have not benefited from this growth (UNECA 2008). Social development challenges remain great: all 22 countries placed in the category of "low human development" in the UNDP's most recent *Human Development Report* are located on the African continent (UNDP 2007). Progress toward achieving the Millennium Development Goals has been limited on many measures in

Sub-Saharan Africa: absolute poverty has increased, limited improvements have been registered in the areas of primary education, child and maternal health, and water quality, and the share of the region's population living with HIV/AIDS is the highest in the world (UN 2008b).

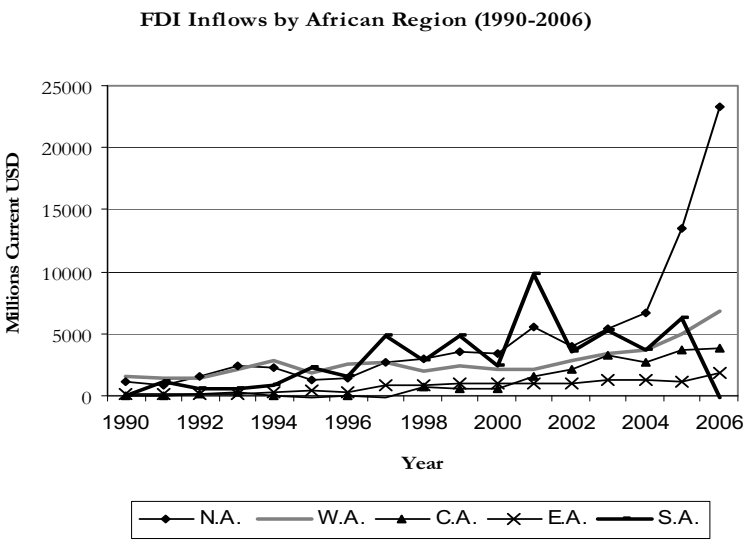
Against this backdrop, FDI toward Africa has nevertheless been trending upward in recent years, mirroring overall trends in economic performance. As Figure 2.3 demonstrates, there has been important variation on the continent with respect to where investment increases have been concentrated, however. North African countries have accounted for a comparatively large share of recent investment increases, almost doubling from around US$ 7 billion in 2004 to US$ 13.5 billion in 2005 and nearly doubling again between 2005 and 2006 to surpass US$ 23 billion in 2006. This sum represented about 65 percent of investment in Africa in that year (UNCTAD 2008b). Other regions have also experienced significant investment increases: between 2000 and 2006 inward FDI to West Africa increased from US$ 2.2 billion to US$ 6.8 billion, investment in Central Africa rose from US$ 552 million to US$ 3.8 billion, and investment in East Africa rose from US$ 1 billion to US$ 1.8 billion (UNCTAD 2008b).

Investment in Africa has also been marked by national and sectoral concentration. As tables 2.1 and 2.2 indicate, many of the same countries have figured among the leading recipients of FDI since 2000, while the list of states receiving the least investment also features recurring characters including several small island territories.

According to UNCTAD (2008d), the top ten recipients of FDI in 2006 welcomed approximately 90 percent of all FDI to Africa. Egypt, Nigeria, and South Africa are the continent's economic powerhouses and have also been its leading investment destinations. While countries such as Egypt and Morocco have attracted diversified investments, much of the recent growth in investment across the continent has been focused in the primary sector, particularly in investments related to extractive industries (UNCTAD 2007c). Because of the heavy resource-seeking orientation of recent investment inflows, questions can be raised about the positive nature of their developmental impact.

While resource-seeking investments can provide a source of government revenue, the capital-intensive quality of investments in extractive industries means that they are less likely to generate positive spillover effects with re-

Figure 2.3: FDI inflows by African region (1990–2006)*)



*) This chart highlights that a relatively large share of recent increases in investment toward Africa are accounted for by increased investment in North Africa. A positive trend is nevertheless visible across regions on the African continent. According to the figures presented here, Southern Africa is the only region that experienced a significant drop in investment toward the end of this period. The data presented here reflects net FDI inflows, and the drop in investment to Southern Africa is accounted for by large sell offs of foreign-owned oil assets in Angola at the end of the period. Southern Africa, and South Africa in particular, has also been an important destination for FDI.

Source: (UNCTAD 2008d)

spect to increasing local employment or generating linkages to local firms. Intensified mineral and oil extraction can also contribute to environmental degradation. Even the revenue that states potentially obtain from resource exploitation can be risky from a development perspective, as the availability of resource rents might distance political elites from taxpayers they might otherwise be interested in providing services for or lead them to neglect making productive investments in other sectors of the economy that would contribute to broad-based growth (UNCTAD 2007c).

Table 2.1: Leading African recipients of FDI (2000–2006)*)

	2000		2001		2002		2003		2004		2005		2006	
1	Nigeria	1,300	South Africa	6,788	Nigeria	2040	Angola	3,505	Egypt	2,157	South Africa	6,251	Egypt	10,043
2	Egypt	1,235	Morocco	2,874	Angola	1672	Morocco	2,429	Nigeria	2,127	Egypt	5,376	Nigeria	5,445
3	South Africa	887	Angola	2,146	Algeria	1065	Nigeria	2,171	Equatorial Guinea	1,651	Nigeria	3,403	Sudan	3,541
4	Angola	878	Nigeria	1,277	Chad	924	Equatorial Guinea	1,444	Sudan	1,511	Morocco	2,946	Tunisia	3,312
5	Tunisia	779	Algeria	1,196	Tunisia	821	Sudan	1,349	Angola	1,449	Sudan	2,305	Morocco	2,898
6	Morocco	471	Equatorial Guinea	941	South Africa	757	South Africa	734	Morocco	1,070	Equatorial Guinea	1,873	Algeria	1,795
7	Algeria	438	Sudan	574	Sudan	713	Chad	713	Algeria	882	Algeria	1,081	Libya	1,734
8	Sudan	392	Egypt	510	Egypt	647	Algeria	634	South Africa	800	Libya	1,038	Equatorial Guinea	1,656
9	Mauritius	266	Tunisia	486	Cameroon	602	Tunisia	584	Tunisia	639	Mauritania	864	Chad	700
10	Côte d'Ivoire	235	Chad	460	Morocco	534	Ethiopia	465	Ethiopia	545	Tunisia	782	Ghana	435

*) This table presents the top ten African recipients of direct investment in each year between 2000 and 2006. Figures on FDI inflows are presented in millions of current US dollars.

Source: UNCTAD (2008b)

Table 2.2: Bottom ten African recipients of FDI (2000–2006)*)

	2000		2001		2002		2003		2004		2005		2006	
1	Rwanda	8.1	Comoros	1.15	Djibouti	3.5	Rwanda	4.72	Rwanda	7.7	Comoros	1	Eritrea	3.7
2	Sao Tomé and Principe	3.8	Guinea-Bissau	.4	Sao Tomé and Principe	3.04	Guinea-Bissau	4.01	Guinea-Bissau	1.7	Burundi	.58	Comoros	.82
3	Djibouti	3.3	St. Helena	.23	Liberia	2.8	Zimbabwe	3.8	Comoros	.67	St. Helena	.18	Mayotte	0
4	Central African Republic	.8	Reunion	.21	Rwanda	2.6	Sao Tomé and Principe	.86	Burundi	.04	Mayotte	0	Reunion	0
5	Guinea-Bissau	.7	Somalia	.04	Niger	2.4	Comoros	.79	Mayotte	0	Sao Tomé and Principe	-.59	St. Helena	-.15
6	Somalia	.27	Mayotte	0	Comoros	.43	St. Helena	0	St. Helena	-.65	Eritrea	-3.02	Sao Tomé and Principe	-.43
7	Comoros	.09	Burundi	-.002	Somalia	.14	Mayotte	0	Sao Tomé and Principe	-1.56	Swaziland	-49.2	Mauritania	-3.44
8	Mayotte	.01	Mauritius	-27.7	Reunion	.1	Burundi	-.01	Somalia	-4.79	DRC	-78.64	Liberia	-81.74
9	St. Helena	-3.84	Gabon	-89	St. Helena	0	Somalia	-.85	Eritrea	-7.87	Liberia	-479.47	South Africa	-323.474
10	Gabon	-42.6	Libya	-113	Mayotte	0	Swaziland	-60.9	Congo	-13.06	Angola	-1,303.3	Angola	-1,140

*) This table lists the countries that have had the lowest net FDI inflows in recent years. Inflows are listed in millions current US dollars.
Source: UNCTAD (2008b)

In addition to considering which countries and regions on the African continent have been privileged destinations for FDI and identifying the sectoral emphasis of FDI to Africa, it is helpful to briefly make note of current trends in terms of where investment to Africa originates. Foreign investment in Africa has traditionally been dominated by firms headquartered in major industrialized countries. While data at a continental level on sources of investment is scarce, estimates available from UNCTAD indicate that in 2003, for instance, FDI stock in Africa held by enterprises from the United Kingdom amounted to some US$ 30 billion, American FDI stock totalled US$ 19 billion, and German, French, and Japanese investors followed with US$ 5.5 billion, US$ 4.4 billion, and US$ 2 billion in FDI stock respectively.[15] The combined sum of these investments was the equivalent of approximately 30 percent of African FDI stock in that year (UNCTAD 2006; 2008b).

One general trend in global direct investment patterns in recent years has been the growth of outward investment from developing countries, an increase that has contributed to a rise in South-South investment flows. Most South-South flows are intra-regional. In Africa, South African outward investment has for example represented an important source of capital for countries in its regional neighbourhood: South African investors have in recent years provided over half of the investment headed into neighbouring Botswana, Lesotho, and Swaziland (UNCTAD 2006). Africa has also become an increasingly important destination for investment from developing Asia. Between 2002 and 2004, FDI flows from developing Asia to Africa averaged US$ 1.2 billion per year, with Singapore, India, and Malaysia representing the leading Asian sources of investment.

While China's economic relations with Africa have recently attracted significant attention, Chinese FDI to Africa is both small in relation to overall Chinese outward direct investment and in relation to FDI to Africa as a whole. Chinese investment in Africa represented about 3 percent of total Chinese outward investment in 2003, and it has only very recently expanded significantly in terms of its absolute volume. Between 1999 and 2003, Chinese FDI toward Africa was well below US$ 100 million annually,

15 FDI stock refers to the existing base of foreign investment in a country rather than an inflow of investment in a particular year.

while in 2004 investments topped US$ 300 million and about US$ 400 million in investment was provided in 2005 (UNCTAD 2007a).

The emergence of developing countries as important sources of FDI is nevertheless a key trend to be conscious of in exploring how patterns of investment could evolve in the future. At the same time, the persistent presence of investors from capital-rich OECD countries in Africa is also a relevant background element in thinking about the future of investment in Africa, because economic and political developments in these countries will likely shape the nature of the future supply of FDI.

