IMPROVING THE EFFECTIVENESS OF OVERSEAS DEVELOPMENT ASSISTANCE IN KOSRAE

COST BENEFIT ANALYSIS WORKPLAN TOOL

SPREP
Secretariat of the Pacific Regional Environment Programme

The **Pilot Program for Climate Resilience: Pacific Regional Track (PPCR-PR)** is a regional program which aims to strengthen integration of climate change and disaster risk considerations into 'mainstream' policy making and related budgetary and decision-making processes (i.e. 'climate change and disaster risk mainstreaming').

The PPCR-PR is implemented by the Secretariat of the Pacific Regional Environment Program (SPREP) and Asian Development Bank (ADB) and is funded through the Climate Investment Funds (CIF).

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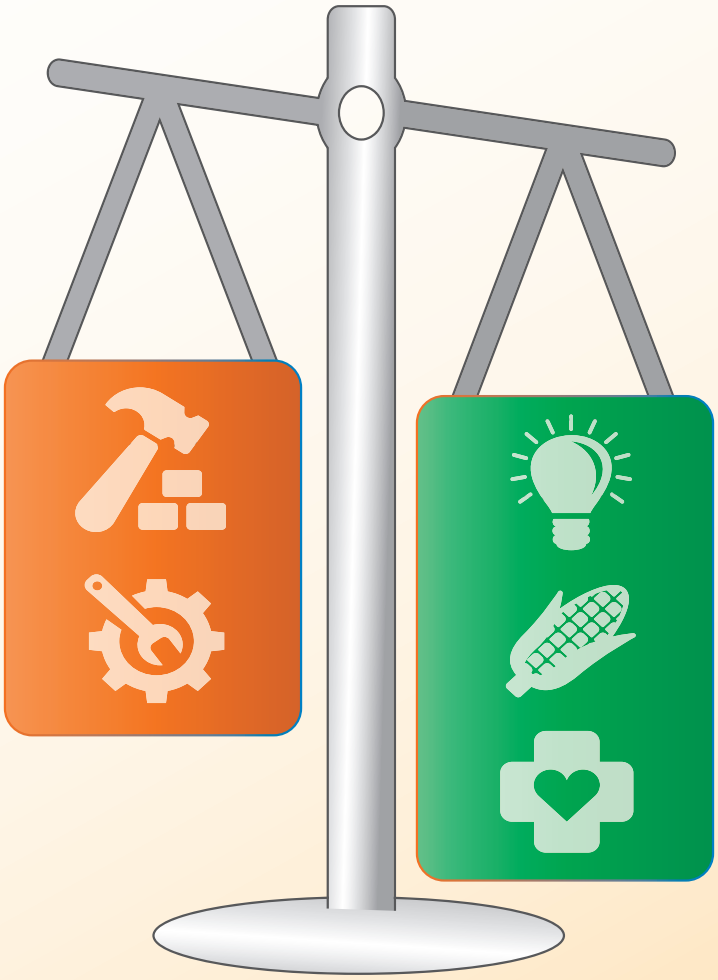
COST BENEFIT ANALYSIS (CBA) WORKPLAN TOOL



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Introduction

The Kosrae State Government (KSG) is undertaking a reform program to improve the effectiveness, efficiency and resilience of its overseas development assistance (ODA). This work has lead to the development of a *Co-ordination of ODA Policy* (Policy No.35) and related *Procedure for Requesting and Receiving ODA* (Procedure No. AD103).

To support the operation of the *Co-ordination of ODA Policy* and related *Procedure for Requesting and Receiving ODA* (hereafter referred to as the 'ODA policy and ODA procedure'), an ODA Handbook has been developed along with a series of supporting guidance notes and tools.

This document is the workplan tool to supporting conduct of cost-benefit analysis (CBA) studies.

Cost-benefit analysis (CBA) is a policy analysis methodology that can be employed to help develop a good quality, evidence-based proposal. More specifically, a CBA study can inform and help demonstrate:

i. which option(s) is the best one to address a given policy problem – and thus should be included in a given policy proposal.
[refer section II (D) of the Overseas Development Assistance (ODA) Request Format]

ii. how policy design should best deal with certain risk factors? For example, which policy option (or policy design modification) most efficiently manages climate change and disaster risks.
[refer section II (E) of the Overseas Development Assistance (ODA) Request Format]

iii. whether the proposed policy option(s) represents a worthwhile use of resources (relative to other competing uses) – and Governments' should invest in the policy.
[refer section II (F) of the Overseas Development Assistance (ODA) Request Format]

The purpose of this CBA WORKPLAN TOOL is to help Kosrae State Government (KSG) officials who are responsible for preparing a policy proposal to organise a CBA study. It essentially maps out the types of information and data that needs to be collected; where this information will be collected from; who is responsible for doing related activities; and the timeline for doing all of this.

