

AN ECONOMIC BENEFITS FRAMEWORK FOR PARKS AND PROTECTED AREAS

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SUMMARY

In 1996 the IUCN drafted a set of guidelines for measuring the impacts and benefits of parks and protected areas as a guide to protected area managers. Canadian parks agencies found these guidelines incomplete and requested the creation of an economic benefits framework which reflected the range of benefits produced by Canadian parks and protected areas. The result has been a more comprehensive economic benefits framework that has been adopted by the Canadian Parks Council for use by all member organizations.

Key to the framework is the identification of the beneficiaries from parks and protected areas. Three categories of beneficiaries are identified: individuals (personal benefits), businesses (commercial benefits) and society as a whole (societal benefits). A second important feature of the framework is the recognition that economic benefits change as the perspective of assessment changes. For instance, the scope and total value of benefits included in a local area study will be different from those included in a national study. The term 'Account Registers' is used to describe this reality. The framework utilizes and builds upon current economic theory on the estimation of total economic value (TEV). Further, generally accepted methodologies are used to estimate the benefits which each of the beneficiary categories derives from parks.

The advantages of the framework are many: a) easily understood concepts; b) the benefits in each category are additive; c) economic impacts are integrated into a benefits context; d) different perspectives of assessment are accommodated through the use of account registers; e) total benefits are included in the analysis, even if not all are capable of being quantified; and f) policy options can be assessed in relation to the distribution of benefits between beneficiary categories. Finally, the framework establishes a standard for economic benefit analysis across Canada.

The purpose of this presentation at SAMPAA is to introduce the framework and to get critical feedback from conference participants, especially academics and practitioners, in order to assess the utility of the approach.

1. INTRODUCTION

Many managers, planners and administrators of protected areas worldwide believe that in order for protected areas to be accorded their "proper" place in regional, national and international economies, their benefits and impacts must be clearly documented and demonstrated. In order to establish parks and protected areas as legitimate, productive and beneficial uses of resources, a framework of benefits is a useful tool to employ.

Natural resource economists, particularly in North America, have been working on the quantification of benefits from parks for several decades. Many Canadian park agencies are at the forefront in the consideration and analysis of economic values associated with parks and protected areas. These organizations have a long history of socio-economic research and analysis related to parks and protected areas, and have been a leading force in the development of economic impact assessments of park facilities and services. By encouraging activities on socio-economic research, Canadian park agencies have had the effect of nurturing economic thought on the subject.

This paper provides a description of the comprehensive socio-economic benefits framework developed for parks and protected areas. A short description of the types of benefits produced by parks and protected areas starts the paper.

1.1 Types of Socio-Economic Benefits

There is an almost unending number of ways to express the benefits associated with parks and protected areas. In general, two overall approaches appear to predominate: those which attempt to show the economic/commercial linkages (economic impacts) of parks and protected areas to the communities and regions in which they are located; and, secondly, those which dwell more on the amorphous attributes of such areas through their contributions to quality of life, personal health and fitness, personal improvement, the appreciation of natural beauty, and, of course, ecological integrity and ecosystem services. Economic analysis has predictably concentrated on the former types of benefits.

There are many ways of portraying the benefits of parks and protected areas: economic impacts of visitor spending, personal satisfactions from experiences, personal improvement through readings, off-site physical benefits of clean water, and many others. These benefits are sometimes classified in many different ways; for example -

monetary/non-monetary	direct/indirect
consumptive/non-consumptive	quantified/unquantified
financial/non-financial	use value/non-use value.

Some studies concentrate on detailed economic impact analysis; others are concerned with the value and distribution of costs and benefits; while still others describe “total economic value” sometimes without any specification as to whom these benefits accrue.

Although there are many types of economic analysis and many different ways of using economic information, one of the areas where insufficient attention has been paid is the orderly and full elaboration of benefits derived from parks and protected areas, and, in particular, how to account for them. Many a report has been published on the benefits of parks, but the park manager is inclined, understandably, to find these perplexing and confusing. Managers are frequently left with the feeling that not all benefits of his/her park have actually been identified, described or monetized. Further, they believe there is no easy way of knowing when the total economic value of their park or protected area has been quantified in any manner to which they can relate or understand. An analytical framework is needed where all values and benefits can be accounted for - even the “fuzzy-good feeling” benefits and even if they cannot now all be put in monetary terms.

The references section at the end of the report provides a list of some of the studies/reports which are oriented towards the economic evaluation of parks and protected areas. This list does not reflect by any means the full extent of work that has been conducted in this field. It is clear from the literature, however, that there is a lack of unanimity on how to classify and categorize the benefits derived from parks and protected areas. There is frequently agreement on the types of benefits, but a classification system or typology has eluded researchers so far.

