Environmental Assessment in Federations

Report prepared for the Forum of Federations

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***Annex I and II can be found on the Forum of Federations website:**
http://www.forumfed.org/post/environmental_assessment_dec2010.pdf

Executive Summary

This report examines how federal governments and their constituent units share responsibilities for and harmonize the application of environmental assessment.

The jurisdictions examined are: Australia, Austria, Canada, Germany, India, Switzerland, the United States of America and the European Union. A number of transit and transportation case studies have been selected to illustrate practices: the Tugun Bypass project, Australia; the Richmond-Airport-Vancouver Transit project, Canada; the Delhi Transit project, India; the Baltimore transit system, USA; and the Franklin County Transit Center, USA.

Each country has developed environmental assessment procedures that fit its particular governance structure. The nature of a federation determines to some extent the practices of sharing or dividing responsibilities for environmental assessment between the federal government and its constituent units. This in turn has influenced how environmental assessment is initiated and what type of action is subject to the process.

The general approach to environmental assessment is similar in all jurisdictions. The basic steps include a systematic evaluation of a proposed action to identify and predict potential impacts on the environment and how the impacts can be mitigated prior to taking a decision on whether to proceed. All jurisdictions have legislated environmental assessment processes at the federal level and in most cases in the constituent units as well. The legislation or regulations define the term "environment" or provide a definition of "environmental effect". In either case the definitions are broad, requiring the examination of an action's effects on the biophysical environment and on humans. Hence both health and socio-economic effects are generally examined.

Some countries have also recently introduced a process of strategic environmental assessment that applies the broad principles of environmental assessment to policies, plans and programs (USA, Austria and Germany for plans and programs, Canada for policies and Australia for fisheries management and some plans).

Environmental assessment has generally been situated in departments or agencies with environmental responsibilities. However, in some cases, separate offices have been created to oversee the administration of the process (Canada and USA).

There are two different decision-making models for environmental assessment:

- **Self-assessment model:** the authority responsible for a decision associated with an action (e.g. initiating a project, granting a permit or money) must complete an assessment before taking a decision (Austria, Canada, Germany, Switzerland, and USA). In this model, accountability and responsibility are spread among many different departments and agencies. Effective coordination of all decision makers is thus important to ensure process efficiency.

- **Single decision-making model:** the department or agency with responsibilities for the environment approves the environmental assessment and may authorize an action to proceed, often with conditions (Australia, and India). Departments and agencies with expertise or future regulatory responsibilities participate in the review, and hence coordination of their input is also needed.

The model used at the federal level is generally the same as the one used by the constituent units, but there are examples where the decision-making models differ between levels of government (Canada). This difference presents a challenge in harmonizing federal and constituent unit processes. In either model the proponent is generally responsible for preparing the environmental assessment documentation (in the USA the documentation is also prepared by the decision-making agency with input from the proponent); it is then reviewed by the decision-making body.

There is broad consistency in the application of environmental assessment to most major actions. However, the number of actions subject to environmental assessment varies considerably. There are three different approaches used to determine whether an action requires an environmental assessment:

- **Inclusion project list:** a list of projects specified in the legislation or regulations (Austria, Germany, India, and Switzerland) that automatically require an environmental assessment.
- **Screening process:** a case-by-case examination of each project to determine whether the potential effects warrant an environmental assessment (Australia, and Austria and Germany for projects that are specified in a discretionary annex to the legislation).
- **Exclusion project list:** a list of projects specified by regulation that do not require an environmental assessment (Canada, and USA). All projects except those that have been excluded require an assessment.

Countries that follow the first two approaches assess fewer projects and focus more on major projects. Those that have an inclusion project list also specify which projects are to be assessed by each level of government thus avoiding or minimizing the need to harmonize environmental assessment processes.

Different types of assessment that may be applied depending on the project size, its potential impact and/or public interest. The types of assessment have been defined in some countries by means of project lists (Austria and Germany and in Canada for some projects). In others, the types of assessment are determined on a case-by-case basis (Australia, Canada, India and USA). The types of assessment required by governments in each country are not necessarily the same. Thus, in cases where more than one environmental assessment process applies to the same project, the type of assessment required by each government is another factor that needs to be considered in harmonization.

In most jurisdictions the scope of a project to be assessed is clearly determined in advance as the project defined by the proponent. In some others, the scope may be limited

by the decision-making department or agency to the portion of the project that it might regulate or permit (Canada and USA). Agreement on the scope of the project or at least how the two governments will cooperate in reviewing different project components is also an important consideration in harmonization.

All jurisdictions require the examination of alternatives to varying degrees in an environmental assessment. In the transit case studies, some require consideration of alternatives to the project such as a choice of bus, light rail or heavy rail and not proceeding with the project, whereas others only consider alternative means of proceeding and examine different route alignments. Some jurisdictions are of the view that a strategic environmental assessment might be the appropriate means to address alternatives with the subsequent project environmental assessment being limited to a preferred alternative selected in the earlier process. Others (e.g., Ontario, Canada) are examining ways to address alternatives for transit projects through early planning and feasibility studies or at the pre-application stage of the environmental assessment thus also limiting the formal environmental assessment process to a review of the preferred alternative selected by the proponent.

Some jurisdictions (India, USA) require the need and justification of the project to be examined in the environmental assessment process. Others (Australia, Canada, Germany) may require the need and justification to be examined, particularly for large public sector projects and those of high public interest.

Some jurisdictions (Canada, USA) have introduced specific measures to streamline priority initiatives in the energy, transportation and infrastructure sectors. In some cases efficiency measures have been introduced to speed up the existing process without legislative amendments. For example, in Canada, a Major Projects Management Office was created to serve as a regulatory focal point for large natural resource projects to improve the performance of the regulatory process, including the environmental assessment process. Timelines have been introduced to varying degrees by different jurisdictions to improve efficiency and provide a greater degree of certainty and consistency in approach. These measures include, in some cases, timelines for decision-making and time periods for public consultation. However, timelines may differ between the federal government and its constituent units thus creating another factor that must be considered in harmonization. A few jurisdictions (British Columbia, Canada) have a formal pre-application process to allow proponents to interact with government agencies and departments involved in the assessment. Most others have informal arrangements for this type of interaction.

All jurisdictions have requirements for public consultation and involvement in the environmental assessment process. Many different techniques are used to involve the public; some of these are illustrated in the transit case studies. Approaches often vary between the federal government and its constituent units or in the case of the European Union, among its member states. Some countries (Austria, Germany, Switzerland) have appeal mechanisms primarily associated with the final decision on the environmental

assessment. In all jurisdictions examined, citizens can seek judicial review before the courts. In countries that belong to the European Union (Austria, Germany) matters can also be referred to the European Court of Justice for remedy as well as to the courts of the member states.

Coordination and collaboration within the same level of government is an important requirement in all the jurisdictions. Environmental assessment is a horizontal policy initiative that touches on the responsibilities of many different departments and agencies within each government. Thus, measures have been put into place in all jurisdictions to coordinate the involvement of at least all the decision-making departments and agencies with the objective of ensuring that only one assessment is completed for each project.

In countries that follow the single decision-making model, the input of other departments or agencies with subsequent permitting responsibilities is important to ensure that their expertise is considered and to expedite the subsequent regulatory process.

In jurisdictions that follow the self-assessment model the need for coordination is even more important since there are often multiple decision makers for each project. In such instances a lead agency is generally identified for each project with the responsibility for coordinating the input of other decision makers. Since the lead agency may vary from project to project, there is a greater need to develop government-wide, consistent coordination practices and procedures than in the single decision-making model. The diffusion of accountability among the various decision makers in the self-assessment model results in coordination challenges that often lead to delays in completing an environmental assessment.

Regardless of which decision-making model is followed, the linkage between the environmental assessment process and subsequent regulatory decisions is often not clear, resulting in duplication of information requirements, public consultation and overall effort.

Where the environmental assessment processes of both levels of government apply, governments have considered it desirable to harmonize each other's requirements. Such assessments, often referred to as joint assessments, are considered to be more efficient than two separate assessments of the same project. Generic agreements exist in some cases between the various governments (Australia, Canada) and in others, ad hoc arrangements are made on a project by project basis (USA). In some cases the constituent unit government defers the conduct of the assessment to the federal government and in others parallel assessments have been carried out because it was not possible to merge procedures (USA). Nevertheless, overlapping responsibility between the federal government and its constituent units is often cited as a reason for delays and inefficiencies in the environmental assessment process.

In other countries (Austria, Germany, India and Switzerland) framework legislation at the federal level is either incorporated into the legislation of the constituent units or implemented by them. In these cases, the legislation identifies the project types that are to

be assessed by each level of government. Thus, harmonization of environmental assessment processes has been established at the outset and there is little or no need for project-specific agreements between governments because both governments would rarely apply their process to the same project. However, challenges exist in ensuring consistency among the constituent units or, in the case of the European Union, among its member states.

On an international basis the need for harmonizing environmental assessment processes among countries is becoming more frequent as countries, particularly in Europe, implement the United Nations *Convention on Environmental Impact Assessment in a Transboundary Context*. In the case of linear projects such as pipelines, railways and highways that cross international borders, the need for greater consistency and cooperation in the approach to environmental assessment has resulted in a number of bilateral agreements under the framework of the Convention (Austria, Germany and Switzerland). These agreements also address situations where a project in one country may have environmental effects of a transboundary nature in a neighboring country.

Environmental assessment has evolved considerably since its first introduction in the United States with the *National Environmental Policy Act, 1969*. Pressures to improve efficiency and effectiveness of environmental assessment have caused all jurisdictions to review their procedures and practices with resulting amendments to legislation and issuance of new regulations and/or new guidance material. Australia made the most substantive change to improve process efficiency in 1999 by shifting from a self-assessment decision-making model to decision making by the environment minister. An independent review of the process in 2009 recommended further changes, including the introduction of independent environmental assessment panels (but no change to the current decision-making model). Canada has made a number of legislative changes since 1995, the most recent in 2010 resulting in a shift towards a single decision-making model for major projects. The European Union began its third review of its environmental impact assessment directives in 2009, and further changes that could affect member states are expected.