In a recent overview of investment prospects in Africa based on investor surveys, UNCTAD, a primary source of data and analysis on investment flows in the developing world, has suggested that short-term investment prospects for the continent are unlikely to depart from Africa's longstanding marginalization on the global FDI scene, since Asian countries, European transition economies, and developed countries continue to be considered more highly preferred investment destinations for multinational firms (UNCTAD 2007b). Nevertheless, the organization has pointed to regional efforts to promote economic integration and improve the investment climate, as well as potential for greater economic diversification in leading destinations of FDI in presenting a generally optimistic prognosis for how FDI volumes might be expected to evolve in the coming years (UNCTAD 2008d).

2.4 Exploring drivers of FDI patterns

The literature on the determinants of foreign direct investment flows offers a basis for identifying key drivers of change that could shape investment patterns toward Africa in the future. This section discusses potential drivers of investment patterns by highlighting geographic, economic, and political factors that are thought to affect decisions to invest abroad. The FDI determinants listed below have been analysed extensively in a literature seeking to identify the sources of cross-national variation in attractiveness to investment. This section first presents these drivers of change in theoretical terms, and then briefly reviews existing evidence of the relevance of these drivers to the African context.

2.4.1 Geographic determinants of FDI

Geography is a basic factor influencing international economic relations. In the international trade literature, gravity models use the distance between markets as a main predictor of trade flows (Bergstrand 1985). Proximity to major markets can therefore influence where export-oriented investment is directed. Geographic factors have also been identified as important determinants of economic development prospects. Gallup et al. (1998) observe for example that countries that are land-locked have more restricted economic development potential than countries with easier access to coastal regions. These authors also note that tropical climates can carry the dual disadvantage of constraining agricultural productivity and increasing the incidence of disease among the labour force. Geography might then be expected to influence investment patterns due to both the way that it shapes the integration of economies into global production and exchange networks and how it influences domestic economic conditions. Finally, a country's natural resource endowments represent another commonly identified geographic determinant of investment flows (Asiedu 2005). African countries that are more geographically isolated can in general be expected to have continued difficulty in attracting foreign investment in the future, while resource-rich states may have better prospects.

2.4.2 Economic determinants of FDI

Several characteristics of the receiving economy have also been emphasized in research on the determinants of direct investment. The size of the market in a host economy as well as its economic growth potential can encourage firms to relocate production there, and general macroeconomic conditions including inflation rates are also likely to figure into investment decisions (De Mello 1997). The demographic characteristics of a host country as well as income levels and income growth can in turn represent underlying forces that influence market size and hence attractiveness as an investment destination.

The availability and quality of factors of production are additional economic considerations for foreign investors. In example, the ability of firms to achieve efficiency gains in production will be shaped in part by the availability of labour in the host country. While the nature of the demand for labour will likely vary depending on the investors' industry, the skill level

of the workforce can be listed alongside other economic determinants of FDI flows. The quality of local infrastructure is another factor that can influence firm productivity and hence investment decisions (Asiedu 2002). As these general economic factors improve, so too should the environment for direct investment.

2.4.3 Political determinants of FDI

The economic characteristics of the host economy may themselves be shaped by political forces, which can influence the stability of the context in which investment is provided, the local operating constraints that enterprises are subject to and benefits they receive from establishing operations in a given country, the nature of complementary investments made by the public sector, and the character of economic and regulatory policies.

At a broad level, one important element of the political context in a host country or region is its proneness to conflict or the potential for reversals of political regimes in power (Asiedu 2002). As noted above, foreign direct investment can be considered a more long-term phenomenon than other types of private financial transfers. Hence, foreign firms are likely to favour locations where there is greater predictability in the political outlook that would suggest for example that production disruptions will be more limited and that commitments made by the government welcoming investors will continue to be respected.

The question of whether investors' general preference for stability translates into a preference for investing in countries with a particular type of political regime has been widely debated. Summarizing the literature assessing multinationals' preferences for authoritarian versus democratic regimes, Schulz (2007) notes that while some scholars have argued that authoritarian regimes can be beneficial for multinational firms because they may have more power to enact policies that privilege the wishes of foreign firms over the wishes of local populations, many other analysts have argued that democratic regimes are likely to provide better investment conditions because democracies are better at upholding contracts and providing social stability. According to Schulz, the mixed assessments of the importance of regime type to investors' decisions likely reflects limited analytical attention to the differences in determinants of different types of FDI flows: investment in natural resource extraction may for example be less sensitive to considera-

tions of regime type than investments that are targeted toward establishing firms' footholds in a foreign market or increasing the efficiency of their production processes (Schulz 1997).

In recent years, the role of government in generating favourable conditions for domestic and international investors has been emphasized in work supporting developing countries' efforts to improve their investment climates. Following the definition outlined by the World Bank, the investment climate refers to: *"the many location-specific factors that shape the opportunities and incentives for firms to invest productively, create jobs, and expand"* (2005). This concept includes a wide range of conditions that governments can contribute to maintaining.

Security and stability are considered to represent basic background factors that shape the quality of the investment environment. In its 2005 *World Development Report*, the World Bank stresses this point by noting that *"the outbreak of war or other widespread violence spells the end of almost all productive investment"* (World Bank 2005, 9). Governments also shape the character of the investment climate by influencing the cost of doing business through their taxation policies, regulatory requirements, and efforts to limit corruption. In short, political institutions and government policy choices are likely to determine how attractive a particular location is to foreign investors. International investment agreements, such as bilateral investment treaties or double-taxation treaties that offer reassurances to foreign firms that their assets will be protected and that their profits will not be overly taxed represent further examples of how government policy choices can influence investment patterns.

2.4.4 FDI determinants in the African context

As a final part of the discussion providing a background for the exploration of future investment patterns on the African continent, this section briefly reviews empirical findings that assess the relevance of key investment drivers in Africa. In a study of investment in 22 Sub-Saharan African countries from 1984 to 2000, Asiedu (2005) finds a positive correlation between natural resource availability, the size of domestic markets, policy factors such as macroeconomic stability and infrastructure provision and the level of investment in countries across the continent, and also finds evidence that corruption and political instability act as deterrents to investment.

While these results underscore the relevance of widely-acknowledged predictors of FDI flows to Africa, other work by Asiedu indicates that the dynamics of investment in Africa do not perfectly mirror global investment logics. Asiedu (2002) suggests that a country within Sub-Saharan Africa is likely to receive less investment in comparison to a hypothetical country outside of the continent that has similar characteristics affecting investment prospects. This observation leads Asiedu to conclude that *"there is an unaccounted for 'Africa effect' – suggesting that the inability of countries in Sub-Saharan Africa to attract FDI may in part be blamed on the fact that these countries are located in a continent that happens to have a bad reputation"* (Asiedu 2002).

Dupasquier and Osakwe (2005) have in a similar vein suggested that African countries as a whole have attracted less FDI than might be expected given their economic potential. These authors offer a variety of explanations for Africa's poor record in attracting FDI. These include the prevalence of conflict – the African continent is more war-prone than other regions of the world – economic instability, the lack of a favourable investment climate in many countries, and the prevalence of corruption. While Asiedu (2004) notes that the performance of African countries on measures of the quality of their policy environments has improved in recent years, these improvements have been outpaced by reforms in other parts of the developing world that have been able to attract a larger share of global FDI flows.

2.5 Critical uncertainties regarding future investment flows

The above discussions of the potential development impact of FDI and the determinants of FDI can serve to help build storylines for the scenarios that follow. As the outline of scenario methods in Part I of this study indicated, one of the main foundations of a scenario analysis exercise is the delineation of critical uncertainties, those drivers of change that are considered

16 These population figures refer to the African continent as a whole. The population of Sub-Saharan Africa is expected to grow from close to 870 million in 2010 to reach just over 1.3 billion in 2030, according to the medium variant of the UN Population Division's demographic projections.

to be both highly important and unpredictable. These uncertainties can be represented on a matrix that serves as the basis for generating four scenarios that display a wide range of variation from one another.

The discussion of drivers of change provides some clues about factors that may be considered more predictable or unpredictable in determining the nature of FDI flows in the future. Geographic factors are for example fixed. While technological developments or improved infrastructure may mitigate the effects of the geographic isolation of land-locked African countries in the future, these countries will likely continue to face greater development challenges than countries with access to the sea. Similarly, natural resource endowments might be considered a fixed asset, and natural resource-rich countries will likely continue to draw investment in the primary sector.

The factors listed as economic determinants of investment patterns may be more mixed in terms of their levels of predictability. As noted earlier in this study, demographic trends have often been considered to be relatively predictable in nature. According to UN projections, the population of the African continent is expected to increase significantly between 2010 and 2030, rising from just over 1 billion in 2010 to somewhere between 1.4 and 1.74 billion by the end of this period (UN Population Division 2006).[16] These demographic changes potentially generate economic benefits, for instance by expanding the size of markets that may be attractive for foreign investors and increasing the size of the labour force. Yet with this demographic growth, other economic pressures can also emerge, since larger populations will potentially place greater strain on natural resources and put increased demands on states in the area of service provision. Continued high population growth rates may effectively offset overall economic growth gains and lead to increased conflict both in urban areas and over land on the African continent (Vimard 2008).

Political factors may display a higher degree of uncertainty in terms of how they will evolve in the future. As the above discussion highlighted, one main deterrent for foreign investors in Africa has been the continent's political instability. Following the end of the Cold War, the African continent was beset with internal conflict. According to the UK Department for International Development, violent conflict affected a majority of African countries and 20 percent of African populations in 2000. In 2003, African countries accounted for 46 percent of the developing nations experiencing conflict (DFID et al. 2004).

While there have been signs in recent years of movement toward the peaceful resolution of conflicts in disparate corners of the continent, the spectre of renewed conflict remains in a political context where governments may have only a tenuous hold on power. The stability of states on the African continent can be considered an underlying determinant of future economic prospects and of the perceived risks for foreign firms deciding on whether they should invest resources in a given locale. This analysis selects political stability as one critical uncertainty driving future investment patterns for this reason.

The list of determinants of investment provided above focuses exclusively on characteristics of receiving countries. Yet it is also relevant to consider how investment patterns might be altered due to factors that are beyond the control of receiving countries themselves, in particular those related to economic prospects in the world economy as a whole. Recent studies of global economic prospects conducted by international organizations have noted the effect that depressed global growth can have on developing economies. The World Bank suggests, for instance, that in 2008 the global economic slowdown would contribute to lowering growth rates in the developing world by 1.5 percent.[17] While global economic prognoses have suggested that the negative consequences of slowdowns in industrialized countries could be mitigated by continued growth in emerging economies, the economic downturn related to financial crises in industrialized countries has also led to reduced growth rates in economies such as China and India, underlining that economic performance in these regions has not been "decoupled" from the economic fortunes of advanced industrial states (IMF 2008).