The CBA WORKPLAN TOOL complements a regional CBA guideline entitled *Cost Benefit Analysis for Natural Resource Management in the Pacific (Second Edition, 2016).* Consistent with this 'regional CBA guideline', the CBA WORKPLAN TOOL follows a logical and systematic sequence of steps to undertake a cost-benefit analysis study. This is presented as eight key steps as follows:

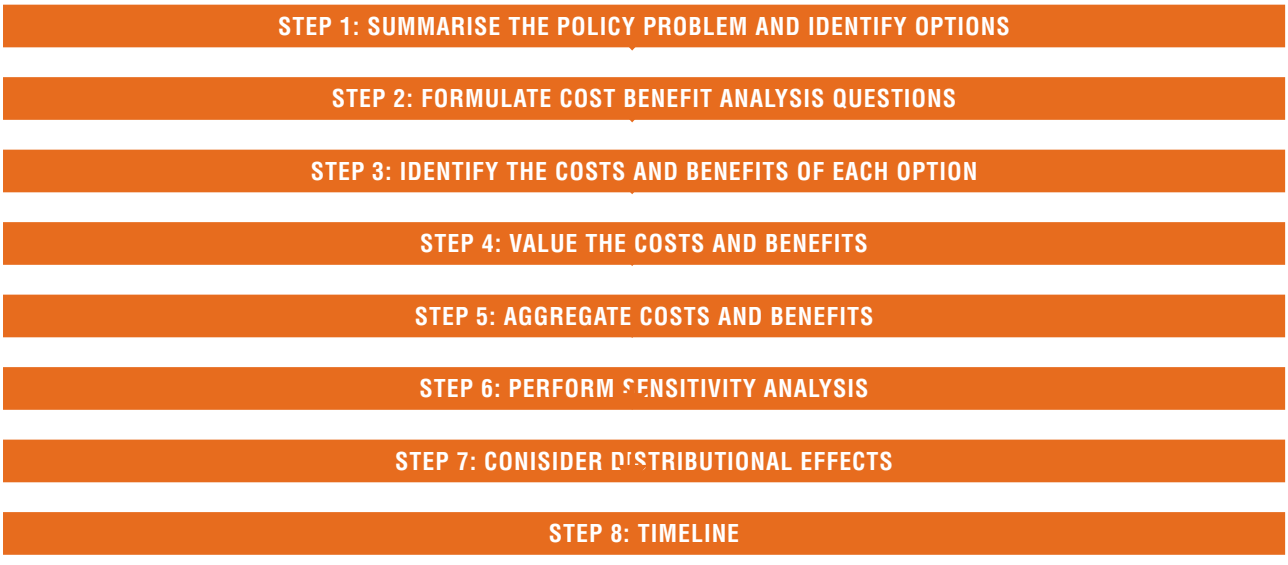

FIGURE 1. EIGHT STEPS OF THE CBA PROCEDURE

A key intention of the CBA WORKPLAN (TOOL) is to facilitate a multi-disciplinary approach to conducting a cost-benefit analysis study. Amongst other things, this helps to ensure that (i) all relevant information and data is inputted to the analysis; and (ii) any assumptions employed in the analysis are valid. This in turn helps to make sure the study is as accurate and hence useful as possible.

Another key intention of the CBA WORKPLAN (TOOL) is to facilitate a participatory approach to conducting the analysis where external technical assistance (e.g. consultant) is engaged to lead the conduct of the CBA study[1]. This helps ensure that (i) there is a good understanding amongst KSG policy makers regarding the methodology and results of the analysis; (ii) the results and recommendations are effectively communicated; and (iii) the study is appropriately used to inform decision-making. External technical assistance will likely be necessary for larger (e.g. >USD$1 million) and more complex policy proposals.

In addition, for some policy proposals the CBA WORKPLAN may be used as an analytical input in and of itself[2] – as appropriate. The CBA WORKPLAN is a very useful tool to help critically think through the 'pros' and 'cons' of different policy options in qualitative terms. For some policy applications – especially smaller policy proposals (e.g. <USD$1 million) or proposals that are initially being developed as a 'concept' – this level of analysis may be enough to inform decisions about what option(s) is the preferred one to address a given policy problem.

It is not always necessary, or desirable, to go on and complete a detailed quantitative (cost-benefit) analysis study. The level of detail in which a (cost-benefit) analysis is undertaken should always be commensurate with the importance of the objectives and resource consequences in view. Further a (cost-benefit) analysis study should always be focussed on informing a policy decision(s) – rather than a 'tick-the-box' or academic exercise for its own sake.

The remainder of this CBA WORKPLAN TOOL is organised into eight sections corresponding to the eight key steps of the CBA procedure illustrated in Figure 1 above.

It is suggested that officials refer back to the regional CBA guideline throughout the process of populating the CBA WORKPLAN TOOL, as needed.

1 In these instances, it is further suggested that a draft of the CBA WORKPLAN be firstly prepared by KSG officials and then the CBA WORKPLAN collectively finalised as (one of) the first deliverables of the consultancy assignment. Alternatively the CBA WORKPLAN can be prepared as the first activity that is undertaken.