Federations are facing a number of common environmental assessment challenges and emerging issues. Some (Austria, Australia) are examining and/or making provisions to enable environmental assessment to play a more strategic role in reducing climate change and minimizing the effects of development on biodiversity. Some (Australia, Germany) are applying and encouraging greater use of strategic environmental assessment to examine broad developmental issues in regions in the hope that improvements will be made in the efficiency and effectiveness of subsequent project assessment. For those who have obligations to consult Aboriginal peoples, the integration of the duty to consult on the potential effects of a project on their existing or potential rights into the environmental assessment process is an ongoing challenge.

The 2008-09 economic recession placed even greater pressure on streamlining environmental assessment processes to improve their timeliness and efficiency. There is a growing frustration that environmental assessment is costly, causes delays in economic

development, has become overly complex and does not deliver on its objective as a means to achieve sustainable development. In federations this can be compounded by duplication of effort caused by overlapping responsibilities between the federal government and its constituent units. At the same time, citizens continue to expect opportunities to participate in environmental assessment processes and demand procedural fairness and transparency in decision-making. The greatest challenge of all is responding to these pressures while maintaining the quality of environmental assessments.

Keywords:

environmental assessment, federalism, jurisdictions, states, provinces, strategic environmental assessment, environmental impact assessment, strategic environmental assessment, exclusion project list, inclusion project list

Environmental Assessment in Federations

Introduction

The objective of this report is to review how federal governments and their constituent units in selected countries share responsibilities for and harmonize the application of environmental assessment. This report describes current requirements and practices. It focuses primarily on federal environmental assessment processes, but processes in some constituent units of each country (such as states or provinces) are also discussed. Transit and transportation case studies have been used to illustrate the application of environmental assessment where appropriate. Finally, a number of observations and conclusions are presented.

The report covers Australia, Austria, Canada, Germany, India, Switzerland, the United States of America and the European Union. A short description of environmental assessment legislation, practices and developments in each jurisdiction as of December 31, 2010, is included in Annex I.

The case studies selected are summarized in Annex II and include:

- Tugun Bypass project, Australia
- Richmond-Airport-Vancouver Transit project, Canada
- Delhi Transit project, India
- Baltimore transit system, USA
- Franklin County Transit Center, USA

Information presented in this report was obtained primarily from various government web sites. In addition, individuals were contacted in each country to clarify the author's understanding of the relevant legislative requirements and practices.

The Forum of Federations' Environmental Assessment Conference: An initial version was completed by the author and Peter Sherhols in May 2008. This served as a background document for an international conference on "Environmental Assessment in Federations: Current Dynamics and Emerging Issues," held by the Forum of Federations in Ottawa on September 13-15, 2009.

Additional information obtained from the presentations and ensuing discussions at the conference was used to revise the report. Subsequent developments in certain jurisdictions, up to the end of 2010, are also reflected in the present version.

The author is most appreciative of the time many individuals took to provide information and clarify points of misunderstanding. Any errors, omissions or misinterpretations in the descriptions of the requirements or practices of environmental assessment presented in this report are his sole responsibility.

1. Environmental Assessment in Federations – Context

Federalism is not always best, and there is no best version of federalism.[1]

Similarly, there is no best version of environmental assessment. Each country has developed environmental assessment procedures that fit its particular governance structure. The nature of a federation determines to some extent the practices of sharing or dividing responsibilities for environmental assessment between the federal government and its constituent units. This in turn has influenced how environmental assessment is initiated and what type of action is subject to the process.

Definition of Terms

In this study, the term "federal" government refers to the government with national responsibilities. The term "federal" is used in Austria, Canada, Germany, Switzerland and the USA. In India it is the Central or Union government and in Australia the Commonwealth government.

The term "constituent units" refers to states (Australia, USA, and India), territories (Australia, Canada, and India), provinces (Canada), *Länder* (Austria and Germany) and cantons (Switzerland).

The term "environmental assessment" or "assessment" is used throughout to refer to the process or procedure that has been enshrined in legislation in the jurisdictions examined in this study. There are a few features worth noting that may have influenced how responsibilities for environmental assessment differ between the federal governments and their constituent units.

One feature that characterizes a federation is that there are two orders of government established by a Constitution that spells out the power or authority of each, usually dividing responsibilities between the two. There are two different approaches to the distribution of powers within federations, referred to as dualist and integrated models. The dualist model typically assigns different jurisdictions to each order of government, each of which then administers its own programs. The integrated model provides for many shared responsibilities, and constituent units often administer nationally legislated programs or laws.[2] In all dualist models, there are some shared or concurrent powers in which both orders of government can make laws. Where powers are concurrent, national law is often paramount, meaning it prevails in the event of conflict. However, in older constitutions such as Canada where the environment has not been defined, both orders of government may have different legal powers that permit them to introduce legislation that would apply to the same project. In such cases, both governments have to approve a project or specific

1 George Anderson, *Federalism: An Introduction*, Oxford University Press, 2008, p. 8.
2 Anderson, *Federalism*, pp. 21-22.

aspects of it in order for it to proceed. In the integrated model, the federal government sets framework legislation which the constituent units can complement, but not contravene with their own legislation. The constituent units usually deliver the programs in these areas. Canada and the USA are largely dualist federations, and Austria and Germany are integrated federations. India and Switzerland have strong features of both. Australia is largely dualist is its approach but also has many areas of concurrency.[3]

In Australia, Canada and the United States, federal governments and most of their constituent units have introduced environmental assessment legislation, thus requiring governments to develop cooperative arrangements where possible to avoid duplication of effort. In Austria, Germany, and Switzerland, framework legislation has been developed that is implemented by or replicated in the legislation of the constituent units. In these situations, there is little overlap as legislation defines which level of government is responsible for specific actions. Cooperation is essential in the development of the legislation but is rarely required in implementation since there is little overlapping responsibility. Both Austria and Germany, as members of the European Union, have developed environmental assessment legislation that is consistent with European Union directives. The European Union, although not a federation, has a number of federal characteristics. It establishes rules that bind member states but does not carry out any environmental assessments itself. Switzerland, while not a member of the European Union, has been influenced by its approach in developing its own legislation. In India, the national legislation identifies the types of projects requiring approval by the Union government, leaving the remaining projects to be assessed by the constituent units. However, the state and territory governments have a defined role for certain aspects of the environmental assessment process at the federal level.

The relevance of federalism for this policy field was well reflected in the 2009 independent review of the Australian *Environment Protection and Biodiversity Conservation Act (EPBCA), 1999*:

> Sometimes, the responsibilities of these two levels of government overlap, creating inefficiencies and duplication. State and territory regimes may also have different approaches to environmental issues (such as threatened species listing) compared with the Act [the *EPBCA*]. Different administrators can make different judgments, often resulting in tensions. This is not always, or even usually, a bad outcome. The strength of the Australian Federation is the creative policy tension brought about by the federal system.[4]

3 Anderson, *Federalism*, p. 22.

4 Australian Government. The Australian Environment Act: Report of the Independent review of the Environment Protection and Biodiversity Conservation Act, 1999, October, 2009, paragraph 2.13: http://www.environment.gov.au/epbc/review/publications/final-report.html

2. Introduction to Environmental Assessment

Environmental assessment is a relatively new policy instrument that began in 1970 with the passage of the *National Environmental Policy Act* in the USA. It is now well institutionalized in more than 100 countries and practised by many international organizations such as the World Bank.

Environmental assessment is a systematic process of evaluating and documenting information on the potentials, capacities, and functions of natural systems and resources in order to facilitate sustainable development planning and decision making in general, and to anticipate and manage the adverse effects and consequences of proposed undertakings in particular.[5] It has been recognized as an essential process to protect the environment and a means to achieve sustainable development. The term is often used interchangeably with *environmental impact assessment*, which is defined as a process of identifying, predicting, evaluating and mitigating the biophysical, social, and other relevant effects for proposed projects and physical activities prior to major decisions and commitments being made. [6] In this report, the term environmental assessment is generally used since it is the broader of the two.

"The environment is where we live; and development is what we all do. The two are inseparable."
Gro Brundtland, *Our Common Future*, 1987.

Environmental assessment is a planning instrument that provides a link between the environment and development, involving governments, developers and citizens in the decision-making process for major actions. In many countries it has had a profound effect on the way in which decisions are made because of the opportunities provided for the public to participate in and influence the outcome of a proposed development. It has become an important tool to permit sound scientific knowledge to be incorporated into decision making. It has nevertheless become increasingly apparent that the science must be complemented by an understanding of the social and political processes that surround it. As such, it is a practice that is both an art and a science.

Environmental assessment has evolved considerably in the past 40 years has done so as governments have become increasingly concerned about how developments can pollute the environment, affect our climate, change the use of land, affect biodiversity, increase the loss of species and affect the livelihood and well-being of its citizens. These issues are included in many environmental assessments, particularly those involving large-scale developments. Benefits also include improved design of development projects, empowering community development through public participation and improving coordination among participating departments and agencies at various levels of government. But as experience has been gained, pressures have mounted to do a better job of protecting the environment and at the same time ensure that decisions can be made in a

5 Sadler, Barry, *International Study of the Effectiveness of Environmental Impact Assessment*, 1996, Canadian Environmental Assessment Agency and the International Association for Impact Assessment, p. 13.
6 *Ibid.*

timely manner. Increasingly, concerns have grown to look at means of improving process efficiency. Various reviews examining the effectiveness of environmental assessment have been undertaken in the jurisdictions examined and measures for continuing improvement have been identified.

Initially the focus was on examining the impacts of individual projects. In more recent years, efforts have been made to address means of incorporating environmental factors earlier in the decision-making process. This is known as strategic environmental assessment. It offers the prospect of improved policies, plans and programs and also the potential for conducting environmental assessments of actions that emanate from these initiatives in a more expeditious way – in some instances at a more simplified level of assessment or in other cases, not at all.