Because investment in Africa has traditionally come primarily from industrialized countries, if market demand in these economies is depressed due to declining growth rates, this may also impact the supply of investment from these countries. Just as poor economic performance in industrialized countries has been offset in recent years by the performance of emerging market economies, engines of growth may also offer a source of investment that could compensate for dropping investment from industrialized countries. However, these emerging economies may not themselves continue to

17 Please see: http://web.worldbank.org/external/default/main?theSitePK=659149&pagePK=2470434&contentMDK=20370063&menuPK=659159&piPK=2470429

enjoy the phenomenal growth rates they have recently experienced due to their own sensitivity to developments elsewhere in the global economy or due to the variety of internal challenges that they face.

One important reason to underline that economic developments in Africa are likely to be particularly sensitive to economic performance in the world as a whole is that African economies continue to be highly dependent on primary commodities. UNCTAD has estimated that commodities provided 79 percent of African export revenue between 2003 and 2006 (UNCTAD 2008c). Commodities prices are highly vulnerable to fluctuations in global supply and demand. While there has been a boom in commodities prices in recent years, a global economic slowdown could be detrimental to commodities producers not only because of a drop in export earnings, but also because a fall in prices may discourage foreign investment in these countries.

How the global economic context will evolve is presented in this study as another key uncertainty in examining the future of investment flows to the African continent.

The broad contours of the scenarios that are constructed are structured around the following two key questions that reflect the critical uncertainties just identified. The first question is: will the African continent witness deepening political stability, or will political tensions increase, leading the security situation to deteriorate? The second question is: will the global economy be expansive in nature, stimulating increases in the supply of direct investment, or will the global economy contract, depressing market demand outside of Africa and decreasing the flow of investment?

The organization of the scenarios around these key questions does not necessarily mean that other drivers of change are not incorporated into the storylines. Indeed, because scenarios seek to explore complex relationships between drivers of change, the treatment of factors beyond these central factors of uncertainty is essential in crafting compelling storylines. As in a theatrical or cinematic context, key plotlines unfold against a backdrop that can provide additional information about why particular events occur. In the narratives that follow, factors such as political leadership, the quality of multilateral cooperation, and policy choices in and outside of Africa play supporting roles in moving the stories forward, even as the key drivers discussed above provide the narratives with their central logic.

2.6 Scenarios on the future of foreign investment and development in Africa

This section presents four scenarios that provide pictures of how investment patterns toward Africa could evolve toward the year 2030. Before the individual narratives are presented, a word of caution is in order. It is important to stress that these scenarios serve an exploratory purpose and are not intended to provide hard predictions about what will happen in the future. Even if the storylines have some factual basis, they can essentially be interpreted as fictional accounts of how the future may unfold. Moreover, these scenarios can be considered to be first-generation scenarios that should be read critically. They are laden with assumptions that the reader can (and should) question.

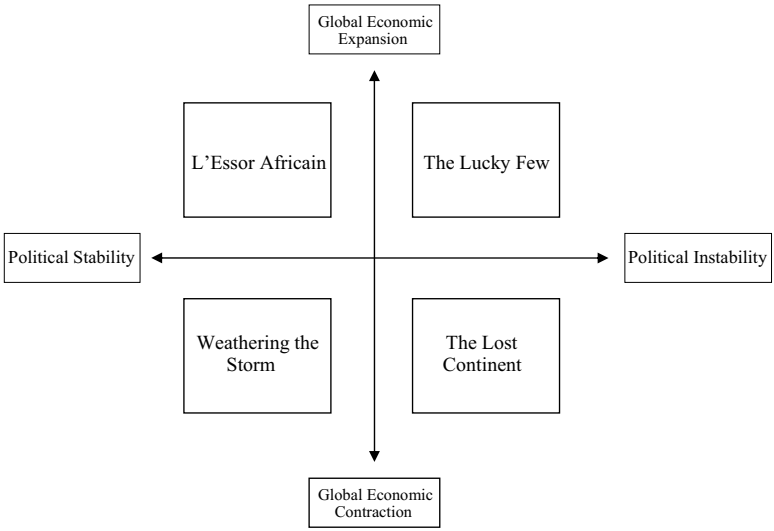
Each narrative follows a similar structure, describing key developments across three discrete time periods (2010–2015, 2015–2020, and 2020–2030). The narratives are written from a retrospective standpoint, that is, from the perspective of an observer in 2030 reviewing developments in investment patterns over the past two decades. Figure 2.4 provides a representation of how the scenarios relate to one another by placing them along a scenario matrix with axes relating to the nature of political stability on the African continent on the one hand and the state of the global economy on the other.

2.6.1 Scenario 1: L'Essor Africain

It is an understatement to note that the African continent today is a far cry from the dismal picture painted of the region in the media and in the international development community itself in the 1990s and in the early years of the 21st century. As we head into the 30s, it is worthwhile to look back at the developments that have helped to transform the continent from a largely marginalized outpost in the global economy to a thriving part of today's dynamic world marketplace and a magnet for foreign direct investment.

Clearly, the last two decades have not erased decades of accumulated disadvantages related to social development on the continent. And as in other world regions, the challenges of limiting inequalities and maintaining social cohesion remain great. The economic progress of the African continent

Figure 2.4: Scenario matrix: The future of foreign investment and development in Africa *)



*) This picture presents the key dimensions of uncertainty around which the four scenarios have been constructed. One axis of the matrix represents the level of political stability on the African continent, while the other reflects a variable state of the global economy that might increase or decrease the supply of investment.

has nevertheless been remarkable. While many individuals and organizations have contributed to sustained economic growth rates, this success can primarily be attributed to a confluence of two key forces: the favourability of global economic conditions and rising political stability within African countries themselves.

2010–2015

As the deadline for the achievement of the Millennium Development Goals approached, many African countries still had far to go in order to reach Millennium targets focused on expanding levels of educational attainment, improving health care, and reducing poverty through growth in productive sectors of the economy. While aid donors, hitting an economic rough patch

due in part to the fallout from a major financial crisis, had made the achievement of these goals more difficult by reneging on financial pledges they had made at international conferences just a few years earlier, African countries were also not helped by the relative dearth of private investment on the continent at the time.

The impending failure of many African countries to meet the Millennium Development Goals was disappointing to many policymakers since the continent had been making obvious strides in improving the underlying conditions that supported economic growth, including strengthening governance structures and improving financial management. As 2015 rolled around, the unmet objectives presented African leaders and donor governments with food for thought about how to address persisting development challenges.

2015–2020

The recognition that Africa continued to lag behind other regions of the world in terms of economic and social development encouraged African leaders to redouble efforts to enhance stability on the continent. Fearing that their own country's reputations would suffer from continuing violence in their regional neighbourhoods, Southern and West African leaders helped to broker lasting settlements to political conflicts in Côte d'Ivoire and Zimbabwe, and worked to develop regional response mechanisms to small-scale flare-ups in order to prevent a resurgence of ethnic conflict. In this process they were supported by international actors, who provided increasing assistance to sustain democratic transitions and support post-conflict reconstruction in war-torn areas. At the same time, many countries had benefited from efforts to stimulate private sector development. Although the early benefits of these initiatives seemed to be imbalanced, a take-off in local entrepreneurial activity helped to reinforce support for further governmental openness, and signs of increasing democratic consolidation were evident in numerous countries.

As African governments found strength in democratic consolidation and sought to reinforce existing regional security initiatives, the state of the world economy provided a strong impetus for the acceleration of growth in Africa as well. Emerging market economies in Asia had been driving global growth over the previous decade, and the development of their internal markets and continuing income growth encouraged foreign expansion of

their firms. This expansion occurred across industrial sectors. The demand for natural resources, and particularly minerals, remained high, but due to land scarcity in Asia, where rising incomes had raised consumption levels, Asian firms became increasingly active investors in agricultural production on the African continent as well. Sustained high commodity prices provided a steady revenue stream for African governments that allowed for increasing public investment directed toward improving the quality of physical infrastructure and the human capital stock.

While poorer Asian countries still represented a primary destination for Chinese outward investment in the manufacturing sector, the potential for efficiency gains through lower labour costs in Africa enticed more Chinese manufacturing firms to establish a foothold on the continent as well. Asian firms were not alone in taking a larger interest in Africa in this period. Investment agreements between the core OECD countries and African nations continued to multiply, and the rising concentration of African populations in urban centres encouraged firms specializing in services to set up shop in many locales. European investors, benefiting from government incentives to set up manufacturing operations in Northern African countries (an offshoot of intensified European efforts to slow migration and prevent regional instability) increasingly established manufacturing plants in their regional backyard.

2020–2030

Already by 2020, the progress toward economic diversification was perceptible across the African continent. The wisdom of the leaders of former commodity-dependent countries who proposed that these countries should use their resource revenues to make investments that supported sustainable private sector growth was largely confirmed when the price of oil dropped sharply on the world market in 2023, reflecting progress in major consuming countries in adhering to their Copenhagen commitments to reduce carbon emissions and the takeoff in the development of alternative energy technologies.

This drop in oil prices was not in fact bad news for many African countries. This was not only because non-oil producing countries had generally experienced lower growth rates due to the costs of fuel imports, but also because the drop reflected an important reality in the world economy as a whole. Steady growth in the tertiary sector had been the driving force of econom-

ic dynamism globally, and many firms looked increasingly to Africa as a new frontier for investment in financial services, telecommunications, and tourism. Dar es Salaam, a favoured destination of investment from financial services providers from the Gulf States and from Indian IT firms, became a major hub of economic growth in East Africa.

The positive global economic climate had privileged some African countries more than others. Larger countries, such as Egypt, Kenya, Tanzania, and South Africa continued to attract more attention from outside investors than smaller countries on the continent. Realizing that differential economic success could be attributed to the advantages of market size, some small countries sought to push harder for strengthened regional economic integration. Building on the political achievements within the West African Economic and Monetary Union (WAEMU) in particular, economic integration in West Africa was viewed as a continental success story. Governments in the region prepared for the launch of the common currency that would unite the WAEMU and the West African Monetary Zone.

Elsewhere on the continent, the Southern African Development Community (SADC) also saw a deepening of its economic integration initiatives, though plans to establish a monetary union had been further postponed given continued convergence difficulties outside of the economic motors in its Southern core. While strengthening trade and investment ties to other regions of the world remained a high priority for African governments, these regional integration initiatives were of course also intended to strengthen intra-regional economic linkages in order to contribute to continued efforts to dampen the potential for conflict. Given differential progress toward economic integration at a sub-regional level, it was understandable that integration on a continental level remained incomplete, yet African initiatives to promote trade and investment had brought dividends, particularly in drawing the attention of foreign investors in the region's growing markets.

The investment climate in Africa today is as good as it has been anytime in the last twenty years. The influx of capital from foreign firms seems to have had the effect of positive reinforcement of the decisions that many African nations have taken to improve the framework conditions for domestic and international investors, notably through enhancing the security context and following through on promised governance reforms. Africa is no longer a forgotten continent. Indeed, quite the opposite is true. In the space of a cou-

ple of decades, Africa has become a major engine of growth in the world economy in its own right.

