SUSTAINABLE **FOREST**
MANAGEMENT NETWORK

RÉSEAU DE GESTION
DURABLE DES **FORÊTS**

Scenarios of the Forest Futures Project:
Why and How We Created Them, and How to Use Them

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1. What are Scenarios?

To quote Duinker and Greig (2007):

"Numerous definitions of scenarios exist, for example:

'…a description of a possible set of events that might reasonably take place. The main
purpose of developing scenarios is to stimulate thinking about possible occurrences,
assumptions relating these occurrences, possible opportunities and risks, and courses of
action' (Jarke et al., 1998);

'…an internally consistent view of what the future might turn out to be — not a forecast,
but one possible future outcome' (Porter, 1985);

'…a tool for ordering one's perceptions about alternative future environments in which
one's decisions might be played out' (Schwartz, 1996);

'…a set of reasonably plausible, but structurally different futures' (Van der Heijden,
1996); and

'…conjectures about what might happen in the future' (Cornish, 2004).

"The important commonality in these definitions is the idea that scenario-building does
not focus on making predictions or forecasts, but rather on describing images of the
future that challenge current assumptions and broaden perspectives."

2. Why We Created Scenarios

Literature addressing ways to think about and deal with uncertain futures portrays scenarios as
highly promising tools. Early users of formal scenario planning include the military (which
embraced war gaming as a powerful learning approach) and corporations (Royal Dutch Shell is
credited with significant development of and success with the scenario approach to strategic
planning from the 1970s on).

The Forest Futures Project of the SFM Network aims to inform strategic policy thinking about

Canada's forests and forest sector. The policy and strategy literature is firm on this point - the long-term future can not be forecast in any useful way. It is so fraught with uncertainty that statements describing what proponents consider most-likely future outcomes are sure to be wrong. The point of scenarios is this - policy thinking about how to progress in the near term in directions meaningful and sustainable for the long term is most strongly informed by creating and analyzing a range of alternative possible futures.

Here is a long quote from Brummell and MacGillivray (undated):

". . . scenarios are an approach to thinking about the future focusing on key uncertainties facing managers in making strategic decisions. Scenarios are a means to an end and not an end in themselves. Developing scenarios involves taking a wealth of information about the past and present, identifying patterns, and from that, . . . structuring coherent stories about the future. An organization can then use the scenarios to think through their [sic] strategic options. Scenarios are most useful when the external environment is complex and uncertain and key decisions involve major investments or have long term consequences. Complex environments typically involve non-quantifiable factors, where structural change is a component of the uncertainty and where systems have complicated feedback loops. Increasingly, systems thinking, which recognizes how behaviour within systems can lead to unanticipated feedback, is an important part of scenario thinking. For situations in which most of the variables are known and quantifiable, scenarios as described here are not very useful. Similarly, for decisions with relatively short term outcomes, scenarios are usually not appropriate.

"The Value of Scenarios as a Product:

> - provide coherent "mental maps of the future"
> - make key assumptions explicit
> - force consideration of alternative futures
> - provide a context for developing and testing strategic options or policies
> - raise understanding of the broader business environment
> - provide a vehicle for communication
> - highlight uncertainty and risk in decision-making

"The Value of Scenario Planning as Process:

> - encourages shared learning and strategic and systems thinking
> - provides a forum for sharing views from all parts of a company
> - allows unconventional views and new ideas to surface
> - stimulates communication
> - encourages learning and adaptation to change

"Scenarios provide insight. And while the process is designed to produce scenarios, learning through the scenario planning process may actually be more valuable than the specific scenarios developed."
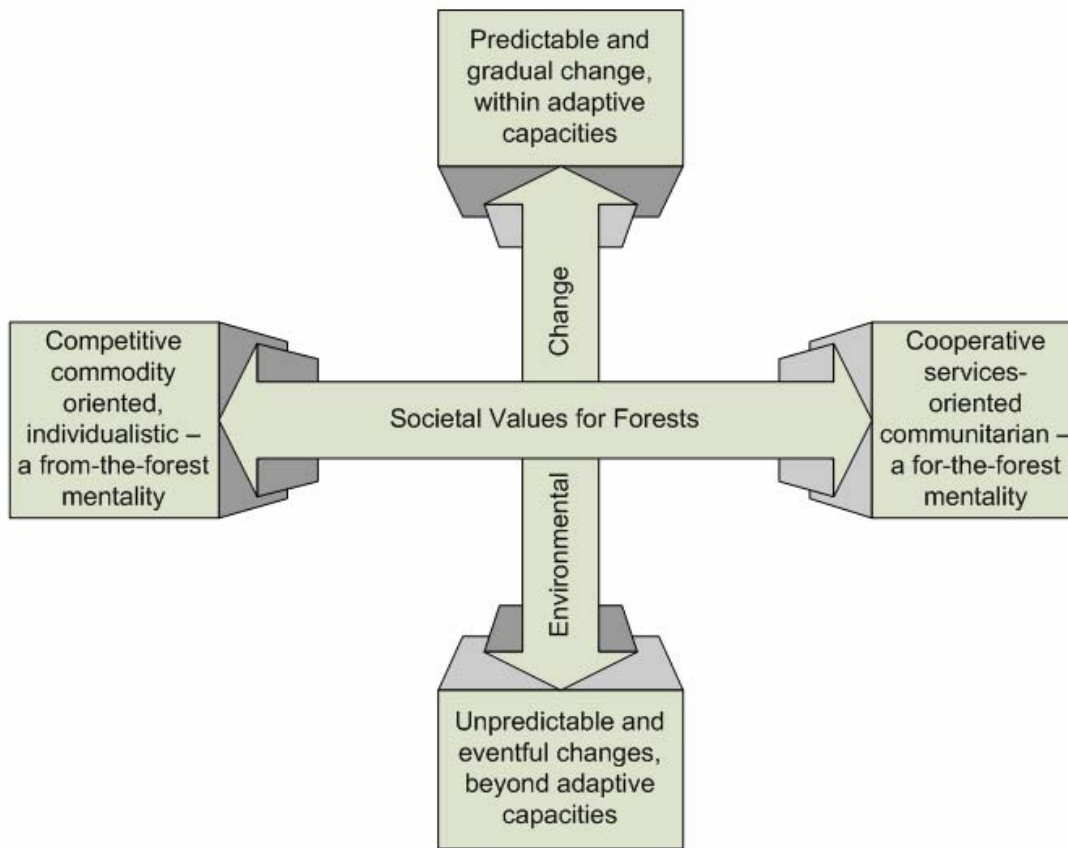
3. How We Created The Scenarios