The procedural steps that are recognized as the basis for an environmental assessment or a strategic environmental assessment are shown in Figure 1. In this study, an undertaking, development, project, proposal or action is referred to either as an action or a project. All eight jurisdictions follow the basic steps described below, with minor variation. Essentially, the process follows a structured approach of fact finding, analysis with public involvement, the preparation of a report to assist in decision making and future follow-up and monitoring. A decision that an action is not likely to have significant adverse environmental impacts allows further decisions to be taken by governments that may involve allowing land to be used for the proposed action, providing funding and the issuance of various permits and authorizations.

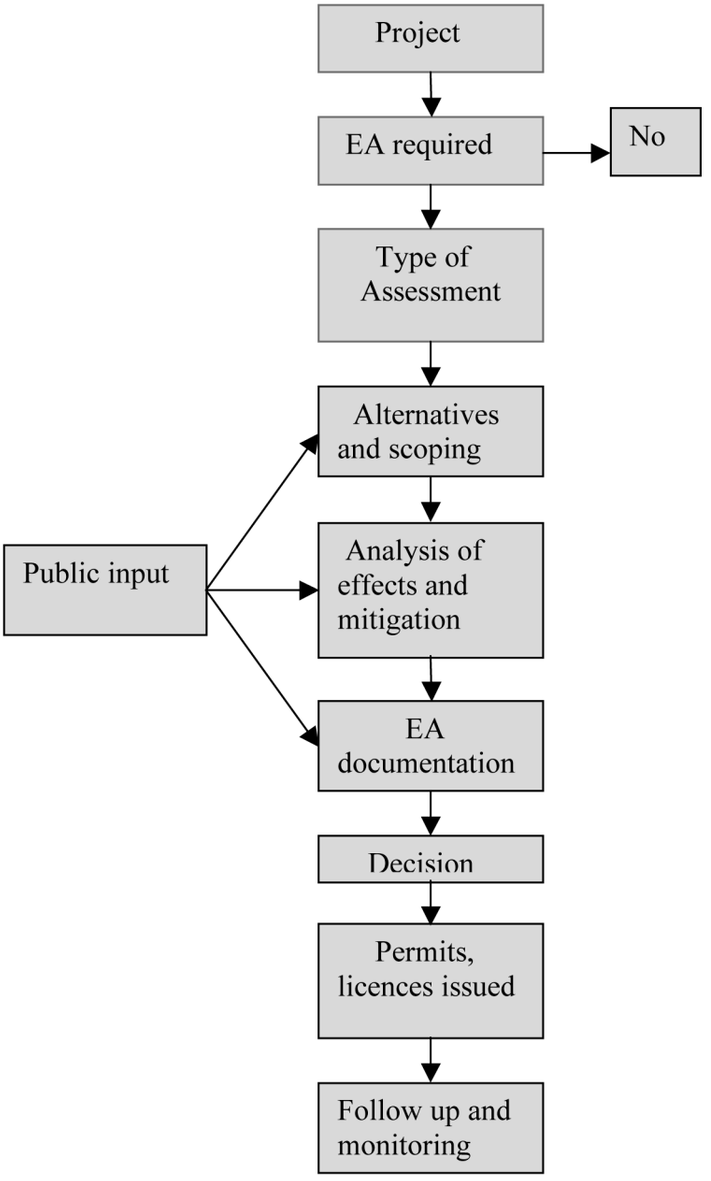
The various process steps outlined in Figure 1 are as follows:

- **The project**: The process begins with a short description of an action that allows a determination as to whether it requires an assessment. Actions that do not require an assessment are excluded either because the government does not have jurisdiction or because they are likely to have no significant adverse impact. The latter determination is made either on a case-by-case examination or on the basis of lists of actions that do not require an assessment. Where such exclusion lists have been developed, the actions listed have been determined in advance to have no significant adverse environmental effects. Criteria have been developed to assist in determining what may constitute a significant adverse effect.
- **Type of assessment**: Once it is decided that an assessment is required, the type of assessment is determined. This may depend on either the nature of the action, the environmental sensitivity of the environment where it is to be located, or both. This may range from a simple preliminary assessment and a finding of no significant impact to an extensive review by an independent body through a public hearing process – an inquiry-like proceeding.
- **Alternatives and scoping:** Alternatives to the proposal may be considered and alternative means of carrying out the proposal are almost always examined. The interaction of the life cycle of the action from construction, operation to decommissioning is examined with the existing features of the environment that

could be affected. Through a process that is often referred to as scoping, the ecosystem and socio-economic components that require further study and analysis are selected. The object of a scoping process is to identify the main issues to be studied and to eliminate those that require no examination or a less detailed one.

- **Analysis of effects and mitigation:** The issues identified for study are analyzed and predictions made regarding the potential effects of the planned action. Mitigation measures are proposed to reduce or minimize environmental effects.
- **Environmental assessment documentation:** The results of the analysis are presented in a report often referred to as an environmental impact statement or environmental assessment report. The public usually has various opportunities to participate in the assessment – at the scoping stage, the analysis of the impacts and in the review of the final report.
- **Decision:** A decision on the results of the environmental assessment is made on the basis of the final report and public input with a statement on the significance of the environmental effects. Most often decisions are made by departmental or agency officials with major, or decisions of high public interest, made by a minister or ministers. In some cases actions are rejected because the adverse environmental effects are considered to be significant.
- **Issuance of permits and licenses:** The environmental assessment decision, if an approval is granted, is usually considered to be an approval in principle. In most cases actions receive approval with conditions that are to be incorporated in subsequent licences and permits. Further information and detailed design specifications are generally required at this stage. These subsequent licensing steps are part of the overall regulatory process required for most projects and are in addition to the environmental assessment.
- **Follow-up and monitoring:** The action is then monitored for compliance with conditions and in some cases to verify the accuracy of the original predictions on the environmental impact of the proposal.

Figure 1: Environmental Assessment Process



3. Decision Making in Environmental Assessment

This section describes how different organizational structures have been created in governments to administer the environmental assessment process. It also describes the variation among jurisdictions on who takes the decision on the results of an assessment. Coordination and harmonization among authorities and between governments is very much affected by who the decision-maker is for environmental assessment. This is discussed further in sections 7 and 8.

In North America, new agencies have been created to oversee implementation of the process, but they have no authority to approve a project after completion of an environmental assessment. Elsewhere, responsibility for overall administration of environmental assessment is housed within the department responsible for environmental matters. These departments may or may not have authority to approve the project after an environmental assessment is completed.

In the USA, the Council on Environmental Quality, reporting to the President, was created with the passage of the *National Environmental Policy Act, 1969*. In Canada the Canadian Environmental Assessment Agency was created with the proclamation of the *Canadian Environmental Assessment Act, 1995*. It reports to the Minister of the Environment but is separate from the Department of the Environment. In both the USA and Canada it was considered important for the environmental assessment administration to have some degree of independence from departments that have decision-making responsibilities for actions they either initiate or approve. In Canada, some provinces have established separate offices to administer the process (British Columbia) or an office to oversee a certain feature of the process (Quebec's public hearings office). In Austria, Germany, Switzerland, Australia and India, environmental assessment has been assigned to departments with environmental responsibilities.

In the European countries and North America, the decision following completion of an environmental assessment is based on the principle of "self assessment" – the department or agency that takes a decision allowing an action to proceed must ensure that an environmental assessment is completed and the results considered before taking a decision. These departments are generally referred to as the competent authority or the responsible authority. Where one of these becomes responsible for coordinating or leading the assessment they are usually referred to as the lead agency. The principle of self assessment evolved on the basis that environmental assessment is a process that should be applied early in planning an action. It was therefore appropriate for those who are most involved in the early planning to be responsible for incorporating environmental considerations along with other factors into the final decisions. In Canada, with legislative amendments made in 2010, the environmental assessment review of certain major projects is completed by the Canadian Environmental Assessment Agency rather than by the responsible authorities. This represents a departure from self-assessment.

In most countries the proponent prepares the environmental assessment documentation for review by the decision-making authority. In the USA, however, the lead agency prepares the documentation, with input from the proponent. In some cases the agency may be both the proponent and decision maker, for example, on highway projects.

In Australia and India, ministers of the environment have authority to allow an action to proceed following completion of an environmental assessment. In Australia, decision making changed from a self-assessment model to one where the Minister of the Environment has authority to approve an environmental assessment. Constituent units in Europe and the USA follow the self-assessment model, whereas in Canada and India, ministers of the environment or officials within the environment department of the constituent units generally have approval authority. Similarly, in Australia this authority rests with the minister responsible for the environmental assessment process which may reside in the environment or planning ministries of the states and territories.

To temper criticism that self assessment was like the "fox guarding the chickens," governments have introduced some checks and balances into the process. For example in the USA, the Environmental Protection Agency reviews environmental impact statements and some environmental assessments issued by federal agencies, and then makes its comments public. These reviews are intended to assist agencies in improving their analysis and decisions. The Environmental Protection Agency can also refer a matter to the Council on Environmental Quality for resolution if it disagrees with the findings of another federal agency. Similarly, in Switzerland the Federal Environment Office reviews environmental assessment documents and provides its comments to the competent authority. In the event of a disagreement between the Office and the responsible authority, the matter is resolved according to a dispute resolution mechanism under the *Government Organization and Administration Act*. In Austria experts are engaged to provide independent advice to the competent authority. In Canada, actions that have potential for significant adverse environmental effects can be reviewed by an independent environmental assessment panel appointed by the Minister of the Environment. Decisions on its recommendations are taken by Cabinet rather than the responsible authority. In such instances the self-assessment principle no longer applies as it is Cabinet that makes the decision rather than the responsible authority.

In India and Australia, although the environment department or the environment minister has decision-making responsibility for environmental assessments, independent advice can also be provided. India appoints independent experts to review all its environmental assessments. In Australia, for large or projects of high public interest, an environmental assessment may be reviewed by an independent public inquiry that provides advice to the environment minister. However, this has not occurred in practice. A 2009 independent review of the Australian environmental assessment process recommended greater use of independent review panels similar to the Canadian practice (see Annex I, Australia).

For countries that follow a self-assessment model, accountability for decisions is spread among many different departments. In some countries, practices and procedures

including public consultation vary from department to department while still following the overall requirements of the legislation. In countries where decision making has been given to the Minister of the Environment, accountability is clearer and process consistency from project to project is likely to be greater.