2.6.2 Scenario 2: The lucky few

It used to be the case that in discussions of world development problems or global economic prospects, the countries of the African continent could be unproblematically lumped together. These countries, and the region as a whole, seemed often to compare unfavourably to countries in other geographic regions on measures of economic, social, and political development. In relation to other regions of the world, the African continent appeared to be uniquely passed over in terms of attracting the benefits of the globalized world economy and peculiarly prone to devastating internal conflicts.

The varied fortunes of African countries over the last couple of decades have encouraged commentators to move away from such blanket treatments of development on the African continent. The distance between the continent's success stories and its poor performers has widened noticeably. In a global context that has been generally favourable for economic growth, these quite divergent trajectories that African countries have taken primarily reflect persistent variation in the capacity of African governments to avoid internal turmoil.

2010–2015

According to the experts, the outlook for the African continent as a whole looked generally favourable heading into the teens. It was clear that many countries would fall short of meeting the Millennium Development Goals, but on the positive side the continent had witnessed recent progress toward resolving conflicts in the Democratic Republic of the Congo, Angola, and in West Africa, and governments across the continent were praised for their judicious macroeconomic management. While the global economic slowdown had contributed to reduced investment flows at the beginning of this period, these picked up as Asian engines of growth continued to power forward. Demand for commodities remained strong internationally, and investments in natural resources continued to be robust.

The patterns of direct investment to Africa in this period showed continuity with trends that had been developing over the previous decade. This was

not only because natural resources remained the main draw for investors in the oil and mineral rich economies of the continent, but also because the concentration of investment continued to display a pattern that favoured a small handful of African countries. Morocco and Egypt welcomed the most diversified basket of investments, as the legislative output of previous reform-minded governments, especially their competition policies, seemed to bear fruit in shaping economic practice in these countries. Information technology companies were all too happy to take advantage of the young and urban demographics that these markets offered them. At the other end of the continent, South Africa's star also continued to shine brightly in the eyes of international investors.

2015–2020

Given the continuing rise of particular African economies, there were grounds for optimism about how the continent as a whole would develop in the future. Because the volume of investment (still directed primarily toward natural resources) had increased so significantly in recent years, questions about the continued need for public financing for development became increasingly prominent in development assistance debates in donor countries. Yet as many development advocacy groups began to signal, this increased investment was not necessarily a blessing, because the economic benefits that it generated were not widely distributed.

In spite of the international rhetoric in previous decades that governance reforms were a prerequisite for increasing countries' attractiveness to investment, competition among multinational firms for lucrative contracts in extractive industries led them to overlook persisting shortfalls in progress toward achieving anti-corruption goals in particular. Nowhere were the perverse effects of incoming investment more apparent than in Nigeria, where the country's recent progress toward combating patronage more or less grinded to a halt: while the Caribbean real estate market seemed to benefit from the expanding revenue stream of the Nigerian elite, the quality of infrastructure in the country as a whole noticeably deteriorated.

The declining conditions for much of the Nigerian population served as a source of internal tension within the country. Not only was crime an increasing problem in the slums of major cities due to the limited job opportunities outside of extractive industries, but unrest in rural areas mounted as well, given high fuel costs in spite of ample domestic oil production and the

minimal expenditures in the area of social services allocated toward rural regions. While large oil multinationals reacted to the worsening security context by establishing sometimes extensive private security forces to protect their assets, the government's approach to preserving order focused on increasing the repressive capacities of the state itself.

These developments were detrimental for a variety of reasons. Within Nigeria, the inability of the state to maintain a stable security situation meant that investors outside of the resource sector were wary of entering the market, even if it had the potential to be one of Africa's largest and most lucrative domestic markets. Because of its internal instability, Nigeria's contribution to regional conflict-reduction initiatives was also quite limited. Meanwhile the resolution of conflict on the continent seemed to be an ever greater challenge, as many resource-rich countries followed Nigeria's example. The struggle for control over resource revenues led many observers to question whether African borders were finally headed toward a post-colonial adjustment on a grand scale.

2020–2030

Even as major resource producers experienced increasing internal tensions, several economies on the continent continued to experience broad-based growth. The best performers continued to be countries at the edges of the continent: Egypt, Morocco, Tanzania, and South Africa. The lessons these countries had learned from the difficulties that neighbouring countries had experienced in trying to maintain order was to tie their own economies more directly to the countries in their international trading networks rather than to invest political resources attempting to deal with difficult internal conflicts in neighbouring states.

The bilateral relationships between these countries and the European Union became an increasingly central component of their foreign relations, and EU countries continued to direct development aid resources to these states in order to further develop their trade relationships. This did not mean that the African countries with strong and balanced economic performance were indifferent to conflict on the continent, but they reacted primarily by taking measures to increase their own internal security, notably by undertaking stricter border controls. The imposition of stricter worker entry requirements was a clear response to the increasing migration pressures from poorer neighbouring countries.

Political leaders in the strong economic performers found it politically advantageous to limit their regional engagements. Allowing increased migration was viewed by the populations of these countries as a potential threat to the systems of domestic redistribution whose development had accompanied the increasing embeddedness of these economies in international trade networks. These countries also did not consider their past success to be dependent on the performance of their neighbouring countries, and perceived their peer group to be other global economic success stories rather than countries they shared a common continental address with. On the brink of this new decade, the wisdom of these states in distancing themselves from the troubles in other parts of Africa appears to be ready for a major test. The renewal of internal conflict across Central and West Africa could spark a new recognition of the urgency of developing regional security mechanisms. Or these countries may simply batten down their hatches, ensuring that development on the African continent will continue to move at varied speeds.

2.6.3 Scenario 3: Weathering the storm

Thirty years ago, "globalization" was the buzzword that launched a thousand publications. The term described the changing quality of the world economy, which was characterized by the expansion of trade and investment flows, the acceleration of technological change, the ready diffusion of information, and an unprecedented level of interdependence among national economies. Globalization was not always considered in positive terms. For some, it was thought to be propelled forward by private corporations that benefited disproportionately from these economic integration processes in relation to workers and other disadvantaged populations. Others pointed to negative aspects of the increased facility of cross-border movements and technological diffusion such as the rise in human trafficking and the growth of terror networks and transnational crime syndicates.

Whatever the assessment of globalization, there were few academic authors or journalists who doubted that the acceleration of economic integration that had been taking place would continue in the coming decades. Developments in the world economy in the last two decades have not vindicated that assumption. While the global economy today still bears the marks of that period of accelerated market integration, "globalization" has now lost its momentum. The economic downturn in much of the world has rein-

forced the national dimensions of economic organization and highlighted the differential capacities of states to respond to major economic challenges.

Though the waters of the global economy have been choppy over the last twenty years, African economies that one might have expected to be the most vulnerable to the global economic downturn have navigated these waters remarkably well. While declining external finance from private and public sources depressed their opportunities for growth, the domestic reform processes that produced a favourable climate for productive investment and promised more widely distributed economic opportunities provided a basis for political stability that laid a foundation for growth in the absence of ideal international economic conditions.

2010–2015

Africa was receiving a healthy amount of good press around 2010. Major international organizations bestowed praise on leaders across the continent for their continuing efforts to maintain solid macroeconomic fundamentals. The agenda of the New Partnership for Africa's Development (NEPAD), which promoted strengthened intra-regional trade ties, improved governance, and enhanced cooperation on security issues among other goals, enjoyed widespread support from African leaders, who viewed cooperation on a regional level as the main vehicle for graduating from their marginalized position in the world economy.

The emphasis that African leaders placed on improving their physical and governmental infrastructures produced clear short-term gains. Sensing potential in a growing market, multinational firms in the natural resources sector increasingly diversified their activities on the continent and invested growing sums in processing activities in particular. A shortage of skilled labour meant that investment in manufacturing was still growing only slowly, however Asian firms were expanding their presence in the manufacturing sector as well as in the primary sector. These manufacturing investments had a perceptible influence on climbing employment figures in a number of Southern and Western African countries in particular.

2015–2020

In September 2015, an impressive gathering of world leaders convened in New York to commemorate the Millennium Summit that had been held fif-

teen years earlier. The tone of the 2015 summit was more subdued than the tone of the meeting in 2000: the failure of the international community to reach the lofty goals set out then seemed to have scaled back expectations among many participants. Yet the gathering did provide an opportunity to highlight some emerging development success stories. The diversification of sources of development finance was regarded as one of the more important changes in the global development landscape, and India and China were praised for the contributions that they had made to development in Southern and Eastern Africa in particular through their increased aid funding and investment promotion policies.

The world economy had seen its share of ups and downs in the lead up to 2015, but increased regulation of financial institutions in the United States and in other OECD countries along with other government measures to strengthen domestic markets seemed to have contributed to lowered economic vulnerability in many of the world's leading economies.

If domestic economic policy choices had placed the US and other industrialized countries on a sound footing, however, few countries were prepared for the coming global shock that resulted from the stumbling Chinese economy. Growth in China had been a major engine of global growth. Its factories produced cheap imports for consumers across the world and its large open internal market was an enticing destination for many exporters. Its steady demand for the natural resources that fed its factories had also ensured persistently high commodities prices. Perhaps because of these economic virtues, underlying political problems in China were overlooked by many economic analysts. China's mounting internal challenges were nevertheless significant. Key sources of tension included the country's growing surplus of men, mounting environmental problems, and widening inequalities between coastal regions and the interior. In 2017, a spate of revelations about the contamination of major water supplies spawned protests across the country. The government's efforts to suppress these protests only angered the demonstrators further, however. Demonstrations continued to multiply and spread beyond environmental issues to take up questions of economic justice and political expression. The Chinese state faced a major threat to continued internal cohesion.

The Chinese motor of world growth did not grind to a complete halt, but its internal difficulties did lead to a significant drop in output and declining

consumption. This had a ripple effect on other economies, including the United States, which stood to lose thousands of export-related jobs as a result. It also had ripple effects on African economies. The drop in commodities prices that resulted from depressed demand in China was regarded as a major setback to key commodity exporters on the continent. Many observers of the business environment in African countries also began to question how the growing crisis would affect the activities of the state-owned firms that had established operations in the region.

2020–2030

By the beginning of the 20s, the braking effect that the Chinese slowdown had had on the rest of the world economy became increasingly evident. While vulnerable commodity-dependent countries in Africa had been adversely affected by the economic downturn, the early response of OECD countries to the downturn seemed to close off other opportunities for generating trade and investment that would offset declining trade with China.

OECD governments faced populist pressures to impose new protectionist measures, while firms headquartered there responded to the reversal of fortune in China by trying to limit their exposure to risk internationally. In many corporate boardrooms, refocusing operations in OECD countries became a high priority. Yet for many manufacturing firms, shifting production back to putatively safer OECD countries did not seem like a viable option: not only were the labour costs too great but the firms also recognized that they would be competing for a share of a shrinking labour pool. The silver lining of the Chinese downturn for African economies thus seemed to be the increasing attention paid by European manufacturing multinationals in the region.