1.2 Why a Framework?

There are many issues and concerns about socio-economic analysis which serve to emphasize the need for a commonly agreed upon framework for assessing the benefits derived from parks and protected areas. One of these is clear from the preceding section which outlines the variety of benefits and values commonly associated with parks and protected areas but the absence of a systematic reference. In addition to this, confusion about economic analysis related to park benefits arises from common errors and a variety of other reasons:

- much of the quantitative economic analysis has focused on economic impacts, and economic impacts are frequently and erroneously thought to be the same as economic benefits;
- the perspective of assessment and valuation gets confused so that serious questions of what constitutes a “benefit” and what is a “cost” arise;
- components included in assessments are inconsistent -- e.g. quantitative/non-quantitative, use/non-use, direct/indirect, monetary/non-monetary, consumptive/non-consumptive -- and how they are all related is unclear or poorly understood and specified;
- frequently the notion of “net” benefits is used - what is “gross” and net of what?
- specification of the subject areas (products, experiences, goods, services, etc.) covered by the assessment is often unclear: frequently they are too broad or undefined;
- some assessments describe “benefits,” others “uses” -- are they the same?
- unknowingly inappropriate methods are applied to obtain benefit estimates.

With these points of frequent confusion and the myriad values reported in the literature, there is obvious potential for muddled thinking and generation of questionable results. As noted earlier, a park manager has no way of knowing when total benefits are being assessed or what sub-set of benefits are being assessed - unless (s)he has some experience with this type of analysis or possesses some understanding of the issues involved. A consistent and easily applied framework for economic assessments is therefore necessary for both analysts and managers.

This paper describes an economic assessment framework which will allow researchers, managers, policy analysts and others to view the socio-economic benefits associated with parks and protected areas within a consistent, comparable and comprehensive format. The paper is not an in-depth guidebook on how to estimate or determine these values, but rather provides an overview of the classes and types of benefits which parks and protected areas produce.

2. BENEFITS FRAMEWORK

The issues and concerns identified in the myriad reports on the benefits of parks and protected areas indicate the urgent need for a comprehensive economic benefits framework within which the benefits derived from protected areas can be assessed. In response to this need, a comprehensive framework has been developed here for this specialized study of economic benefits. The framework is summarized in Figure 1 on the following page. While the framework presented here is generalized, it should be possible to fit any benefit derived from a protected area into one of its categories.

2.1 Overview

The framework of benefits is based upon two fundamental principles. First, there are three categories of beneficiaries of the goods, services, products and experiences derived from parks and protected areas. Secondly, the value of the benefits within these benefit categories changes with different perspectives of valuation (or different “account registers”). This section introduces each of these fundamental aspects of the framework.

Benefits - The framework should identify all benefits generated by the park or protected area. The three categories developed cover as many different types of benefits as possible, and, it is assumed that all benefits can be fitted into the categories described. Determining into which category any benefit should fall is dependent upon an understanding of who to ask about the benefit received.

<p align="center">FIGURE 1 GENERALIZED FRAMEWORK OF THE TOTAL BENEFITS OF PROTECTED AREAS</p>		
Benefit Category:		
PERSONAL	COMMERCIAL	SOCIETAL
Definition:		
-benefits accruing to stakeholders (users and non-users)	economic impacts derived from the redistribution of commerce from one area to another	benefits with “public good” characteristics and tending to be societal in scope
Benefit Components:		
Use Values - direct use - indirect use	Impacts from spending by stakeholders and by location management for development and operations, from sources outside the area of assessment (as measured by increases in GDP, labour income, employment and tax revenue)	Ecological Functions: primary production, sequestering carbon dioxide, soil formation, herbivory, carnivory, oxygen production, population moderation, nutrient transport, moderation of macro- & microclimate, decomposition, maintenance of genetic diversity, and others
		Resource integrity: maintenance of existing benefits; ameliorate effects of human changes
		Health effects - physical, mental, spiritual
		Worker productivity
		Educational benefits
		Scientific benefits
Non-Use Values - option value - existence value - bequest value		International responsibilities/agreements: NAWMP
		Business location decisions (quality of life/business)

The “personal” category identifies all benefits accruing to stakeholders, whether they are direct users, indirect users or non-users of the particular area being assessed. This category includes benefits received by those who actually visited or used the site (direct users), those who have enjoyed the asset through some indirect means (e.g. photographs, movies, books, etc.), and those who have a knowledge of and/or interest in the area but have not used it in any way (non-users). Non-users also include the benefits received by persons who may not know about the specific area but receive benefits from the knowledge that these types of areas exist as a matter of

public policy. Certain expenditures (e.g. entry fees) and consumer surplus values are the main sources of value in this category.