4. Actions Requiring an Environmental Assessment

The types and numbers of actions requiring an environmental assessment vary greatly among the different countries and in some cases within the same country. This section shows the variation in application of environmental assessment and describes the different types of assessment that may apply to a proposed action.

In most counties an action may be subject to an assessment in any of these cases:

- if it requires a permit or authorization from an authority of the federal government
- if funding is sought,
- if federal land is to be affected
- if he action is initiated by a federal authority

However, in Australia, the application of environmental assessment at the federal level is defined differently. An assessment is required for actions that are determined to be likely to have a significant impact on a matter of national environmental significance (world heritage properties, national heritage places, wetlands of international importance, threatened species and ecological communities, migratory species, national marine areas, nuclear actions, and the Great Barrier Reef Marine Park). It is also required if it is determined that an action is likely to have a significant impact on the environment on Commonwealth land/or where actions that Commonwealth agencies initiate are likely to have a significant impact on the environment.

Two main approaches are used to decide whether an environmental assessment is required once it has been determined that the government has authority for the action. In Austria, Germany, India and Switzerland, specific lists provide different thresholds for projects requiring an environmental assessment (an inclusion approach – see text box below).

In Austria, an example of listed highway projects requiring an environmental assessment is:

1. construction of new federal roads or their subsections, except for additional interchanges,
2. extension of an existing federal road from two lanes to four or more lanes over a continuous length of 10 kilometres or more,
3. construction of a second carriageway over a continuous length of 10 kilometres or more

This approach is also outlined in the European Union directives. In Austria and Germany, project lists have been developed for actions that are consistent with European Union directives on environmental impact assessment and strategic environmental assessment. Switzerland examines each project on its list, conducts a preliminary assessment and then determines if a more in-depth environmental impact report is required.

In North America, rather than developing inclusion lists, all projects are subject to environmental assessment unless excluded (exclusion approach). In Canada, one exclusion list regulation has been developed that lists the projects not subject to the process for all departments (see text box below).

> Example of a type of project in the Canadian *Exclusion List Regulations*:
>
> Article (9): The proposed decommissioning of a building with a footprint no more than 1000 sq. metres if the project:
>
> (a) is not to be carried out within 30 metres of a water body; and
> (b) does not involve the likely release of a polluting substance into a water body

In the USA, each agency can develop its own exclusion list that is unique to its nature of business. In Canada and the USA, excluded projects are limited to those that are considered to have insignificant impacts. A variation of the list approach has also been used in Canada whereby major projects on a list automatically require a more extensive review (the *Comprehensive Study List Regulations*).

In Australia, each action is screened to determine if it is likely to have a significant impact; if so, an environmental assessment is required. This decision is made by the environment minister. At the state and territory level, variations exist among governments using either a list approach or a case-by-case screening to determine if an action requires assessment. Projects requiring assessment at the Commonwealth level may or may not be subject to assessment by the constituent units.

The factors that are included in an environmental assessment vary depending on the size of the project and its environmental setting. Each country has defined various types of assessment. The terms to describe them also vary. In Canada, for example, an assessment may be conducted as a screening, a comprehensive study, or a review by an environmental assessment panel or a mediator. (Note that in most countries the term screening is a procedure to determine whether a project requires an environmental assessment. In Canada a screening is a type of assessment in its own right.) The vast majority of projects in Canada undergo a screening. In the USA, projects are assessed as an environmental assessment and, if there is no finding of insignificant impacts, would also require preparation of an environmental impact statement. In Austria the action may be assessed through a simplified procedure or require an environmental impact statement. Germany

has three possible types of assessment – an environmental assessment, a general preliminary examination or a site-specific examination. In Australia, projects can be assessed on the basis of preliminary information, an assessment on referral information, an assessment by an environmental impact statement or a public environment report or by a public inquiry. In Switzerland, all projects listed in the annex to its environmental impact assessment regulation undergo a preliminary assessment and then a more substantive environmental impact report if there is a potential for significant environmental impacts. The different types of assessment that may be possible at the federal level may not be the same in the constituent units, thereby adding an additional factor for consideration when harmonizing the processes between different levels of government.

The approach selected to determine whether an action requires an environmental assessment also seems to influence the overall number of assessments completed. Canada has a comprehensive registry of all projects assessed by its federal responsible authorities and categorized by the type of assessment applied to each project. In fiscal year 2006-2007,[7] there were 5,352 projects initiated as a screening, 12 as a comprehensive study and four by a review panel. In the USA[8] at the federal level, 557 actions required an environmental impact statement in 2007, and it is estimated that approximately 50,000 actions were reviewed as an environmental assessment with findings of no significant impact. In Austria[9] the estimated number of projects assessed by the federal government was in the range of 10 to 20 once additions were made in 1999 to the project lists requiring environmental impact assessment. In Australia[10], from 2000 to 2008 a total of 2,696 referrals (337 a year on average) were made to the Minister of the Environment of which 603 actions (75 a year on average) required approval. In Switzerland,[11] 53 projects required an environmental impact report in 2003.

Although the above is not a comprehensive statistical analysis of actions subject to environmental assessment, it would seem that the approach of establishing lists of projects that require an assessment, or the approach of screening each application, results in fewer assessments being conducted per year. This in turn likely provides a greater focus of resources on the larger, more significant projects, while exempting smaller, less significant projects from the environmental assessment process.

Examination of the transit case studies (Annex II) also illustrates a variation in the number of actions that are subject to an environmental assessment by each level of

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7 Canadian Environmental Assessment Agency, Performance Report, 2006-2007: www.tbs-sct.gc.ca/dpr-rmr/2006-2007/inst/eaa/eaa04-eng.asp#Statistical_Summaries

8 Council on Environmental Quality: http://ceq.hss.doe.gov/and personal communication

9 *Ibid.*

10 Australian Government Department of the Environment, Water, Heritage and the Arts, Independent Review of the Environment Protection and Biodiversity Convention Act, 1999, 2009: http://www.environment.gov.au/epbc/review/publications/ interim-report.pdf

11 Switzerland Department of Environment, Transport, Energy and Communications, Environmental Impact Assessment: www.bafu.admin.ch/uvp/index.html?lang=fr

government. In three cases only the federal government process applied and in one case the project was assessed on a voluntary basis (see text box below).

Transit and Transportation Case Studies (see Annex II)

- Tugun Bypass Project, Australia – a 7 kilometre, four lane motorway reviewed jointly by the Federal government and two States
- Richmond-Vancouver-Airport Rapid Transit, Canada – 19.5 kilometre light rail project reviewed jointly by the federal and British Columbia governments
- Delhi Metro, India – a 294 kilometre rapid transit system was subject to a voluntary process similar to the federal process
- Baltimore Region Corridor Study, USA – a 16.8 kilometre rapid transit system subject to only a federal environmental impact statement
- Franklin County Transit Center, USA – a small project subject to only a federal environmental assessment

5. Scope of the Assessment

This section describes how jurisdictions define the term "environment", describes issues associated with determining the scope of the project to be assessed, the consideration of alternatives and whether the need and justification for a project are addressed in environmental assessment processes.

Environmental assessment legislation in these jurisdictions defines the term "environment" or provides a definition of "environmental effect". In either case the definitions are broad, requiring or permitting the examination of an action's affects on the biophysical environment and on humans. Hence, both health and socio-economic effects are generally examined.

In India the *Environmental Protection Act* states the "*environment includes water, air and land and the inter-relationship which exists among and between water, air and land, and human beings, other living creatures, plants, micro-organisms and property.*"

One of the earliest decisions that must be taken is to determine the scope of the project to be assessed. For example, if the government of a constituent unit seeks funding from the federal government to provide passenger shelters for a new transit system, is the entire transit system subject to a federal assessment or only the passenger shelters? Similarly, if approval is sought for the federal government to issue a permit for a water intake for an industrial plant, is the entire industrial plant or only the water intake subject to federal assessment? Furthermore, how does the federal government address situations such as

these where the government of the constituent unit may not be applying its environmental assessment process to the proposed action? Such decisions have often been the subject of litigation in Canada and the USA.

In Canada, until recently the courts granted responsible authorities considerable discretion to determine the scope of a project to be assessed. They frequently narrowed the environmental assessment to a component of the larger project. In 2010, the Supreme Court of Canada[12] ruled that the scope of a project to be reviewed under the Act was the project proposed by the proponent. Amendments to the *Canadian Environmental Assessment Act* made later in 2010 restored the discretion to determine the scope of a project for the assessment but gave the Minister of the Environment authority to make this determination rather than the responsible authority. In some cases where the involvement of the federal government could have been narrowly scoped, harmonization agreements have led to joint assessments that examine the responsibilities of both levels of government. These agreements allow for the scope of the project to be broad, and in such cases it has not been necessary for the federal government to decide on the scope of the project to be assessed.

In jurisdictions where project lists have been created to define which projects are subject to an environmental assessment, determining the scope of the assessment is simpler. The project size determines whether an assessment is required; if so, the assessment is completed for the whole of the project. However, care still needs to be taken given judicial precedence that has been created, for example in cases such as the Grosskrotzenburg thermal power station[13] in Germany. The European Court of Justice ruled that additions or extensions to existing projects should be subject to environmental impact assessment if their size or scale or other factors meet the requirements for a new project of that type. This implied that member states must interpret the European Union environmental impact assessment directives as having wide scope and broad purpose.

The consideration of alternatives to undertaking an action has been viewed as a fundamental feature of most environmental assessment processes. This is especially the case for public sector projects such as transit projects where alternatives to the preferred choice might examine different modes of transportation, for example, bus, boat, light rail or heavy rail systems. Alternative means might examine different routes and surface or sub-surface alignments. In other types of projects such as mining there are usually no alternatives to the project other than not proceeding. However, alternative means might examine different technologies of extraction (open pit versus sub-surface mining) and different processing technologies. In the jurisdictions examined in this study, consideration of reasonable alternatives is required in the assessment process. Some jurisdictions restrict this to different means of carrying out the action; others also examine alternatives to the action.