These multinationals were attracted not only by low labour costs but by the stable political footing that African economies were built on. The continental initiatives such as NEPAD had not only proven their worth in establishing better framework conditions for foreign investors; they also served as important forums for exchanging ideas about how to stave off rising internal tensions in a continent marked by its ethnic diversity and growing rural-urban cleavages. In that context, some observers pointed to the mixed blessing that the new inflows of investment in manufacturing might bring due to the increased concentration of wealth in key coastal areas, but

emerging initiatives such as an effort to stimulate regional agricultural trade suggested that African leaders were actively anticipating these potential negative outcomes and working to prevent them from materializing. While global investment flows had dropped in the aftermath of the Chinese crisis, the effect of these developments within Africa was to allow the continent to attract an increasing share of global investment. In the face of global economic turbulence, Africa seemed to be weathering the storm better than expected.

2.6.4 Scenario 4: The lost continent

In the early years of the 21st century, there was a "big push" of publicity on the development potential of the African continent. The persistence of wide scale poverty across the region and humanitarian catastrophes resulting from dislocation in Sudan and in the Great Lakes region motivated intense political advocacy in the world's wealthiest countries in support of increasing available financial resources to support development efforts. While acknowledging the difficult challenges that lay ahead for many African countries regardless of the changed outlook for development finance, the overall tone of the campaigns of these development advocates was overwhelmingly optimistic. They presented a picture of a continent where homegrown entrepreneurs were injecting a new dynamism into historically underdeveloped markets and saw a potential for intensified trade and investment relationships that would benefit wealthy European and North American countries and African countries alike.

Looking at broad economic growth trends heading into the year 2010, this optimism seemed to be well-founded. Driven by a resource boom and steady growth in regional economic motors, many African economies were expanding at a high rate. There continued to be pockets of instability on the continent, notably along the Chadian-Sudanese border, in the Horn of Africa, and in the Eastern Congo, but in West Africa and Angola, recent peace settlements seemed to be holding up well. In spite of those trends, the high hopes of the development advocates have largely been dashed in the last twenty years, which have seen a resurgence of political violence on the continent and a decline in international interest, due to the continent's own political and economic difficulties and the inward-looking focus of many of the world's wealthier nations.

2010–2015

Expanding investment flows were viewed as a key success story in the years leading up to 2015. The African continent was becoming a major source of ores and minerals used in the production of consumer electronics and an important supplier to Asian manufacturers. After a short-lived dip in prices, demand for oil resumed its climb internationally, and increased production in the Gulf of Guinea made the region the largest international oil supplier to the large US market. For many firms in the natural resources sector, the potential of the African continent still appeared to be largely untapped. This was especially true of possible mining concessions in Central African countries, yet multinational firms remained cautious about entering agreements with the governments of these countries due to their tenuous holds on power. Diplomats in Kinshasa often noted that the effective size of the territory under control of the central government of the DRC was still an open question.

Internal tensions in the DRC seemed to be bubbling to the surface to an increasing degree. Government efforts to create a modern capital at the centre of Africa had apparently inspired discontent in the provinces, where economic conditions had not improved noticeably in recent years. The country's experience with decentralization seemed also to fuel the political ambitions of local leaders eager to benefit more directly from the exploitation of their region's natural resources. The unresolved refugee problem in Eastern parts of the country only added to the tensions. However, at this point in time the DRC appeared to be more vulnerable than many of its African neighbours, as incoming receipts from extractive industries had allowed governments to add to their capacity to maintain internal security.

2015–2020

The profitability of natural resource extraction had led to an increasing nationalization of extractive industries. While many states initially lacked the know-how to manage these industries and were therefore dependent on joint-venture arrangements with foreign firms, by the late teens several states felt they had developed the expertise necessary to take an even stronger role in the management of these enterprises. For the political leaders behind this movement, one advantage seemed to be the alignment of the resource revenue with governmental priorities. It was not a coincidence that large prestige projects multiplied in African capitals during these years.

The decade-long rise in demand for commodities had lulled numerous African leaders into believing that they could expect a safe revenue stream for many years to come. But in 2018, the global economic context changed dramatically in comparison to previous years. The expanding democratic protest movements across China introduced a new degree of economic uncertainty into the former motor of the world economy. The significant drop in economic growth in China that followed not only contributed to a global drop in commodities prices, it also gave investors in major capital-rich countries a scare about investing in developing markets.

With high commodities prices, African political leaders in resource-rich countries could contribute to political stability by distributing their resource rents widely. As public budgets tightened due to declining revenue, the days of government largesse seemed to be at an end. This was not only a problem for leaders because they had previously used budgets to help dampen the ambitions of political rivals but also because certain segments of the population which had benefited from government support, notably urban populations, were increasingly denied government services they had come to depend on. Struggles for political power coupled with increasing unrest in the cities fuelled a wave of skirmishes between government forces and protestors. The ability of governments to maintain order across their territories became severely tested.

2020–2030

By 2022, the security situation on the continent had deteriorated significantly. The war in Eastern Congo was intensifying, imposing new challenges on neighbouring countries like Zambia and Tanzania that had been making great strides in building up the domestic infrastructure to attract increasing investment in the previous decades. Both countries had enjoyed a small boom in investment driven by growth in the tourism sector in particular. The increasing demands that securing national borders placed on these countries generated additional economic strains, reducing their ability to upgrade their physical infrastructure and invest in social services.

Indeed, spending on security increased across the continent. In the countries experiencing internal unrest, this increased security spending was effectively leading to a significant resurgence in the small arms. The prevalence of conflict made it difficult for any single African government to act as a force for promoting conflict resolution initiatives on a regional level.

Several of the continent's largest countries (Sudan, Nigeria, DRC) had been among the most significantly affected by the resource bust. While South Africa continued to have a strong economic base and stable political system, it too, was preoccupied with the task of securing its own borders to prevent massive refugee flows from conflict-ridden regions to its North. These efforts to tighten border control further impaired intra-regional trade flows.

The response of European and North American countries to Africa's declining fortunes was very similar to South Africa's. The scale of the problems appeared to be too daunting to risk any kind of international intervention. At the same time, political support for economic assistance was low in this general economic slump. Instead of trying to address another continent's problems, the leading industrialized countries decided to invest increasing amounts of resources in border defences. Firms in these countries followed the general orientation of their governments by increasing their search for business opportunities within mature industrialized economies and largely forgetting about the economic potential of the African continent.

2.7 Conclusion

The scenarios presented in the previous section provide skeletal treatments of how investment patterns and development prospects on the African continent might change over the next twenty years. The stories suggest that constructing a narrative that explores the evolution of these phenomena over such a long period requires an appreciation for the complexity of factors contributing not only to the way that investment is distributed globally but also to how development processes unfold.

To construct a more detailed portrait of how investment to Africa could evolve over the next two decades, the scenarios hint that it would be necessary to answer a variety of questions about different components of the investment story in greater depth. One question relates to how individual countries will develop to make themselves more or less attractive to foreign investors. There is clearly greater diversity on the African continent than the existing scenarios acknowledge. The investment trajectory for Nigeria is likely to differ from that of Tanzania, for example, so exploring variations in the likely political and economic futures of these states would be an in-

formative input to a scenario exercise dealing with the broader question of how FDI to Africa could evolve.

This analysis also highlighted that not all forms of investment follow the same kind of logic, both in terms of what motivates investors and in terms of the nature of the effects that this investment is likely to produce. Another means of strengthening the existing analysis would be to break down sectoral FDI patterns to African countries and to explore the dynamics of change within these sectors. Beyond examining prospects for investment in natural resources, in manufacturing, and in services, one could further decompose investment according to industries, for example by looking at investment in textiles production or in tourism. In addition to shedding light on the broad question related to how investment patterns will change, such exercises could also serve to illustrate the varied developmental benefits of different types of investment.

The scenarios also stressed that in examining evolving international investment patterns, factors related to the performance of the world economy may be especially relevant drivers of change. Here, too, an additional set of analyses would be beneficial in assuring the plausibility of scenario storylines. Assessing the prospects for continued outward investment within major FDI sender countries itself requires a general understanding of their economic and political prospects as well as an appreciation for how these conditions would influence the decision making calculus of firms headquartered in these countries.

As the summary of areas for further analysis under the umbrella of the "FDI to Africa" question indicates, the presentation of scenarios may leave readers with more questions than answers. This might be viewed as a positive result of an exercise that is designed to stimulate thinking. In questioning the assumptions on which divergent storylines are based, readers are confronted with their own assumptions about the relationships between important drivers of change, and such an exercise may help to clarify what mechanisms researchers see as especially important in contributing to political, economic, or social transformation in the future.

At the same time, these open questions also underline that there are clear limitations to building scenarios as these scenarios have been built, i.e. through desk research conducted by a lone researcher. While existing theoretical and empirical work can certainly inform scenario logics and provide

a foundation for developing long-term narratives, such an approach also carries the risk of being backward-looking and not sufficiently open to innovative thinking that might emerge in a scenario development process that involves a larger number of people.

In spite of these limitations, such scenarios may be useful to policymakers for several reasons. First, policymakers may use these fictional storylines to compare the views of the future that they present with their own view of future trends in a particular area. This type of comparison should encourage policymakers to think about why their own "official future" might come to pass and what might disrupt progress toward the occurrences of the future that they regard as particularly desirable. Second, policymakers may identify desirable outcomes in the fictional scenarios, and can then generate ideas about what types of policy choices could lead to these positive outcomes, broadening their menu of policy options. Finally, scenario exercises can be used to evaluate the robustness of existing strategies. Current policy approaches can be assessed in relation to how well they can confront the challenges presented or how well they might be able to capitalize on the opportunities outlined in individual narratives. This type of evaluation should serve to identify the limitations of existing approaches and to suggest new priorities.

It is important to underline that scenarios such as those presented in this study do not by themselves provide a clear roadmap for action. They may illuminate key forces at work in a particular issue area or draw out the implications of a specific type of policy intervention, but because they present multiple futures as equally valid, they leave policymakers with many options in terms of how to interpret the narratives and to determine what types of consequences potential future developments have for their organizational priorities. If policymakers might be disappointed by the lack of a clear guide for action that scenarios by themselves provide, they may nevertheless appreciate using scenarios as tools for examining policy options.

3 Scenario analysis and global development: Considerations for policymakers

Recent crises in the world economy related to rising food prices and turbulent global financial markets have highlighted the difficulty that policymakers often face in anticipating future challenges. Scenario analysis provides a tool that can help to prepare organizations such as development aid agencies to enlarge their thinking about possible future occurrences and to better prepare for them. Building on the general overview of scenario analysis methods provided in the previous sections of this study, this final section offers a short list of points for policymakers interested in enhancing their capacity for long-term thinking to take into consideration.