The “commercial” category of benefits exists when valuing the benefits of a park from the perspective of a defined area (e.g. local community). These are the benefits to business within the defined area. The economic impacts of spending within the area from sources outside the area (by visitors and/or on development/operations) produced as a result of the protected area can be considered a net commercial benefit for that community or area. It represents income and employment that would not otherwise have existed without the spending of agencies and people from outside the defined area.

The “societal” category is at once the most comprehensive, and most nebulous. Societal (or public) benefits are all those benefits which accrue to society as a whole (over and above those to stakeholders and businesses). While there is inevitably some overlap with the personal category of benefits, these benefits to society go beyond the personal: the country, region, or area is seen to be a better place because of the benefits derived from the protected area. They range from the extremely practical, such as ecological functions/services upon which our survival depends, to more subjective benefits such as increases in worker productivity. The benefits are nonetheless real and many are measurable.

Account Registers - the perspective adopted for any analysis is critical to understanding the results of the analysis. In the generalized framework there are fundamentally two types of perspectives for the valuation of benefits: 1) society in general (mankind), where borders are irrelevant; and 2) defined areas, where residency is an important consideration. These two types of account registers reflect situations where in one case the source of funds is not a factor - where benefits accrue to mankind generally; and one in which benefits are determined in relation to some defined area or areas (e.g. country, province, region, local area), making the source of funds a key determinant of the distribution of benefits. The second type (benefits in relation to a defined area) is more commonly applied especially by parks management agencies.

2.2 Framework Description

This section provides a more in-depth description of the framework and its constituent parts.

2.2.1 Benefits

Personal Benefits - Another possible title for this section in keeping with the other terms is “individual stakeholder” benefits. Stakeholders are defined as anyone with an interest in the protected area. There are two component parts to personal or stakeholder benefits: use values and non-use values.

Use Values

Use values are those derived from actual use of the site, park, area or function being assessed. Such values are comprised of the amount paid as a resource rent by the user/visitor - such as an entrance fee, camping fee, day-use fee, or other such amount; plus any extra-market benefit received - such as consumer surplus. The amount actually paid to use a river, park, or other type of protected area being valued can be determined through questionnaires, and the amount (or existence) of extra-market benefits can also be determined through questionnaire surveys using various contingent valuation methodologies (CVM) or through other methodologies.

Most studies measure the expenditure component of direct use values and do not attempt to quantify the extra-market benefits (consumer surplus). Studies quantifying these complete values will grow as recognition of the importance of these values grows, and as methodologies become more universally accepted and understood.

Indirect use values are benefits enjoyed by individuals who may have visited/used the asset being assessed, but whose current benefits are derived from off-site activities or deliberations. The benefits are related to the protected area, but no direct use is being made of it in the attaining of these benefits. Such benefits can be obtained from the asset through activities such as reading, watching movies, enjoying art, etc. about a specific protected area. Household surveys can yield measures of these benefits by gathering information on expenditures and extra-market benefits from indirect “users”.

Non-Use Values

Non-use values, sometimes referred to as “preservation” or “passive use” values, are those gained by persons who are aware of the area but may not ever actually use or visit the area. There are three components to these values: option, existence and bequest values.

Individuals are known to gain personal benefits from the knowledge that the specific protected area exists and is available for possible future use. Option value is, in some respects, similar to an insurance policy - the amount an individual is willing to pay in order to ensure a future option. This option for future use (option value) has been shown to be substantial in some studies. Measures of this value can be obtained through household or population surveys using CVM techniques.

Existence value is another component of non-use values. This value is derived from the knowledge that a resource (protected area) has been preserved in perpetuity, even if no recreational or other personal use is contemplated. The very existence of a protected area creates benefits for certain people. These values are estimated through population or household surveys and employing CVM approaches.

Another source of existence benefits, not necessarily related directly to the specific protected area being assessed, is the personal benefit obtained from knowing that such areas are being protected or managed in a sustainable manner, as a matter of public policy. The knowledge that national parks exist, for example, is valuable to some people without their having to know the details about each park.

Bequest value is the third generally accepted component of non-use values. Bequest value is derived from the knowledge that future generations will have the opportunity to use, enjoy and appreciate the protected area. Time is the critical dimension of this source of value. These values too are derived through surveys of the general population using CVM or other techniques.