12 Supreme Court of Canada, Mining Watch Canada v. Canada (Fisheries and Oceans) [2010].

13 GHK, Technopolis, Evaluation on EU Legislation – Directive 85/337/EEC (Environmental Impact Assessment, EIA) and Associated Amendments – Final Report, January, 2008 www.ec.europa.eu/enterprise/dgs/doc/eval/eia.pdf

However, this can be a challenging and time-consuming task when the number of possible alternatives is large and the number of parties that need to be consulted is even greater. Most jurisdictions have found it necessary to develop approaches for collaboration and consultation with the various levels of government involved in such projects, citizen groups and the business community. The selection of alternatives can be accomplished early in project planning so that the environmental assessment document may be able to focus on fewer alternatives or a preferred alternative. Or, alternatives to and alternative means may be addressed within the environmental assessment process. For example, in the Baltimore Region Corridor Transit Study considerable effort was made to consult with stakeholders on alternatives to and alternative means to meet the purpose and need for the project. This involved examination of various routes within a broad corridor and different transit modes. It took six years, from the beginning of scoping meetings, to complete the draft environmental impact statement and select a preferred alternative (see Annex II).

In transit and transportation planning, project design may be more than just a means of moving people in the most expeditious manner. Such projects are likely to create a footprint for future growth in an urban area as intensified development will follow a well designed transportation network. Hence, consideration of alternatives becomes an important part of the planning process given the future implications of such projects. In Europe, where strong planning traditions exist, the European Union directive on strategic environmental impact assessment applies to transportation projects. It offers the potential for environmental considerations to be more thoroughly incorporated into planning documents and for future environmental impact assessments to focus more on the preferred alternative.

In the cases examined in this study, various planning and feasibility studies appeared to have been undertaken well before the environmental assessment process began. In the environmental assessment of the Baltimore Region Corridor Transit Study, alternative routes and means of transportation were part of the assessment. For the Richmond-Airport-Vancouver transit project, alternatives were examined prior to commencement of the formal environmental assessment. Consideration of alternatives in transportation planning is a standard practice. The extent to which they are considered prior to or as an integral part of the assessment process is likely to be an issue of ongoing debate and discussion.

Not all jurisdictions require a proponent to respond to the issue of need and justification for a project. The rationale for this examination is to allow decision makers to determine whether an action may be justified even in situations where the environmental impacts may be significant. Decision makers inevitably may need to make tradeoffs. This consideration appears to be more of a North American and Australian practice where both the purpose and need for the project are usually addressed in the environmental assessment. Switzerland modified its legislation and *Environmental Assessment Ordinance* in 2007, eliminating this requirement. Examples of the need and justification for two of the case studies examined in Annex II are included in the text box below.

The need for the Baltimore rapid transit system:

- Growth and development in the region has continued at higher rates than the transit system; it would improve travel and access conditions and anticipate future demands
- Increased travel is causing congestion and the project would help free road space
- Travel delays would be reduced and new opportunities for increased passenger capacity and connections with other transportation systems would be provided
- The Baltimore region is struggling to meet federal health standards for air pollution; it would help the region meet both its air quality and its economic development goals
- The project would provide a feasible mode of transport for commuters while improving the efficiency and effectiveness of the current transit system

The justification for the Tugun Bypass project:

- Road-user benefits (savings in vehicle operation cost, travel times and reduced accidents)
- Community benefits (enhanced amenities for nearby communities, improved pedestrian and cycle facilities and opportunities for public transit systems)
- Economic benefits (additional economic activity from construction)
- More efficient movement of freight and increased accessibility
- Environmental benefits (opportunities to protect and manage valuable ecological areas through habitat compensation)

In the transit studies examined, the main factors determining the need for a project were reduced travel times, improved facilities for commuters, economic benefits from construction activity and improved accessibility, improved air quality and freeing up space on existing roads.

6. Procedural Issues

This section describes measures that governments have taken to improve their environmental assessment process and to streamline the process for priority projects, how timelines are applied, the concept of pre-application procedures, opportunities for public involvement and appeals of decisions.

Environmental assessment has evolved considerably through the introduction of measures to streamline the process and improve or maintain quality. Australia, in particular, made the most substantive changes to its process in 1999 by moving from a self-assessment model to a single decision-making model. This was done largely to improve efficiency. Its independent review completed in 2009 will likely lead to further legislative changes.

Canada has made a number of legislative changes since 1995, the most recent in 2010 resulting in a shift towards a single decision-making model for major projects. The parliamentary review launched in 2010 may see further changes in this direction in the future. The USA environmental assessment process has continued to evolve since its inception in 1970 through regulatory changes, but its fundamental approach and decision-making model have remained intact. India introduced comprehensive changes to its legislation in 2006 identifying which level of government would be responsible for the conduct of assessments by project type. The European Union began its third review of its environmental impact assessment directive in 2009 and further changes may result. Austria and Germany have in turn amended their processes to comply with amended European Union directives. Switzerland, in 2008, modified its process to provide a greater focus on the types of projects requiring environmental assessment.

In Australia some of the states have "projects of state significance" whereby the assessment process is streamlined to provide for all the required approvals and permits. Queensland has a Coordinator-General to carry out that task (see section 7).

The USA has also taken some initiatives in this regard at the federal level. For example, the Deepwater Port Act established an expedited licensing process for authorizing deep-water liquid natural gas ports that requires the environmental assessment process to be completed within one year. Additional time may be taken if supplemental information is required from the applicant. The lead agency's documentation must serve for all federal agencies with decision-making responsibilities. Also, the Federal Energy Regulatory Commission, which issues permits for onshore liquid natural gas facilities, has a pre-filing process that includes initiation of the environmental assessment review prior to the filing of an application. There is a formal interagency agreement with 10 federal agencies that commits the agencies to foster a more efficient review of energy projects, including a commitment to work together concurrently under a schedule established through consultation among them. The Nuclear Regulatory Commission has amended its procedures to consolidate the environmental assessment process into one review rather than the requiring a full review both before construction and before operation of a nuclear power plant. Generally, all agencies have increased their early involvement in the environmental assessment process for oil and gas development on federal lands and for natural gas transmission pipelines in the interest of expediting the process without losing the expected degree of environmental protection.

In Canada, the Ontario government issued a regulation in June 2008 (see text box below) to expedite environmental assessments of transit projects, a priority area of the provincial government. This decision was in response to growing traffic congestion, particularly in the Toronto-Hamilton corridor, and the desire to provide rapid transit systems to replace increasing vehicle traffic. Essentially the regulation means that proponents would need to discuss alternatives to the project and alternative means with stakeholders and decide on a preferred alternative before the environmental assessment process is initiated. This would likely not eliminate the consideration of alternatives, but instead they would be addressed by proponents outside the formal process.

Ontario regulation to expedite transit environmental assessment

- the environmental assessment process commences after the proponent has selected the preferred alternative
- proponents are not required to provide the need for the preferred alternative
- proponents are not required to consult on the terms of reference (guidelines) for the assessment
- proponents do not need to assess different alternatives
- transportation plans do not require an environmental assessment
- the proponent is required to document consultations with the public, government agencies and aboriginal communities and its analysis of potential impacts
- timelines are established as follows: consultation and completion of documentation (four months), final public and agency review of documents and submission of comments (one month) and government decision (35 days)

Source: Transit Projects Regulation (Ontario Regulation 231/08)

Germany has considered streamlining its environmental assessment process, particularly for infrastructure and energy projects. Some changes of a procedural nature have been made, but streamlining or fast tracking of projects is limited by the need to be consistent with the European Union directives.

As governments introduced stimulus packages to respond to the 2008-09 economic recession, pressures to streamline environmental assessment have increased. In March 2009, Canada issued the *Infrastructure Projects Environmental Assessment Adaptation Regulations* and amended its *Exclusion List Regulations* to enable infrastructure projects to proceed more rapidly. These regulatory changes, which excluded a number of infrastructure projects from the environmental assessment process, were introduced as a temporary measure for a two-year period. In 2010, amendments to the *Canadian Environmental Assessment Act* made these temporary measures permanent. In the USA, the *American Recovery and Reinvestment Act of 2009* requires adequate resources to be directed to ensuring that environmental assessments are conducted on an expeditious basis and the Council on Environmental Quality has been given an enhanced oversight role to expedite reviews and ensure quality is maintained.

Timelines have been introduced in various steps of environmental assessment processes, in some cases through legislative or regulatory means. They are intended to provide greater certainty and predictability and to introduce accountability on the part of the decision makers. Their use varies considerably among the different jurisdictions examined. Most also have means of extending the timelines but there appear to be no means of enforcing timelines in cases where they are not met. Examples are illustrated in the text box below.

Examples of timelines in environmental assessment processes:

1. Australia:
   - Public consultation on draft recommendation report – 10 business days
   - Decision by Minister on whether project approval is required and on the process of assessment - 20 business days

2. Austria:
   - A time schedule is prepared on a case-by-case basis for each project and published on the internet

3. USA:
   - Timelines are specified for certain process steps, e.g. draft environmental impact statements are circulated for a minimum 45 day review

4. Canada:
   - Timelines for process steps for review panels are specified on a case-by-case basis in the terms of reference.

Formal pre-application procedures are not a feature of most of the environmental assessment processes examined. However, it is common practice for proponents to consult informally with the authorities responsible for the process prior to submitting an application or completing the environmental assessment documentation.

One example where a formal pre-application procedure has been introduced is in the province of British Columbia, Canada. It modified its environmental assessment process for all projects to allow for a pre-application phase before the formal process commences. The pre-application stage focuses on identifying issues to be addressed (scoping) in the assessment. The British Columbia *Environmental Assessment Act* only requires examination of the project as submitted. The onus is placed on the proponent to consult and select an appropriate preferred alternative.

During the pre-application stage the following steps take place:

1. The proponent develops terms of reference for the review (guidelines for the preparation of the environmental assessment documentation).
2. The terms of reference are made public for comment, revised as necessary by the proponent and approved by the Environmental Assessment Office.
3. There is considerable interaction with the proponent, government agencies and stakeholders.
4. The proponent completes the baseline studies and documentation required to submit an application for the review stage.