These points for reflection can be summarized as follows. First, the conclusion highlights that to determine whether scenario analysis is an appropriate addition to a policy planning toolkit, an organization should evaluate existing practices for collecting information about and planning for the future as a point of departure. Under the second and third headings of this section, central factors that contribute to the success of scenario development projects are briefly outlined. These success factors include involving a diverse variety of participants to promote novel thinking and limiting the scope of the scenario exercise to avoid overly generalized portraits of the future from emerging. The penultimate paragraph suggests that policymakers might consider using existing scenario studies to evaluate their strategies even though doing so limits the learning potential that might derive from participation in the scenario development process. Finally, the concluding paragraph underlines that policymakers need to adopt realistic expectations about what scenario building can accomplish. As a method, scenario analysis may produce fewer ready policy recommendations than policymakers desire.

Necessity of assessing existing planning and information processing practices

Scenario analysis methods were developed in corporate and governmental settings in response to dissatisfaction with existing planning tools. One starting point for considering whether scenario analysis is an appropriate addition to an organization's planning portfolio is therefore an evaluation of current planning practice within the organization. If an organization is con-

cerned that it has been unable to adequately confront important challenges in its external environment, there may be culprits other than the research methods favoured by the planning staff to take into consideration. In the development policy context, for example, it could be useful to reflect on how well channels for communication between field-level implementing agents and headquarters facilitate an open flow of information about emerging challenges in disparate parts of the world that can inform policy planning within the organization.

Another possible explanation for sub-optimal preparation for emerging problems relates to an organization's commitment to research in general. If an aid agency has a limited capacity to collect information about the present state of affairs in developing countries, it may be difficult for the organization to anticipate problems that lie around the corner. Finally, developing a long-term view may be difficult for an agency if a planning department's responsibilities focus overwhelmingly on responding to short-term political demands. Ensuring that there is capacity within the policy planning department of an aid agency to reflect on potential long-term changes would likely help to enhance future-oriented thinking within the organization, regardless of whether scenario analysis methods are applied in the policy planning process. At the same time, an aid agency's investments in research that is not explicitly future-oriented can also enhance possible scenario-building efforts, since such exercises can integrate knowledge produced through a variety of channels.

Necessity of mobilizing internal and external knowledge to stimulate innovative thinking

Scenario analysis offers the potential to provide a supplement to existing research efforts to better understand the state of the world and can serve to spur thinking about the different directions that future developments could take. According to proponents of the method, one of its key virtues is to deal directly with future uncertainties by using key uncertainties as a basis for developing varied storylines about how the future may unfold. The identification of critical uncertainties generally takes place both by tapping the expertise of people working within the organization and by soliciting input from external experts that offer diverse perspectives on the questions in focus.

These two means of gathering input for scenario exercises correspond to two main elements of success in scenario building. First of all, the literature on scenario analysis emphasizes that for scenarios to be useful in stretching the mental maps that guide decision making within an organization it is important that there is strong managerial ownership of a scenario exercise. Direct participation in the scenario development process by key officials within the organization may not only contribute to ensuring that the scenario exercise reflects questions related to central organizational priorities but can also provide direct benefits to the participants by providing a forum for them to articulate and question their own assumptions about why future developments might occur.

At the same time, the process of developing varied pictures of how the future could evolve can be enhanced by efforts to incorporate a diverse variety of participants in this process. Aid agencies with operations in numerous developing countries likely already have a large network of potential contributors that could be activated in preparing alternative futures of the context that development policy will have to respond to. Such networks would include non-governmental organizations and business associations with country or region-specific knowledge. Governmental representatives and academics could also be invited to contribute to scenario building processes, for example through short structured workshops that feed into a broader scenario building effort undertaken by the organization leading the effort. Including a variety of stakeholders in scenario development efforts can strengthen the legitimacy of the final product in addition to fostering innovative thinking by incorporating diverse viewpoints into the process.

Necessity of limiting the scope of scenario exercises

While scenario analysis is by itself considered to be a method that allows organizations to manage complexity, the ability of a scenario building exercise to condense information about possible futures in a manner that is useful to policymakers in thinking about what types of decisions they can take to manage potential future developments can vary depending on how the scenario effort is organized. Undertaking to answer a question as broad as “how might the global development landscape change over the next thirty years” poses a challenge due to its sheer scope. This question requires attention to a multiplicity of dimensions of global change, including potential changes in patterns of international economic exchange, in the global secu-

rity context, and in the global environment, among other areas. Each of these thematic areas could easily be the subject of a resource-intensive scenario-building effort in its own right.

By the same token, a scenario exercise that is not limited in its geographical scope risks either becoming a mammoth undertaking or producing sketches of the future that are at such a high level of abstraction that their direct relevance to decisions that policymakers are faced with may be limited. In designing a scenario building effort that contributes to answering the broader question of how the global development landscape could evolve in the future, it would therefore be useful to restrict the geographical focus of the project as a starting point, beginning with an examination of the future of particular developing countries or regions and using lessons from these more focused studies to inform the broader question. If an aid agency is considering integrating scenario analysis in its planning portfolio, limiting the scope of initial endeavours to apply the method would also be useful in terms of offering small-scale test cases that would allow the organization to evaluate the extent to which the approach is suitable in achieving its specific planning goals given the nature of the resources expended.

Possibilities to learn from existing prospective studies

An alternative starting point for an agency exploring the possibility of relying on scenario analysis methods to inform its planning processes would be an examination of existing scenario exercises that have focused on topics that are related to the organization's priorities. For example, the World Bank's *Rehearsing for the Future* report provides a ready-made reference product that aid agencies can use to explore possible developments in the future and to judge the value of pursuing similar initiatives within their own organizations. While a reliance on existing studies will limit the learning effects that come from direct participation in a scenario development process, externally produced narratives may nevertheless offer an organization a means of considering how well its existing strategy would perform in the alternative futures described or provide a tool for opening discussion within the organization more generally.

Recognizing the limitations of scenario methods

Whether aid agencies simply rely on external scenario exercises or make a commitment to scenario building internally, it is essential that policymak-

ers adopt a measured view of what scenario methods can accomplish. While policymakers may understandably be enticed by a method that carries the potential to identify emerging trends and challenges, it is important to emphasize that quantitative and qualitative scenario analysis methods alike do not present hard predictions about the future. Indeed, the results of research produced using these methods leaves much room for interpretation open in terms of what implications policymakers should draw from the exercises. In short, the success of scenario analysis methods in contributing to a higher level of organizational preparedness for future challenges likely requires an investment on the part of policymakers themselves in digesting the lessons to be learned from a given scenario exercise in addition to the sometimes significant investments that the methods demand in carrying out the research that contributes to scenario production.

Bibliography

Albuquerque, R. (2003): The composition of international capital flows: risk sharing through foreign direct investment, in: *Journal of International Economics* 61 (2), 353–83

Aligica, *P. D*. (2007): Uncertainty, human action, and scenarios: an Austrian theory based decision support tool for business strategy and public policy, in: *Review of Austrian Economics* 20 (2–3), 293–312

– (2004): The challenge of the future and the institutionalization of interdisciplinarity: notes on Herman Kahn's legacy, in: *Futures* 36 (1), 67–83

– (2003): Prediction, explanation, and the epistemology of future studies, in: *Futures* 35 (10), 1027–40

Asiedu, E. (2005): Foreign direct investment in Africa: the role of natural resources, market size, government policy, and economic stability, Helsinki: UNU-WIDER (Research Paper 2005/24)

– (2004): Policy reform and foreign direct investment to Africa: absolute progress but relative decline, in: Development *Policy Review* 22 (1), 41–8

– (2002): On the determinants of foreign direct investment to developing countries: is Africa different?, in: World *Development* 30 (1), 107–19

Bergstrand, J. H. (1985): The gravity equation in international trade: some microeconomic foundations and empirical evidence, in: *The Review of Economics and Statistics* 67 (3), 474–81

Blasche, U. G. (2006): Die Szenariotechnik als Modell für komplexe Probleme: Mit Unsicherheiten leben lernen, in: F. E. P Wims (ed.), Szenariotechnik: vom Umgang mit der Zukunft, Bern: Haupt Verlag, 61–92

Börjeson, L. et al. (2006): Scenario types and techniques: towards a user's guide, in: *Futures* 38, 723–39

Bradfield, R. et al. (2005): The origins and evolutions of scenario techniques in long range business planning, in: *Futures* 37, 795–812

Braun, J. von et al. (2005): New risks and opportunities for food security: scenario analyses for 2015 and 2050, Washington, DC: International Food Policy Research Institute (2020 discussion paper 39); online: http://www. ifpri.org/2020/dp/dp39/2020dp39.pdf (accessed 9 July 2008)

Bunge, M. A. (1998): Philosophy of Science, New Brunswick, NJ: Transaction Publishers

Carlsson-Kanyama, A. et al. (2008): Participative backcasting: a tool for involving stakeholders in local sustainability planning, in: *Futures* 40, 34–46

Chermack, T. J. (2007): Disciplined imagination: building scenarios and building theories, in: *Futures* 39 (1), 1–15

– (2004): Improving decision-making with scenario planning, in: *Futures* 36, 295–309

Clemons, E. K. (1995): Using scenario analysis to manage the strategic risks of reengineering, in: *Sloan Management Review* 36 (4), 61–71

De Mello, L. R. (1997): Foreign direct investment in developing countries and growth: a selective survey, in: *The Journal of Development Studies* 34 (1), 1–34

DFID (Department for International Development) *et al*. (2004): The Africa conflict prevention pool: an information document: a joint UK approach to preventing and reducing conflict in Sub-Saharan Africa, London; online: http://www.dfid.gov.uk/pubs/files/acppinfodoc.pdf (accessed 18 Aug. 2008)

Duinker, P. N. / L . A. Greig (2006): Scenario analysis in environmental impact assessment: improving explorations of the future, in: *Environmental Impact Assessment Review* 27 (3), 206–19

Dupasquier, C. / P. N. Osakwe (2005): Foreign direct investment in Africa: performance, challenges, and responsibilities, Addis Ababa: African Trade Policy Centre (Work in Progress 21); online: http://www.uneca.org/atpc/Work%20in%20progress/21.pdf (accessed 11 Nov. 2008)

Engelbrecht, J. A. et al. (1996): Alternate futures for 2025: security planning to avoid surprise; online: http://csat.au.af.mil (accessed 28 July 2008)

Gaßner, R. / K. Steinmüller (2006): Narrative normative Szenarien in der Praxis, in: F. E. P Wilms (ed.), Szenariotechnik: Vom Umgang mit der Zukunft, Bern: Haupt Verlag, 133–44

Gallup, J. L. et al. (1998): Geography and economic development, Cambridge: National Bureau of Economic Research (NBER Working Paper 6849); online: http://www.nber.org/papers/w6849 (accessed 12 Nov. 2008)

George, A. L. / A. Bennett (2005): Case studies and theory development in the social sciences, Cambridge: MIT Press

Godet, M. (2006): Creating futures: scenario planning as a strategic management tool, Paris: Economica