It is worth noting that researchers have questioned whether or not these three components of non-use benefits (option, existence and bequest) are distinct and can be estimated individually. There is some thought that these three components should be assessed together, since it is thought respondents cannot adequately distinguish between the three components. Continued research will help clarify this issue. When these values are grouped together the term most often applied is “preservation value.”

Personal benefits derived from use or non-use of a protected area reflect the value placed on such areas for a wide variety of reasons. The research literature largely assumes that those indicating a benefit and/or consumer surplus have included all sources of personal benefit or possible reasons in their valuation. Unfortunately, this may not always be a valid assumption. As an example, it is not clear whether health improvements from physical recreational activity are incorporated into respondents’ assessment of value from hiking in a park, or the increase in productivity this may result in at their place of work, or the increased knowledge gained by the experience leading to other beneficial outcomes. These tend to be aspects of the experience that respondents may unknowingly omit to factor into their assessment of the personal enjoyment from the protected area. These benefits accrue to the society in which these respondents live.

When these values are not included within personal valuations, they should be incorporated into a broader valuation category. As a result, they have been classified as societal benefits rather than personal, for the purposes of this framework. However, it is important to recognize that some overlapping of values may occur, especially between personal and societal benefit categories.

A final point to be emphasized is that distributional issues arise in the accounting for personal benefits. The account registers (perspective of assessment) are important from the point of view of determining what benefits remain within the area of assessment. When assessing a protected area from a province's perspective, for example, any consumer surplus (benefits over and above what was paid for) derived by non-provincial residents from the protected area must be treated as exports. They are personal benefits attributable to the protected area but not retained in the province. The world is better off, but the benefits to the province cannot include this portion of personal benefits obtained by non-residents because they were not retained in the province. As another example, if the perspective of assessment was Canada, then the personal benefits (consumer surplus or non-market benefits) derived by non-Canadians from our protected areas would be treated as non-retained benefits within Canada and not included in any calculations of overall benefits to Canada from its protected areas. Naturally, all consumer surplus obtained by Canadians would be included in the calculations. Note, however, that Canada benefits in other ways from the foreign visitors: most notably commercially, as explained next.

For detailed information on the methods used for the estimation of personal benefits please refer to *The Economic Benefits of Protected Areas: A Guide for Estimating Personal Benefits*, prepared for the Federal-Provincial Parks Council by *The Outspan Group*, 1999.

Commercial Benefits

While the literature frequently refers to this type of benefit as “secondary impacts”, in terms of the continuum of categories adopted here, a more apt term is “commercial” or “business” benefits.

As per the definition in the chart (Figure 1), this benefit category represents the value of benefits derived from the commercial activity and its various impacts on income and employment from one area to another. The benefits are the value added which is retained within the area associated with the spending by persons and/or organizations from outside the area. For example, if the benefits of a protected area in Canada are being assessed, the value added associated with the spending by Canadians would not be included (with the exception of some caveats) while attributable spending by Americans, Europeans, etc. would be included in this benefit category. The spending by residents of other countries represents a shift in commercial activity from those countries to Canada. As such the increased business income and its associated (direct, indirect and induced) impacts from the expenditures of these visitors can be considered a net benefit. Similarly, if an organization, such as the World Wildlife Fund, spends funds on Canadian protected areas, this too can be considered a net gain, assuming the source of the funds was from outside Canada. Source of funds, then, is the key criterion to apply to this benefit estimation procedure.

Again it is also important to distinguish between economic benefits and economic impacts in this analysis. The economic impacts of all spending are measurable and real within the selected defined area (country, province, local area) irrespective of where the funds originated. However, not all impacts can be considered benefits. Benefits arise when the impacts reflect an injection into the defined area economy from outside sources and are attributable to the protected area. Such economic impacts, associated with spending from sources outside the defined area, can legitimately be counted as benefits within the area.

Most often the measures used to show impacts are: gross domestic product (GDP), labour income, employment (person-years) and tax revenue. In this way, benefits derived by private sector businesses and tax revenues received by the public sector from this increased business can be determined.

Societal Benefits

In keeping with the terms describing framework categories, this category could also be termed “public good benefits” or “public welfare benefits.”

Societal benefits are considered those benefits which go beyond those obtained by individuals or businesses and are societal in breadth or contribute to the overall public good. As mentioned in the personal benefits section (above), there may be some overlap between these benefits and the personal benefits. Clear distinctions between categories are difficult to enunciate, in some cases. In addition, although some benefits may have a personal component, there may also be societal benefits. For example, if park users are healthier individuals, this can have significant implications for public medical costs related to a wide range of ailments. The relationship between cause and effect may not be direct.