The scenarios, up to this time of writing, have been created using the following steps:

(a)   <u>Drivers</u>. In workshop settings involving researchers, partners and other forest-sector leaders and stakeholders (March through June 2007), we first identified the main drivers of change associated with Canada's forests and forest sector. The drivers are all influential forces of change, and all have highly uncertain futures over the time frames considered by the Project (i.e., to 2050). The drivers retained for scenario construction are these:

>1. Global Climate Change
>2. Global Forest Products Demand and Canadian Wood Supply
>3. Invasive Species
>4. Geopolitics
>5. Global Energy
>6. Technology
>7. Governance
>8. Aboriginal Empowerment
>9. Air Pollution
>10. Conflict over Resources
>11. Society's Forest Values
>12. Demographics
>13. Industry Profitability

Short papers have been written for each driver to show how the driver influences the forests and forest sector, and to lay out possible futures for each driver.

(b)   <u>Scenario Axes</u>. We used the common approach of seeking four scenarios that are distinguished principally by divergent futures associated with two highly influential and highly uncertain drivers. We chose environmental change (dominated by climate change), and society's values for forests. The ends of the axes were characterized as shown in the figure below.

Predictable and gradual change, within adaptive capacities

Change

Competitive commodity oriented, individualistic – a from-the-forest mentality

Societal Values for Forests

Cooperative services-oriented communitarian – a for-the-forest mentality

Environmental

Unpredictable and eventful changes, beyond adaptive capacities

(c) Scenario Themes. Each scenario needs a title or name that captures its essence in a few words. This gives each one life and colour beyond what letter or numeral labels can give. Our tentative choices are these, subject to inevitable change:
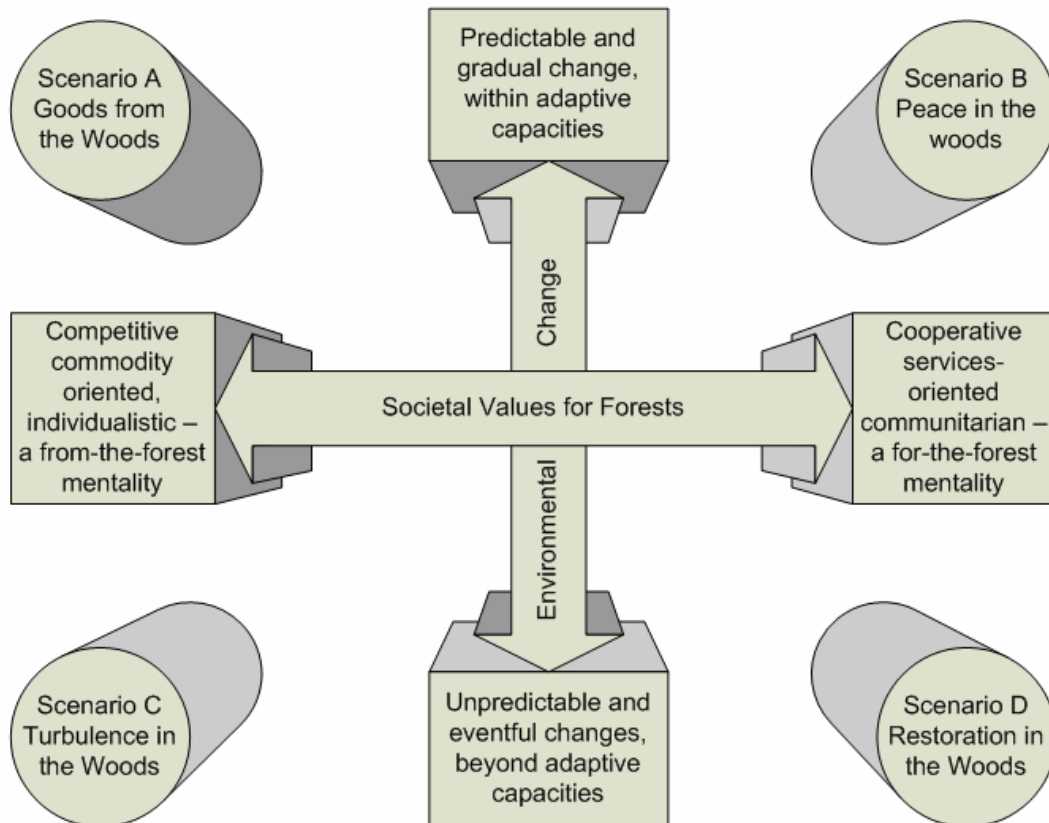
(d) Scenario Structure. At least for the purposes of initial drafting of the scenarios, we have chosen to prepare each one with a common structure. Each scenario has basically two parts. The first part describes a specific future for each driver, in turn. The second develops a response story for each of eleven themes, the entirety of which has a high degree of concordance with the CCFM Criteria and Indicators of Sustainable Forest Management (CCFM 2003):