Godet, M. / P. Durance (2007): Prospective Stratégique: Problèmes et Méthodes, Paris: Laboratoire d'Innovation, de Prospective Stratégique et d'Organisation (Cahier 20); online: http://www.cnam.fr/lipsor/lips/conferences/outils.php (accessed 10 July 2008)

Godet, M. / F. Roubelat (1996): Creating the future: the use and misuse of scenarios, in: *Long Range Planning* 29 (2), 164–71

Gordon, T. J. (2003a): Cross-impact analysis, in: J. C. Glenn / T. Gordon (eds.), Futures Research Methodology, Version 2.0, Washington, DC: ACUNU Millennium Project

– (2003b): The delphi method, in: J. C. Glenn / T. Gordon (eds.), Futures Research Methodology, Version 2.0, Washington, DC: ACUNU Millennium Project

– (2003c): Trend impact analysis, in: J. C. Glenn / T. Gordon (eds.), Futures Research Methodology Version, 2.0, Washington, DC: ACUNU Millennium Project

Greeuw, S. C. H. et al. (2000): Cloudy crystal balls: an assessment of recent European and global scenario studies and models, Copenhagen: European Environmental Agency

Größler, A. (2006): Szenarioanalysen mit System-Dynamics-Modellen: in F. E. P Wilms, Szenariotechnik: Vom Umgang mit der Zukunft, Bern: Haupt Verlag, 93–105

Heijden, K. van der (2005): Dreaming With BRICs: The Path to 2050, Global Economics (Paper 99)

Hives, A. (2007): The current state of scenario development; online: http://profuturists.org/content/view/166/33 (accessed 15 July 2008)

Hughes, B. B. / E. E. Hillebrand (2006): Exploring and shaping international futures, Boulder, Colo.: Paradigm Publishers

IGD / FES (Institute for Global Dialogue / Friedrich-Ebert-Stiftung) (2004): Southern Africa 2020: five scenarios, Johannesburg: Institute for Global Dialogue, Friedrich-Ebert-Stiftung

IMF (International Monetary Fund) (2008): World economic outlook: financial stress, downturns, and recoveries; online: http://www.imf.org/external/pubs/ft/weo/2008/02/pdf/c1.pdf (accessed 20 Oct. 2008)

Kahane, A. (1992): The Mont Fleur scenarios: what will South Africa be like in the year 2002?; online: http://www.gbn.com/ArticleDisplayServlet.srv?aid=455 (accessed 30 June 2008)

Kahn, H. / A. J. Wiener (1967): The year 2000: a framework for speculation on the next thirty-three years, New York: MacMillan

Kosack, S. / J. Tobin (2006): Funding self-sustaining development: the role of aid, FDI, and government in economic success, in: *International Organization* 60 (1), 205–43

Kosow, H. / R. Gaßner (2008): Methoden der Zukunfts- und Szenarioanalyse: Überblick, Bewertung und Auswahlkriterien, Berlin: Institut für Zukunftsstudien und Technologiebewertung (IZT WerkstattBerichte 103)

Landeta, J. et al. (2008): Results of a delphi survey in drawing up the input-output tables for Catalonia, in: *Technological Forecasting and Social Change* 75, 32–56

Masini, E. (2006): Rethinking futures studies, in: *Futures* 38 (10), 1158–68

Maxwell, S. / P. Engel et al. (2003): European development cooperation to 2010, London: Overseas Development Institute (ODI Working Paper 219); online: http://www.edc2010.net/pubs/pdf/wp219.pdf (accessed July 21, 2008)

Meadows, D. et al. (2004): Limits to Growth: the 30-Year Update, White River Junction, Vt: Chelsea Green Publishing Company

Mercer, D. (1995): Scenarios made easy, in: *Long Range Planning* 28 (4), 81–86

Miller, K. D. / H. G. Waller (2003): Scenarios, real options, and integrated risk management, in: *Long Range Planning* 36, 93–107

National Intelligence Council (2004): Mapping the global future: report of the national intelligence council's 2020 project, Washington, DC: Government Printing Office; online: http://www.dni.gov/nic/NIC_2020_project.html (accessed 13 March 2008)

Nordfors, L. (2006): Scenarios for crisis management, in A. Ricci / E. Kytoèmaa (eds.), Faster and more united? The debate about europe's crisis response capacity, Brussels: European Commission: External Relations Directorate General, 311–25

Notten, P. van (2006): Scenario development: a typology of approaches, in: Think scenarios, rethink education, Paris: Organisation for Economic Cooperation and Development

OECD (Organisation for Economic Cooperation and Development) (2008): International development statistics online; online: http://www.oecd.org/document/33/0,2340, en_2649_34447_36661793_1_1_1_1,00.html (accessed 12 Aug. 2008)

– (2002a): Foreign direct investment for development: maximizing benefits, minimizing costs, policy brief; online: http://www.oecd.org/dataoecd/61/12/2763043.pdf. (accessed 12 Aug. 2008)

– (2002b): OECD guidelines toward environmentally sustainable transport, Paris

OECD /AfDB (Organisation for Economic Cooperation and Development / African Development Bank) (2008): African economic outlook 2007/2008, Paris

Phillips, L. M. (2008): International relations in 2030: the transformative power of large developing countries*,* Bonn: Deutsches Institut für Entwicklungspolitik (Discussion Paper 3/2008)

Porter, M. E. (1985): Competitive advantage: creating and sustaining superior performance*,* New York: The Free Press

Ralston, B. / I. Wilson (2006): The Scenario-Planning Handbook: a practitioner's-guide to developing and using scenarios to direct strategy in today's uncertain times, Mason, Ohio: Thomson Scientific

Rueda-Sabater, E. et al. (2006): Rehearsing for the future: the world and development in 2020, Washington, DC: World Bank

Schoemaker, P. J. H. (1993): Multiple scenario development: its conceptual and behavioral foundation, in: *Strategic Management Journal* 14 (3), 193–213

Schulz, H. (2007): Political institutions and foreign direct investment in developing countries: does the sector matter?; online: http://www.polisci.upenn.edu/faculty/faculty-articles&papers/Schulz_FDI.pdf (accessed 16 Aug. 2008)

Schwartz, P. (1996): The art of the long view: planning for the future in an uncertain world, New York: Currency Doubleday

Schwartz, P. / J. A. Ogilvy (1998): Plotting your scenarios, in: L. Fahey / R. M. Randall (eds.), Learning from the future: competitive foresight scenarios, 57–80

Shell International (2005): The Shell global scenarios to 2025: the future business environment: trends, trade-offs, and choices; online:http://www.shell.com/home/content/aboutshell/our_strategy/shell_global_scenarios/previous_scenarios/previous_scenarios_30102006.html (accessed 31 July 2008)

– (2003): Scenarios: an explorer's guide; online: http://www.shell.com/home/content/aboutshell/our_strategy/shell_global_scenarios/scenarios_explorers_guide/scenario_explorers_guide_30102006.html (accessed 31 July 2008)

– (2002): People and connections: global scenarios to 2020: public summary; online: http://www.shell.com/home/content/aboutshell/our_strategy/shell_global_scenarios/previous_scenarios/previous_scenarios_30102006.html (accessed 31 July 2008)

– (1996): Global scenarios 1995–2020; online: http://www.shell.com/home/content/aboutshell/our_strategy/shell_global_scenarios/previous_scenarios/previous_scenarios_30102006.html (accessed 31 July 2008)

– (1993): Global scenarios 1992–2020; online: http://www.shell.com/home/content/aboutshell/our_strategy/shell_global_scenarios/previous_scenarios/previous_scenarios_30102006.html (accessed 31 July 2008)

UN (United Nations) (2008a): Draft outcome document of the follow-up international conference on financing for development to review the implementation of the Monterrey Consensus; online: http://www.un.org/esa/ffd/doha/draftoutcome/DraftOutcomeDoc_English.pdf (accessed 16 Oct. 2008)

– (2008b): The Millennium Development Goals report 2008, New York

– (2002): Report of the international conference on financing for development, New York

UNCTAD (United Nations Conference on Trade and Development) (2008a): Foreign direct investment online; online: http://www.unctad.org/Templates/Page.asp?intItemID=1923&lang=1 (accessed 12 Aug. 2008)

– (2008b): The least developed countries report 2008: growth, poverty, and the terms of the development partnership, New York, Geneva

– (2008c): Trade and development report 2008: commodity prices, capital flows, and the financing of investment, New York, Geneva

– (2008d): World investment directory: volume X Africa, New York, Geneva

– (2008e): World investment report 2008: transnational corporations and the infrastructure challenge, New York, Geneva

– (2007a): Asian foreign direct investment in Africa: towards a new era of cooperation among developing countries, New York, Geneva

– (2007b): World investment prospects survey 2007–2009, New York, Geneva

– (2007c): World investment report 2007: transnational corporations, extractive industries, and development, New York, Geneva

– (2006): World investment report 2006: FDI from developing and transition economies: implications for development, New York, Geneva United Nations

– (2005): Economic development in Africa: rethinking the role of foreign direct investment, New York, Geneva

UNDP (United Nations Development Programme) (2007): Human development report 2007/2008: Fighting climate change: human solidarity in a divided world, New York: Palgrave MacMillan

UNECA (United Nations Economic Commission for Africa) (2008): Economic report on Africa 2008: Africa and the Monterrey Consensus, Addis Ababa

UNIDO (United Nations Industrial Development Organization) (s. a.): Foresight methodologies-training module 2; online: http://www.strast.cz/dokums_raw/foresightmethodologies_1168269318.pdf (accessed 16 July 2008)

UN Population Division (Population Division of the Department of Economic and Social Affairs of the United Nations Secretariat) (2006): World population prospects: the 2006 revision and world urbanization prospects: the 2005 revision; online: http:// esa.un.org/unpp (accessed 18 Aug. 2008)

Vimard, P. (2008): Africa and its demographic challenge: an uncertain future, Paris: Agence Française de Développement (Working Paper 62)

Wack, P. (1985a): Scenarios: shooting the rapids, in: *Harvard Business Review* 63 (6), 139–50

– (1985b): Scenarios: uncharted waters ahead, in: *Harvard Business Review* 63 (5), 73–89

Warrener, D. (2004): Synthesis paper 3: the drivers of change approach; online: http://www.odi.org.uk/RAPID/projects/R0219/docs/Synthesis_3_final.pdf (accessed 18 July 2008)

Wilkinson, A. J. et al. (2008): Futures thinking and practices in Africa: 1980s to 2008: Scenario Practioners' Review, Cape Town: World Economic Forum; online: http://www.weforum.org/pdf/scenarios/AF_SupplyChain.pdf (accessed 25 July 2008)

Wilson, D. / R. Paurushothaman (2003): Dreaming with the BRICs: the path to 2050, Global Economics Paper 99; online: http://www2.goldmansachs.com/ideas/brics/book/99-dreaming.pdf (accessed 17 July 2008)