Once an application is submitted and accepted, the review stage of the process is governed by legislated timelines requiring the review to be completed in six months. Timelines can be extended if the proponent is asked to provide additional information or the proponent requests additional time. The Minister also has the discretion to extend the timelines under certain circumstances.

Meaningful public involvement has become an integral and essential feature of environmental assessment processes throughout the democratic world. Improved project design, better environmental measures and overall project acceptability are some of the key attributes to public involvement. It is inconceivable in most democratic countries that a major project would be approved without public input on its environmental acceptability. Practices range from information sessions organized by proponents to the formation of citizen advisory groups to independent hearings by people appointed from outside government. Various approaches taken in the case studies are summarized in the text box below.

Public consultation techniques used in the transit case studies:

- Open house meetings
- Workshops
- Public meetings
- Small group sessions
- Public advisory groups
- Public hearings
- Interactive web sites
- Written submissions and views

The possibility to appeal decisions varies among the jurisdictions. In Canada, India and the USA, formal mechanisms for appeal do not exist at the federal level. Citizens have the option of judicial review through the courts to address perceived inadequacies or violations of due process. This mechanism has been frequently used. Citizens also have the right to appeal to ministers to address their concerns about decisions taken but this is not a formalized process.

Other countries have introduced formal appeal mechanisms. In Austria, the *Federal Act on Environmental Impact Assessment* specifies the criteria that organizations must meet to be granted standing for an appeal. For example, citizen groups that have the support of at least 200 persons with voting rights in the municipality can be granted standing. The Act defines groups that may be granted standing. Among other requirements, they must be in place at least three years before an application is submitted. Decisions may be appealed to the Independent Environmental Senate, which is an independent federal authority. The Senate was established by separate legislation and is referenced in the *Environmental Impact Assessment Act* (article 40). In Australia, although there is no appeal process to a separate body, the *Environment Protection and Biodiversity Conservation Act* specifies that a person may request the Minister to reconsider a decision. Germany has an appeal procedure for the final decision for a project. In Switzerland, an appeal under certain conditions can be made for any decision under the Act. Environmental groups who have been active at the

federal level are entitled to appeal but must be recognized as legitimate groups by the Federal Council. Judicial reviews before the Courts are also possible in countries with appeal mechanisms

7. Coordination within Governments

Environmental assessment of any action is the beginning of the overall approvals process. Most initiatives require multiple permits and authorizations by various levels of government. This section addresses mechanisms that governments have put in place to allow departments and agencies with responsibilities or expertise for an action to participate in the assessment.

The environmental assessment process can serve as a means to identify all the required approvals and permits and provide the opportunity for each regulatory body to begin to identify its requirements. Although the assessment process generally does not gather all the detailed design information that might be required for the various approvals, it should result in a broad overview of the proposed action and a conclusion on whether it will have a significant impact. If a decision is taken to proceed with a project, more detailed information is generally required for subsequent permitting processes. However, a well coordinated assessment with active participation by all interested departments and agencies should result in informed decision making and a subsequent expedited regulatory process. In an examination of its environmental impact assessment process in 2000, the Austrian government made the observation: "The quality of information was higher than for conventional licensing procedures, and that while cooperation and coordination among the authorities was valuable, it was also time consuming."[14]

Various initiatives to improve the quality of environmental assessments and reduce the time required to complete them have focused on the issue of coordination and collaboration within governments. Effective coordination at each level of government is also important in any harmonization initiative. For jurisdictions that follow the self-assessment model, delays in initiating the environmental assessment process can take place while discussions ensue among different departments or agencies to determine which one will take the lead role in carrying out the assessment. This in turn can create further difficulties in harmonizing with constituent units in cases where a joint review may be possible. This is not a problem in countries such as India or Australia where the minister of the environment has decision-making responsibilities following completion of the assessment. In Austria, where the federal government is responsible for the environmental assessment of federal highways and high speed railways, the Minister of Transport has been designated as the lead authority for all such projects, thus eliminating any debate on who is to assume the lead role.

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14 European Union, Improving the Implementation of Environmental Impact Assessment, 2006: http://www.umweltbundesamt.at/fileadmin/site/umweltthemen/UVP_SUP_EMAS/IMP/IMP3-Project_subject_to_EIA.pdf

In Canada, federal legislation requires that any federal authority with specialist or expert information must make information or knowledge available upon request to the authority or authorities responsible for taking a decision. The Act provides for identification of an environmental assessment coordinator to coordinate participation of federal authorities in the process. The coordinator's responsibilities are to ensure that authorities fulfill their requirements in a timely manner and to coordinate their involvement with other jurisdictions. In spite of these requirements, the government found it necessary to issue *Regulations respecting the coordination by federal authorities of environmental assessment procedures and requirements* in 1997. These regulations are designed to improve the efficiency of the review process by outlining procedures and timelines for authorities to determine whether they might have a decision to take with respect to the action, to notify other authorities, to agree on the scope of the assessment and to agree on a schedule for the conduct of the assessment.

The Canadian government established a separate office in 2007 (the Major Projects Management Office) reporting to the Minister of Natural Resources to improve the performance of the federal regulatory system for large, capital-intensive, natural resource projects in collaboration with other federal departments and agencies. More specifically, it provides a single point of entry into federal regulatory processes for industry and all interested Canadians, develops project-specific agreements among federal departments and agencies, and advances the use of timelines and service standards. Its role is broader than environmental assessment and is expected to improve overall regulatory efficiency.

In the USA, the 2003 Task Force report on "Modernizing NEPA Implementation" examined among other matters the subject of both federal and intergovernmental collaboration. It observed that collaboration with stakeholders is important to help ensure that decision makers have the environmental information they need to efficiently make informed and timely decisions. It also found that although many agreed with the concept of collaboration, only a few reported a successful experience. It asked how such a generally acceptable idea can be so elusive to implement. Its recommendation to develop training and guidance led to the development of a handbook by the Council on Environmental Quality titled "Collaboration in NEPA, a Handbook for NEPA Practitioners,"[15] issued in 2007. Although it deals with collaboration among federal agencies it also addresses collaboration with states and tribal and local authorities as well as the public. It notes the benefits of collaboration, including avoiding duplication, but also observes that it is rarely inexpensive, easy or a quick fix to a problem. Federal agencies can turn to the US Institute for Environmental Conflict Resolution to get assistance in resolving disputes that arise in collaborative problem solving.

In Australia, where approval authority for an environmental assessment is assigned to the Minister of the Environment, there is still a need to coordinate input of federal departments. A single combined process has been established to ensure that permitting

15 Council on Environmental Cooperation, Collaboration in NEPA, *A Handbook for NEPA Practitioners, 2007*: http://ceq.hss.doe.gov/nepa/nepapubs/Collaboration_in_NEPA_Oct2007.pdf

authorities are involved in the assessment. Each department with subsequent regulatory responsibilities or expertise related to a project provides its views to the environment department within the timelines specified in the Australian process.

A few other unique coordination models also exist in governments of constituent units. In Australia, the state of Queensland in 1938 established the office of the Coordinator-General to encourage development and job opportunities through implementation of large-scale projects. The Coordinator-General plans, delivers and coordinates control of a program of works and planned developments. It operates as a separate legal entity to government under the state's *Development and Public Works Organization Act 1971*. With the inception of an environmental assessment process in Queensland, responsibilities for coordination and the assessment of large-scale projects were assigned to the Coordinator-General. The state's Environmental Protection Agency provides advice to the Coordinator-General on these assessments (see Annex I, Australia).

In Austria, where most of the environmental assessments are conducted by the *Land* governments, a comprehensive or consolidated licensing procedure has been developed. There is only one competent authority for each project that issues permits on behalf of all the other authorities. The other authorities take part in the process as co-operating authorities until after construction of the project is completed. At this point co-operating authorities may become competent authorities if they have ongoing responsibilities for matters such as inspection. The outcome of an application under this procedure is one decision that encompasses all the legal requirements for the project. No other decision or licence is required. This procedure has been cited as the most frequently expressed advantage of environmental assessment in Austria.

The case studies in Annex II describe how various levels of government have co-operated in conducting environmental assessments of transit and transportation projects. In some cases joint assessments were undertaken (Tugan By-pass and the Richmond-Airport-Vancouver Transit project) but the involvement of other levels of government occurred in all cases.

8. Harmonization with Other Governments

This section outlines how responsibilities for environmental assessment are shared between federal government and constituent units. Environmental assessment, because it applies to most major actions initiated by the private and public sectors, has potential for overlapping jurisdiction, duplication of work and friction among governments. This in turn can result in delays in taking decisions on projects and can affect the quality of information available for decision makers. This has resulted in the need for governments to work together in all aspects of environmental protection.

European Union directives on environmental impact assessment and strategic environmental assessment require each member state to implement the procedures through their

respective legislative processes. This has occurred in Austria and Germany. The directives do not differentiate between federations and non-federations, and consequently it is the responsibility of each member state to ensure that the requirements are respected through the combined legislation of the various levels of government.

The preamble to the European Union's environmental impact assessment directive states matters that "the principles of the assessment of environmental effects should be harmonized, in particular with reference to the projects which should be subject to assessment, the main obligations of the developers and the content of the assessment."[16]

Another objective of the directive is to reduce disparities among the environmental impact assessment laws in force so as to minimize any unfavorable competitive conditions that could affect the functioning of the common market. However, evaluations of the implementation of the directive and its amendments indicate that there are variations in the thresholds set for Annex II projects (those where some discretion applies in deciding whether an assessment is required), a lack of monitoring of environmental impact assessment activity, a variety of approaches to scoping, variations in the level of public involvement, a need for better coordination between the environmental impact assessment directive and other European Union directives and policies, a need for improved arrangements for consultation on transboundary impacts with neighboring countries, and a dearth of measures to facilitate control of the quality of environmental impact procedures (see, Annex I, European Union). This would suggest that consistency of practices among the Member states of the European Union has been difficult to achieve.