Forest Ecosystem Sustainability
        Biodiversity
        Ecosystem Condition and Productivity
        Soil and Water
        Carbon Cycles

Social and Community Sustainability

Amenity Values
Participatory Processes
Forest-related Employment

Economic Sustainability
Wood Harvests
Wood-processing Industries
Harvests of Non-Wood Products
Markets for Forest Services

(e)　Scenario Style.　We have chosen to write the scenarios, at least initially, as future histories.　In this approach, the story is told as a history, using the past tense, as if the writer is situated in 2050 and is summarizing developments that occurred over the period 2000 to 2050.　The advantage of the future-history approach is that the story can be imbued with a richness of events, places, people, and commentaries, much like a real history can be written.　When scenarios are written in the future tense, such richness is impossible.

4. How to Use the Scenarios

4.1 Logical Consistency

The first question that should be put to each scenario deals with internal logic - is it logically possible (without reference to likelihood) that these events and trends could indeed unfold in reality?　If not, what part of the story needs to be changed?　Which parts could not possibly occur, given the way nature works and the antecedent parts of the story?

4.2 Local Manifestations

The second question we encourage is this: given such an overview description of trends and events at the global, national and sub-national levels, how would one craft a local description of trends and events that would be consistent with the larger story?　In other words, what would the local storyline be that fits with the national storyline?

4.3 Indicators

A third question would be: if this scenario actually turned out to be unfolding in reality, what would be need to track or measure to be sure?　Are we measuring or tracking the right things today to tell us whether the scenario is becoming reality?

4.4 Inevitability

A fourth question deal with whether we, in Canada or locally, have any "levers" to pull that could help us encourage or prevent a specific piece of the scenario from becoming reality.　For

example, on the question of climate change, can Canada itself have enough influence to the world's climate to be able to prevent an undesirable amount of change? Probably not. On the other hand, can Canada itself take control of its bioenergy future so that forests play a weak or strong role in providing renewable energy? Probably yes, to some degree. So, if a specific scenario threatened to become a reality, to what degree can Canadians, in aggregate, help secure the desirable parts and prevent the undesirable parts?

4.5 Outcome Desirability

A fifth question relates to whether one would want to prevent certain outcomes and encourage others to become reality. This is a clearly normative activity where one's values influence desirabilities for the future. Scenarios are immensely helpful to clarify what individuals really want for their own future and that of their successors. Remember too that preferences and values are likely to change over time, especially over a period of some 40 years, as depicted by the scenarios. Things that we feel are desirable today may not be so in the future.

4.6 Policy Implications

A sixth question addresses policy: if one wanted to prevent an undesirable part of the scenario from occurring, or at least adapt favourably if the undesirable trends/events took place, what actions and policies would be required? Similarly, if one wanted to ensure that a desirable part of a scenario did actually occur, what actions and policies would be required? This thinking applies not only to new policies (i.e., addressing themes not now addressed in current policy, e.g., forest co-management), but also to policy reform, where existing policies may to be changed (e.g., sustained timber yield).

4.7 What NOT To Do with the Scenarios

At all costs, one must avoid the tendency, as humanly natural as it is, to assign probabilities or likelihoods to any parts of the scenarios. If history teaches us anything, it is that some of the most least likely possibilities, at least apparently least likely, will indeed occur. For practical purposes of enlightening the thinking behind strategic policy options, we have no technical basis for judging, even qualitatively, the likelihood of long-term future events. So, to borrow a line from Arie de Geus, former Coordinator of Group Planning at Shell International Petroleum Company:

"The only relevant discussions about the future are those where we succeed in shifting the question from whether something will happen to what would we do if it did happen."

5. References

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