Wilson, I. (1998): Mental maps of the future: an intuitive logics approach to scenarios, in: L. Fahey / R. M. Randall (eds.), Learning from the future: competitive foresight scenarios, New York: Wiley and Sons, 81–108

World Bank (2005): World development report 2005: a better investment climate for everyone, Washington, DC

WEF (World Economic Forum) (2006): China and the world: scenarios to 2025; online: http://www.weforum.org/en/initiatives/Scenarios/ChinaScenarios/index.htm (accessed 25 May 2008)

– (2005): India and the world: scenarios to 2025; online: http://www.weforum.org/en/initiatives/Scenarios/IndiaScenarios/index.htm (accessed 25 May 2008)

Publications of the German Development Institute

Nomos Verlagsgesellschaft

Neubert, Susanne / Waltina Scheumann / Annette van Edig / Walter Huppert (Hrsg.): Integriertes Wasserressourcen-Management (IWRM): Ein Konzept in die Praxis überführen, 314 p., Nomos, Baden-Baden 2004, ISBN 3-8329-1111-1

Messner, Dirk / Imme Scholz (Hrsg.): Zukunftsfragen der Entwicklungspolitik, 410 p., Nomos, Baden-Baden 2004, ISBN 3-8329-1005-0

Brandt, Hartmut / Uwe Otzen: Armutsorientierte landwirtschaftliche und ländliche Entwicklung, 342 p., Nomos, Baden-Baden 2004, ISBN 3-8329-0555-3

Liebig, Klaus: Internationale Regulierung geistiger Eigentumsrechte und Wissenserwerb in Entwicklungsländern: Eine ökonomische Analyse, 233 p., Nomos, Baden-Baden 2007, ISBN 978-3-8329-2379-2 (Entwicklungstheorie und Entwicklungspolitik 1)

Schlumberger, Oliver: Autoritarismus in der arabischen Welt: Ursachen, Trends und internationale Demokratieförderung, 255 p., Nomos, Baden-Baden 2008, ISBN 978-3-8329-3114-8 (Entwicklungstheorie und Entwicklungspolitik 2)

Qualmann, Regine: South Africa's Reintegration into World and Regional Markets: Trade Liberalization and Emerging Patterns of Specialization in the Post-Apartheid Era, 206 p., Nomos, Baden-Baden 2008, ISBN 978-3-8329-2995-4 (Entwicklungstheorie und Entwicklungspolitik 3)

[Books may be ordered through bookshops]

Schriftenreihe bei Routledge

Brandt, Hartmut and Uwe Otzen: Poverty Orientated Agricultural and Rural Development, 342 p., Routledge, London 2007, ISBN 978-0-415-36853-7 (Studies in Development and Society 12)

[Books may be ordered through bookshops]

Springer Verlag

Scheumann, Waltina / Susanne Neubert / Martin Kipping (Hrsg.): Water Politics and Development Cooperation: Local Power Plays and Global Governance, 416 p., Berlin 2008, ISBN 978-3-540-76706-0

[Books may be ordered through bookshops]

Berichte und Gutachten

[Price: 9,63 Euro; books may be ordered directly from the DIE or through bookshops. This publication series was terminated and superseded by the new publication series **"Studies"**, starting November 2004.]

Studies

39 *Kosow, Hannah / Robert Gaßner:* Methods of Future and Scenario Analysis: overview, assessment, and selection criteria, 120 p., Bonn 2008, ISBN 978-3-88985-375-2

38 *Klingebiel, Stephan et al.:* Donor Contribution to the Strengthening of the African Peace and Security Architecture, 124 p., Bonn 2008, ISBN 978-3-88985-373-8

37 *Brüntrup, Michael et al.*: Monitoring Economic Partnership Agreements, 260 p., Bonn 2008, ISBN 978-3-88985-372-2

36 *Brüntrup, Michael et al.*: Politique commerciale et développement agricole au Sénégal : Les enjeux de la politique d'importation pour certains secteurs agricoles face aux accords sur le commerce international, 157 p., Bonn 2008, ISBN 978-3-88985-369-2

35 *Vatterodt, Martina*: The Implementation of the Paris Declaration on Aid Effectiveness by the United Nations: progress to date and need for further reforms, 90 p., Bonn 2008, ISBN 978-3-88985-370-7 (German edition: ISBN 978-3-88985-364-6 – Studies 31)

34 *Liebig, Klaus*: Municipal Borrowing for Infrastructure Service Delivery in South Africa – ACritical Review, 120 p., Bonn 2008, ISBN 978-3-88985-368-4

33 *Faust, Jörg et al.*: Political Fragmentation, Decentralization and Development Cooperation: Ecuador in the Latin American Context, 129 p., Bonn 2008, ISBN 978-3-88985-361-5

32 *Scheumann, Waltina / Elke Herrfahrdt-Pähle* (Hrsg.): Conceptualizing Cooperation on Africa's Transboundary Groundwater Resources, 375 p., Bonn 2008, ISBN 978-3-88985-364-6

31 *Vatterodt, Martina*: Die Umsetzung der Paris-Erklärung zur Wirksamkeit der Entwicklungszusammenarbeit durch die Vereinten Nationen: Stand und weiterer Reformbedarf, 94 p., Bonn 2007, ISBN 978-88985-359-2 (English edition: ISBN 978-3-88985-370-7 – Studies 35)

30 *Loewe, Markus et al.:* The Impact of Favouritism on the Business Climate: A Study on Wasta in Jordan, 216 p., Bonn 2007, ISBN 978-3-88985-358-5

[Price: 10,00 Euro; may be ordered directly from the Institute or through bookshops]

Discussion Paper

21/2008 *Liebig, Klaus / Gerhard Ressel / Ulrike Rondorf:* Dutch Disease: ökonomische Prozesse und Implikationen für die Entwicklungszusammenarbeit, 28 p., Bonn 2008, ISBN 978-3-88985-411-7

20/2008 *Wiemann, Jürgen:* Neuausrichtung der Entwicklungspolitik der Bundesländer vor dem Hintergrund der veränderten internationalen Rahmenbedingungen, 55 p., Bonn 2008, ISBN 978-3-88985-408-7

19/2008 *Kästner, Antje:* From Chaos to Pragmatism? The Domestic Dimension of Russian Foreign Policy 1991–2008, 61 p., Bonn 2008, ISBN 978-3-88985-409-4

18/2008 *Pomerleano, Michael:* Developing Regional Financial Markets – The Case of East Asia, 24 p., Bonn 2008, ISBN 978-3-88985-406-3

17/2008 *Stamm, Andreas:* Development Studies – Development Research: Germany's Position in International Perspective, 50 p., Bonn 2008, ISBN 978-3-88985-410-0

16/2008: *Hampel-Milagrosa, Aimeé:* Gender Differentiated Impact of Investment Climate Reforms: A Critical Review of the Doing Business Report, 65 p., Bonn 2008, ISBN 978-3-88985-407-0

15/2008 *Müller-Kraenner, Sascha:* China's and India's Emerging Energy Foreign Policy, 19 p., Bonn 2008, ISBN 978-3-88985-405-6

14/2008 *Dosch, Jörn / Alexander L. Vuving*: The Impact of China on Governance Structures in Vietnam, 33 p., Bonn 2008, ISBN 978-3-88985-404-9

13/2008 *Schmitz, Hubert / Dirk Messner (eds.)*: Poor and Powerful – The Rise of China and India and the Implications for Europe, 63 p., Bonn 2008, ISBN 978-3-88985-402-5

12/2008 *Wagner, Christian*: Der Einfluss Indiens auf Regierungsstrukturen in Pakistan und Bangladesch, 33 p., Bonn 2008, ISBN 978-3-88985-403-2

11/2008 *Grimm, Sven:* Reforms in the EU's Aid Architecture and Management : The Commission is no longer the key problem: Let's turn to the system, 39 p., Bonn 2008, ISBN 978-3-88985-401-8

10/2008 *Berger, Axel:* China and the Global Governance of Foreign Direct Investment: The Emerging Liberal Bilateral Investment Treaty Approach, 41 p., Bonn 2008, ISBN 978-3-88985-400-1

10/2008 *Berger, Axel:* China and the Global Governance of Foreign Direct Investment: The Emerging Liberal Bilateral Investment Treaty Approach, 41 p., Bonn 2008, ISBN 978-3-88985-400-1

9/2008 *SHAO, Yuqun:* The EU's Central Asia Policy and its Implications for China, 26 p., Bonn 2008, ISBN 978-3-88985-399-8

[Price: 6,00 Euro; may be ordered directly from the Institute or through bookshops

Analysen und Stellungnahmen (ISSN 1434-8934)

7/2008 *Valencia, Adriana / Georg Caspary:* Hürden der ländlichen Stromversorgung mit erneuerbaren Energien

6/2008 *Scholz, Imme / Lars Schmidt:* Reduzierung entwaldungsbedingter Emissionen in Entwicklungsländern

5/2008 *Ashoff, Guido:* Die Umsetzung der Paris-Erklärung zur Wirksamkeit der Entwicklungszusammenarbeit: Wo steht Deutschland?

4/2008 *Brüntrup, Michael:* Steigende Nahrungsmittelpreise – Ursachen, Folgen und Herausforderungen für die Entwicklungspolitik

3/2008 *Chahoud, Tatjana*: Soziale Unternehmensverantwortung (CSR) und Arbeitnehmerrechte in der VR China

2/2008 *Kenneweg, Jochen*: Staatlichkeit und Governance: Herausforderungen in Südasien

1/2008 *Croissant, Aurel / Jörg Faust:* Staatlichkeit und Governance: Herausforderungen in Südostasien

[Analysen und Stellungnahmen free of charge available from the DIE.]

Briefing Paper (ISSN 1615-5483)

15/2008 *Pegels, Anna:* Financing for Development Series: Leveraging Private Investments in Climate Change Mitigation

14/2008 *Kapoor, Sony:* Financing for Development Series: Increasing Domestic Resource Mobilization by Tackling Tax Flight

13/2008 *Chahoud, Tatjana:* Financing for Development Series: Southern Non-DAC-Actors in Development Cooperation

12/2008 *Kubny, Julia / Erik Lundsgaarde / Raja Fügner Patel:* Financing for Developing Series: Foreign Direct Investment – A means to Foster Sustainable Development

11/2008 *Oschinski, Matthias:* Financing for Development Series: Are Cash Transfers a Suitable Alternative to Energy and Food Subsidies?

10/2008 *Liebig, Klaus / Peter Wolff:* Financing for Development Series: Development Finance by Regional Development Banks – Combining Regional Ownership with Multilateral Governance

9/2008 *Stürmer, Martin:* Financing for Development Series: Increasing Government Revenues from the Extractive Sector in Sub-Saharan Africa

8/2008 *Wolff, Peter:* Financing for Development Series: The Financial Crisis and Developing Countries

[Briefing Paper free of charge available from the DIE.]

A complete list of publications available from DIE can be found at:
http://www.die-gdi.de