In Austria, Germany and Switzerland, federal framework legislation has been adopted or implemented by the constituent units, creating a consistent approach in each country. Projects subject to environmental assessment are listed in annexes to the legislation or by separate regulation. In addition, a clear determination is made as to which projects will be assessed by the federal and constituent unit governments. Consequently, overlapping jurisdiction between levels of government is rare and there is little need to develop harmonization agreements between governments.

Similarly, in India the central government lists which projects are subject to its environmental assessment process. The *Environmental Protection Act (1986)* provides the authority for the central government to coordinate state government actions, officers and other authorities. Decisions for projects under the authority of the central government are made with input from state and territory governments. Consequently, there does not appear to be any overlap of responsibilities.

In Australia and North America, framework environmental assessment legislation does not exist. Rather, many of the constituent unit governments have passed separate legislation. All the constituent unit governments in Australia and Canada have separate processes.

16 European Union Environmental Impact Assessment Directive, 1985: www.eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:31985L0337:EN:HTML

In the USA, 20 states have their own environmental assessment procedures. Consequently, projects are frequently subject to environmental assessment by both levels of government. Furthermore, the environmental assessment processes of the federal and constituent unit governments may be quite different. This has required arrangements to be developed to harmonize processes and cooperate to minimize duplication of work while ensuring that the requirements for each level of government are respected.

In 1996, the Council of Australian Governments (the peak intergovernmental forum in Australia, comprising the prime minister, state premiers, territory chief ministers and the president of the Australian Local Government Association) initiated a major review of the environmental roles and responsibilities of the various governments within the federation. The outcome of the review was formally approved in a Heads of Government Agreement on Commonwealth/State Roles and Responsibilities for the Environment. This served as input to the review of the federal environmental assessment regime and influenced the revised process established in the *Environment Protection and Biodiversity Conservation Act* promulgated in 2000. One of the main objectives was a more efficient and timely process.

These changes have created a different relationship between governments. The federal minister of the environment now has decision-making authority similar to the state and territory environment ministers. Consequently, it has become easier to enter into collaborative arrangements for environmental assessment, in part because fewer parties need to be involved. Agreements have been established among the governments on how an assessment will be conducted with the objective of having one assessment for each project that meets the requirements of both levels of government (see Tugun Bypass case study, Annex II). Also, environmental assessment processes of the constituent units can now be accredited by the federal government, allowing it to take its decision on the basis of an environmental assessment conducted by the state or territory. In order to be accredited, some constituent units needed to make legislative amendments to meet federal requirements.

In the USA many different agencies may be involved in leading an environmental assessment. A lead federal agency is identified the responsibilities for the action under review. The lead agency may designate other federal, state, local and tribal agencies that have legal jurisdiction or special expertise to be co-operating agencies. Memoranda of understanding are often developed to clarify roles and responsibilities. The lead agency cannot delegate its legal authority for issuing a record of decision or a finding of no significant impact at the completion of an assessment. The net result is the preparation of one assessment for the project with the lead agency serving as the primary contact for the review. Each cooperating agency then uses the assessment results to take its own decisions under its respective mandate. In some cases only the national process applies to a project although the other governments have input to the process (see Baltimore and Franklin County case studies, Annex II). In other cases joint reviews may be undertaken with state governments and in some instances parallel reviews may occur with each level of government conducting its own review. An example of this would be in Montana where strict timelines are in force which often cannot be met by the federal process.

In Canada, the Canadian Environmental Assessment Act encourages co-operation with the constituent units and provides authority to the Minister of the Environment to enter into agreements with them. All provincial governments have legislated environmental assessment processes. In addition similar processes are in place in northern Canada in Yukon, the Northwest Territories and Nunavut in accordance with land claim agreements with Aboriginal peoples. A few Aboriginal environmental assessment processes have also been established in southern Canada through land claim and self government agreements. The federal environmental assessment process is based on the principle of self assessment, but in the provinces the approval authority generally rests with the minister of the environment. In Ontario, where many smaller projects are conducted through a process of "class assessments," the department that initiates the action may take the decision provided the assessment has been conducted in accordance with the requirements of the "class" previously approved by the Environment Minister.

A Canada-wide Accord on Environmental Harmonization and a Sub-Agreement on Environmental Assessment were signed in 1998 by environment ministers from the federal, provincial and territorial governments. The sub-agreement makes provision for bilateral agreements to be developed and such agreements are in place with most provinces. One of the objectives of the sub-agreement is "to achieve greater efficiency and the most effective use of public and private resources, where assessment processes involving more than one jurisdiction are required by law, through a single environmental assessment and review process for each proposed project."[17]

The bilateral agreements are designed to provide for a "one-project-one assessment" process that meets the legal requirements of each government. Each agreement makes provision for cooperation and sharing of information and expertise. Each government would make its respective decisions on the basis of the same environmental assessment.

In Canada, there are no national standards or common criteria for environmental assessment. In any joint or co-operative review, each level of government can adjust its own process as long as the legal requirements of each are met. Consequently, the process and requirements will vary from project to project in joint assessments. However, there is no need for any of the governments to modify their legislation to achieve the concept of "one project-one assessment". Under the Canadian Environmental Assessment Act, the conduct of an assessment as a screening or comprehensive study may be delegated to a provincial government but not decision-making responsibilities. Provision is made for joint assessments to be carried out in the case of review panels.

The various governments in Canada have established an informal group called the Environmental Assessment Administrators to discuss issues of common interest and resolve problems. It meets annually, but the network permits frequent contact on a bilateral basis to address specific issues.

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17 Canadian Council of Ministers of the Environment, Environmental Assessment Sub-Agreement, 1998: www.ccme.ca/ourwork/environment.html?category_id=109

At the international level, the need for harmonization of environmental assessments has also arisen when countries examine projects that are of a transboundary nature (e.g. bridges, highways, railways) or have concerns that a project originating in one country could have impacts in another. This led to the development of the first international Convention to address these issues – the United Nations Convention on Environmental Impact Assessment in a Transboundary Context, 1991 (the Espoo Convention).[18] The Convention has been ratified by 41 European countries and Canada. Although signed by the USA, it has not been ratified. As a consequence, there are no examples of its implementation for Canada/USA transboundary issues. However, there are many examples of its implementation in Europe.

The principles of the Convention are consistent with good environmental assessment practices and contain provisions for notification, preparation of the environmental assessment documentation, consultation, decision making, post-project analysis, bilateral and multilateral cooperation and research programs. The Convention applies to any proposed activity that is considered likely to cause significant adverse transboundary impacts. A number of European countries have developed bilateral agreements with their neighboring states. Examples include agreements between Germany and Poland and between Switzerland, Austria and Lichtenstein. In federations such as Austria, Germany and Switzerland, although the focal point for the Convention is with the federal government, the constituent units are generally responsible for implementing the Convention since they complete the majority of the assessments. The federal governments provide an oversight role and represent their respective countries at various international meetings held to address matters associated with implementation of the Convention.

In 2003, a protocol on strategic environmental assessment[19] was developed under the Convention and entered into force in 2010. Its approach is similar to the environmental impact assessment process outlined in the Convention.

9. Challenges and Emerging Issues

As the previous sections of this report demonstrated, federations are facing a number of common environmental assessment challenges and emerging issues. Some are unique to federations; others would also apply to unitary states. The 2008-09 recession placed even greater pressure on streamlining environmental assessment processes to improve their timeliness and efficiency. There is growing frustration that environmental assessment is costly, causes delays in economic development, has become overly complex and does not deliver on its objective as a means to achieve sustainable development. In federations this can be compounded by duplication of effort caused by overlapping responsibilities between

18 Economic Commission for Europe, Convention on Environmental Impact Assessment in a Transboundary Context, Espoo (Finland), 1991: www.unece.org/env/eia/documents/legaltexts/conventiontextenglish.pdf

19 Economic Commission for Europe, Protocol on Strategic Environmental Assessment, Kiev, 2003: www.unece.org/env/eia/documents/legaltexts/protocolenglish.pdf

the federal government and its constituent units. At the same time, citizens continue to expect opportunities to participate in environmental assessment processes, and demand procedural fairness and transparency in decision-making. The greatest challenge of all is responding to these pressures while maintaining the quality of environmental assessments.

Specific challenges generic to all governments are:

- it is often difficult to determine whether an environmental assessment has failed or is of poor quality due to the lack of easily measured outcomes; success stories are hard to find
- the need to focus environmental assessment on appropriate projects or actions
- the diffusion of accountability in the self-assessment model results in coordination challenges that often lead to delays
- linkage between the environmental assessment process and subsequent regulatory decisions by other departments within the same level of government are often not clear, resulting in duplication of information requirements, public consultation and effort.

Specific challenges unique to federations are:

- where the federal and constituent unit environmental assessment processes differ, harmonizing their processes to minimize duplication through co-operative or joint assessments is a challenge due to the following:
- different levels of assessment in each government
- different ways to initiate or trigger assessments
- different determination of the scope of the project to be assessed
- different public participation requirements
- different decision-making responsibilities
- different approaches to determining the relevance and importance of issues
- different time requirements for each stage of the process
- where framework legislation or minimum requirements have been established (such as the European Union directives), ensuring consistency among the constituent units or member states is an ongoing challenge

In addition to the above challenges, there are a number of emerging global issues that are confronting those involved in environmental assessment. Prominent among these is the extent to which environmental assessment can play a more strategic role in reducing climate change and minimizing the effects of development on biodiversity. Strategic environmental assessment is evolving as means to assist in this regard and to reduce the pressures placed on project assessments to consider matters that are often beyond the scope of a single project assessment. However, care will need to be taken to ensure an appropriate linkage between strategic assessments and possible subsequent project assessments given the time lag that often exists before a plan or program translates into specific projects. Also, there will a need for some incentive to undertake strategic assessments by bringing about greater efficiencies in future project assessments even to the extent of eliminating them under certain conditions. The roles and responsibilities of the federal government and the constituent units would also need to be clear to ensure cooperation in undertaking strategic environmental assessments.