Benefit components are broad and varied and include the following:

Health Benefits	physical health, mental aspects, spiritual health, due to some extent to participation in physical activities in protected areas;
Resource Integrity	protected areas can maintain current levels of personal and commercial benefits, and reduce or mitigate the cumulative effects of change by humans over time (e.g. through watershed protection or maintaining biodiversity);
Worker Productivity	increased productivity from content, healthy and knowledgeable workers; due, in part, to recreational activities within protected areas;
Business Locations	economic benefits may accrue to an area because of the nature of the resource base in the area: businesses increasingly are being located in areas where their employees can enjoy natural amenities and a high quality of life (and be productive workers);
Educational benefits	the availability of the natural resources, protected from irreversible change and/or destruction, for educational purposes through interpretive programs and school visits; also leads to a better educated/knowledgeable population;
Scientific benefits	the availability of the natural resources and systems, protected from irreversible change and/or destruction, for scientific and research purposes, including biotechnology and technological development;
Ecological functions	those natural ecosystem goods and services necessary for man’s survival are many: primary production, soil formation, herbivory, carnivory, oxygen production, sequestering carbon dioxide, etc ¹ ;

¹ A starting point for consideration of these functions are the twenty-one ecological functions listed in Chapter 4 of Canada’s Biodiversity: The Variety of Life, Its Status, Economic Benefits, Conservation Costs and Unmet Needs, Canadian Museum of Nature, 1995.

Legal agreements the provinces and Canada, like many countries, has agreed to participate in many national and international agreements related to the environment and protected areas, which individually and cumulatively generate benefits to mankind (including Canadians).

Assessing the actual value of the benefits of many of these components may be difficult. That they are beneficial is not in doubt, and that they are mostly benefits which accrue to all of society is clear. However, this category of benefits is one which would benefit from further consideration, discussion and research by those concerned with deriving the benefits of protected areas.

2.2.2 Account Registers

Too often overlooked or misunderstood, account registers provide the key to the success of any analysis of benefits. Account registers describe the perspective of the assessment and are required to allocate benefits and costs; exports and imports.

The account register adopted for any analysis of benefits sets the boundaries for the analysis; it defines the area in which benefits are being assessed. As such, it clearly delineates whose benefits are included within the register and whose are excluded from the register. The account register can be in several forms - benefits to a local area, a region, a province, to the nation or to society in general (global).

It is important to understand the perspective of valuation (account register) adopted in all benefits analyses. If it is not clear whose benefits are being included, then the results of the analysis cannot be clear. It has been suggested that one of the reasons some policies conceived at the national level are not effective or sometimes have seemingly perverse effects at the local level, is that the local account register was never considered. Using different account registers in different analyses lets the analyst appreciate the changes in distributions of benefits from each perspective - they will not be the same. It may be very useful for any study of parks and protected areas to present a series of results for a series of account registers in its assessment of the same protected area.

3. CONCLUSION

This paper has described the comprehensive framework for the assessment of the socio-economic benefits derived from parks and protected areas. It provides a reasonable and realistic basis for the quantifying and describing the benefits which such areas produce, and has been adopted by the Canadian Parks Council.

There are many strengths to the benefits framework:

- there are three easily understood distinct primary bases of benefit derivation - those accruing to individuals, to businesses and to the public good;
- the benefits derived in each category are additive and not duplicative;
- account registers accommodate varied perspectives of valuation;
- economic impacts are integrated into an economic benefits framework;
- the framework is sufficiently generic as to be equally applicable to parks and protected areas as well as other resource uses;
- the extent to which total values of protected areas are being assessed can be gauged;

- priorities for specific areas of economic valuation research can be established by observing areas where no, little or poor valuation information exists; and
- policy options can be assessed in terms of their effect upon the distribution of benefits between the three categories and strategies can be better formulated to achieve changes in distributions for targeted beneficiaries.

While the framework itself is reasonably easy to understand, the economic analyses required to estimate the value of the benefits are not so straightforward. This would be the case no matter how complex a framework was adopted. However, the role of the framework should be to allow, foster and enhance understanding of the beneficial aspects of parks and protected areas. It is believed that this framework helps economists and non-economists alike to understand the full range of benefits produced by parks and protected areas and should help them understand where the results of specific studies fit within this continuum.

In summary, the economic assessment framework described in this paper provides a comprehensive and all-inclusive approach to the economic assessment of protected areas. It incorporates a broad spectrum of benefits, incorporating three categories of beneficiaries and any number of accounting stances.

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