Pressures to streamline environmental assessment processes may result in delivering outcomes more quickly, reduce costs to proponents and focus efficiency gains on priority areas such as energy, transportation and infrastructure projects. This may also bring about greater uniformity and standardization among the federal governments and their constituent units where framework legislation does not exist. However, care will need to be taken to ensure that poor or rushed environmental assessments do not create further time delays and costs to society. Finally, for those federations with requirements to consult Aboriginal peoples, another emerging issue is the integration into environmental assessment of the duty to consult and accommodate them on the potential impact of a project on their existing or potential rights.

10. Observations and Conclusions

To conclude, this section summarizes the findings of this report and offers a number of observations based on the analysis.

Features of environmental assessment processes in federations

The examination of environmental assessment processes in the seven countries and the European Union has identified a number of process features that are similar and others that are different.

What different countries' procedures have in common:

- **Assessment is done everywhere:** All seven countries examined and most governments of their constituent units have legislated environmental assessment processes.
- **A broad definition:** The term environment or environmental effect is defined broadly, generally allowing the consideration of impacts on the biophysical environment, human health and socio-economic effects.
- **Proponents assess, governments review:** Proponents in most cases are required to prepare the environmental assessment documentation which is then reviewed by government authorities.
- **Different assessment types:** There are different types of assessment required for different actions or projects depending on the project size, its environmental setting and its potential for high public interest; the types of assessment at the federal level are not necessarily replicated by the constituent units.
- **Alternatives are considered:** All jurisdictions examine alternatives to some extent although some restrict consideration of alternatives to alternative means of completing the action rather than alternatives to the action.
- **Preliminary informal discussions:** Formal pre-application procedures occur rarely but most have informal arrangements for interaction between the proponent and government departments and agencies prior to the commencement of the process.
- **Public consultations required:** Procedures for public consultation and input are a requirement in all jurisdictions, but procedures and requirements can vary between the federal government and its constituent units.

- **Judicial review and sometimes appeal possible:** Citizens in all cases have the right to seek judicial review of process decisions as well as the final decision following an environmental assessment; some jurisdictions have mechanisms for appeal, usually limited to the final decision.
- **Incorporation into policies, planning and procedures:** Strategic environmental assessment is an emerging practice; most jurisdictions have some requirements for the application of strategic environmental assessment to plans or programs; assessment of policies is more limited.

How assessment procedures differ:

- **Strategic environmental assessment varies:** The types of actions (projects, polices, plans and programs) subject to environmental assessment or strategic environmental assessment vary considerably among the jurisdictions. However, major projects are all subject to such processes.
- **What's subject to assessment will vary:** Some jurisdictions have defined which projects require an environmental assessment by means of project lists; others require an environmental assessment of all projects unless excluded through a project exclusion list or a case-by-case examination.
- **Universality with exclusions produces more assessments:** Countries that identify projects to be assessed by means of project lists or a case-by-case examination conduct fewer assessments than those that assess all projects except those excluded by project lists.
- **Scope of assessment will vary:** Most countries define the project to be assessed fairly broadly but some at the federal level limit the scope of the project to be assessed to the components they regulate or permit; the approach can also vary between the federal government and its constituent units.
- **Some countries' assessments require justification:** Some jurisdictions require examination of the need and justification as part of the environmental assessment for a project.

Responsibility for environmental assessment decision making

A key difference among the jurisdictions examined is the assignment of the responsibility to conduct the environmental assessment and for decision-making following the outcome of the assessment.

- **Existing agencies usually conduct assessments:** Environmental assessment responsibilities are generally assigned to existing departments and agencies with an environmental mandate, but two countries have created separate offices to oversee the process.
- **Assessing one's own projects:** Some jurisdictions adopt the principle of self assessment whereby the department or agency with decision-making responsibility for the action is also responsible for the conducting the assessment before taking a decision to authorize the project or some of its components; in others this decision rest with the minister of the environment; in some countries the approach is different between federal and constituent unit governments.

Revisions to environmental assessment processes

All jurisdictions have continued to review their environmental assessment processes and have adjusted them to improve efficiency and the quality of assessments through legislative amendments, or by new regulations and policies.

- **Types of Revisions:** The main changes to environmental assessment processes have involved shifting from a self-assessment model to a single decision-making model, adjustments to project lists requiring an assessment and exclusion lists to provide a greater focus for environmental assessment on appropriate projects, measures to improve coordination and collaboration among government departments, measures to harmonize federal and constituent unit environmental assessment processes, greater opportunities for public involvement, and measures to address transboundary impacts.
- **Streamlining for Transit, Infrastructure and Energy Projects:** Some federal governments and their constituent units have introduced streamlined measures for priority initiatives such as transit, infrastructure and energy projects.
- **Timelines:** Most countries have introduced timelines to varying degrees in the environmental assessment process; some have specified time periods for public comment and decision making; timelines may vary between the federal government and its constituent units making harmonization a challenge.

Coordination and collaboration in environmental assessment

Since environmental assessment is a planning tool, designed to identify environmental and often socio-economic effects of a given action, it touches on the responsibilities of many different departments. Consequently, it is important to have effective coordination and collaboration among departments to minimize delays and to ensure that the expertise and views of the various government departments is incorporated in the assessment.

- **Self-Assessment Model:** The diffusion of accountability among the various decision makers in the self-assessment model results in coordination challenges and often leads to delays.
- **Single Assessor Model:** The single-decision making model where the responsibility to conduct the environmental assessment is assigned to one department, while still requiring input from other departments, minimizes the need for coordination and results in fewer delays.

Cooperation and harmonization among federal governments and their constituent units

In some countries, environmental assessment processes of the federal government and its constituent units can apply to the same project or action, thus necessitating cooperative arrangements or harmonization agreements to minimize duplication of effort. Other countries have been able to specify which projects will be reviewed by each level of government, and thus rarely have overlapping jurisdictional responsibilities and hence little need to harmonize their environmental assessment processes.

- **Assessment responsibilities seldom overlap in countries with framework legislation** that is either implemented or adopted in legislation by their constituent units.
- **Countries with framework legislation that have specified projects requiring an environmental assessment** by means of project lists and have also specified which level of government is responsible for the assessment of each project.
- **Framework legislation sometimes specifies who assesses what.** In situations where framework legislation identifies the specific projects that each government will assess, the need for harmonization on a project-specific basis is minimal; however, ensuring consistency in approaches among constituent units or in the case of the European Union, among its member states, is a challenge.
- **In countries without framework legislation, constituent units and the federal government often bicker.** Each constituent unit may have an environmental assessment process with different features from that of the federal government; initiation or triggering an assessment is different between the federal government and its constituent units, thus creating a challenge for harmonization of processes.
- **For those countries where environmental assessment processes of more than one level of government may apply to the same project,** mechanisms have been developed for cooperation among governments to minimize overlap and duplication and to strive for the objective of "one project-one assessment" through joint assessments. Nevertheless, overlapping responsibilities among governments is often cited as a reason for delays and inefficiencies.
- **In some countries the constituent unit governments defer the conduct of the assessment to the federal government;** in others the federal government can accredit or delegate to the constituent unit government to conduct the assessment but not the decision-making.
- **Federal-constituent unit sharing of assessment:** In situations where the environmental assessment processes of the federal government and its constituent units apply to the same project, factors that need to be considered in harmonization are:
    - **early identification of all the potential decision makers**; they are more numerous in those jurisdictions that follow the self-assessment model and required coordination and collaboration is greater than for jurisdictions with a single decision maker for all the assessments
    - **agreement on the potential significance of the proposed action** which in turn will influence the type of assessment required, particularly where the types of assessment differ among governments
    - **agreement on the scope of the project** and all of the environmental factors that need to be included in the assessment
    - **the timing of the commencement of each process** and meshing of timelines at each step in the process
    - **the need to ensure that the legal requirements of each process are respected** including procedures for public consultation, timelines and consideration of alternatives.
- The need to harmonize environmental assessment processes among countries, particularly for projects that cross borders (pipelines, highways, railways) is illustrated by

the implementation of the United Nations Convention on Environmental Impact Assessment in a Transboundary Context.

- **The linkage between the environmental assessment process and subsequent regulatory decisions or other requirements** (e.g. other European Union directives) are often not clear, resulting in duplication of information requirements, public consultation and overall effort.

Emerging challenges facing governments in this policy field include:

- **the extent to which environmental assessment can play a more strategic role in reducing climate change** and minimizing the effects of development on biodiversity
- **the role that strategic environmental assessment can play in examining broad developmental issues** and in turn improve the efficiency and effectiveness of subsequent project assessment
- **measures to streamline environmental assessment processes may result in quicker outcomes**, reduce costs to proponents and focus on priority sectors such as energy, transportation and infrastructure and bring about greater uniformity and standardization among federal governments and their constituent units; care will need to be taken to ensure that the quality of assessments is not reduced
- **integration into environmental assessment of the duty to consult Aboriginal peoples about the potential impact of a project** on their existing or potential rights in federations that have such requirements.

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Mr. Connelly began his career with a consulting engineering company working on infrastructure projects. Much of his career has been devoted to public service with the federal government and the United Nations. His work with the federal government began in the early 1970's and focused on pollution control with Environment Canada in Winnipeg. In the 1975 he joined the United Nations Economic Commission for Europe in Geneva where he developed policy papers in support of the work of member countries on various environmental issues.

In 1978 Mr. Connelly returned to Canada and spent 27 years with the Canadian Environmental Assessment Agency and it's predecessor the Federal Environmental Assessment Review Office. He was appointed by Governor in Council as Acting President of the Canadian Environmental Assessment Agency and served in this capacity for 17 months before retiring in 2005. Prior to this he was Vice president, Policy for ten years where he was responsible for policy and regulatory development under the Canadian Environmental Assessment Act, research and development, inter-governmental affairs, and relations with aboriginal organizations as well as international affairs. Mr. Connelly chaired the United Nations Working group that developed the Convention on Environmental Impact Assessment in a Transboundary Context. In 2006, the International Association for Impact Assessment presented him with the Rose Hulman award in recognition of his contribution and leadership in environmental assessment.

Mr. Connelly has chaired many federal and joint federal-provincial environmental assessment review panels involving projects in the transportation, oil and gas, nuclear and mining sectors as well as in wildlife conservation. His environmental assessment consulting work involves clients in the government and the private sector.