2 In this way, a well-developed CBA workplan can serve as a 'preliminary qualitative CBA study'. The focus of such an analysis would be on steps 1, 2, and 3. Step 4 would provide a qualitative description of the project benefits.

Cost Benefit Analysis Workplan: [Title of policy proposal]

1. SUMMARISE THE POLICY PROBLEM, POLICY OPTIONS, AND RISKS

This step is a preparatory step to ensure there is a sound and shared understanding of the policy problem and the potential options to address the problem. This understanding is needed to be able to construct a meaningful CBA.

PROBLEM STATEMENT

Write a short statement defining the problem that the project is trying to address. This should include information on the nature, extent, and underpinning causes of the problem – making sure to reference sources of this information. Note also, there are typically multiple causes and factors contributing to a given problem.

PROJECT OBJECTIVE

Write a short statement defining the project objective. If possible, this objective should be specific and directly linked to one or more of the causes of the problem.

DESCRIPTION OF PROJECT OPTIONS

List and briefly describe each of the alternative options that have been identified to achieve the stated objective. Also check that these options:

- were identified through a thorough process, including review of what has been done in other parts of the country and the broader Pacific region, as well as consultations with communities;
- clearly align with the project objective (and causes/ drivers of the problem);
- are feasible, given the budget constraint for the project (if applicable);
- are clearly distinguishable from one another;
- are enough to provide the decision-maker with real scope for exercising choice.

EXTERNAL FACTORS AND RISK

Briefly list and describe the key external factors that potentially affect achievement of project objectives and how related risks have been accounted for in the design of each project options, if at all. An example of an external factor is a climate hazard event such as drought or cyclone.

2. Formulate cost–benefit analysis questions

The summary statements prepared as part of step 1 provides for a sound and shared understanding of the policy problem, policy options and their risks. Based on this understanding, the next step is to formulate key CBA questions. Key CBA questions are the questions that are most important to primary stakeholders for their strategic decision-making needs. They ask the questions that stakeholders, and in particular the KSG, 'really need to know' the answers to from the analysis. These questions provide a specific focus for the (cost-benefit) analysis work.

List the key questions that are to be answered from the CBA study.

For most CBAs, questions will be something like the following.

- Which option is the best option to address the identified problem?
- To what extent does the proposal represent a worthwhile use of resources? Is this proposal a high-priority for government? Should the government invest in this proposal?

There may also be other areas of interest specific to the policy problem or options under consideration, and which may warrant a dedicated CBA question or sub-question: For example, some stakeholders may be interested in better understanding:

- certain climate change and disaster risks and associated uncertainties for each of the policy options, or what design modifications could be considered to efficiently reduce these risks. A CBA question that could be considered here is "to what extent are the different policy options resilient to changes in the frequency of extreme tide events in the medium and longer-term future? That is, to what extent are the different policy options expected to generate a net economic benefit under different future climate (extreme tides) scenarios"
- how costs and benefits from the policy are distributed across different stakeholder groups. A CBA question that could be considered here is "to what extent are low socio-economic groups expected to be affected by the different policy options?"

The CBA questions should be clearly specified at the outset, and all parties involved should agree on them.

Only develop a short list of CBA questions (around 5) to keep the CBA practical and achievable.

3. Identify the costs and benefits for each option

Step 3 of the CBA WORKPLAN is to identify the costs and benefits for each option under consideration.

The approach for doing this is to first assess what would happen if the policy was not implemented ('without-policy' scenario), and then compare this to what would happen if each of the proposed options ('with-policy' scenario(s)) were to be implemented. This 'with-and-without' analysis allows the changes (benefits or costs) resulting from a policy option to be identified.

The intention is to identify only the changes that are clearly associated with the policy options, and not include changes that would have occurred anyway.

Populate the with-and-without analysis table below:

BASELINE – WITHOUT POLICY	OPTION 1	OPTION 2	OPTION 3
	COSTS		
	BENEFITS		

The left hand column of this table qualitatively describes what inputs, outputs, and outcomes/ impacts relevant to the policy problem are expected to be experienced without any policy options being implemented. That is, what would likely happen if the 'business as usual' pattern was followed, taking into consideration any trends observed for the relevant impacts/ outcomes, trends observed for the identified causes and drivers of the problem, including population growth, and whether any other activities are planned that seek to address the same or similar problems in the same area.

The right hand columns of the table describe these same inputs, outputs and outcomes/ impacts for the scenario where the proposed policy options are implemented relative to the without-project scenario (i.e. what changes the policy will result in against 'business as usual'). The right hand columns also include the additional inputs required to implement the policy options. These are the up-front (i.e. capital) and operational costs of the policy option.

The right hand columns further include any other outcomes or impacts associated with the policy options that are either not the intended focus of the policy or are experienced by third party stakeholder groups. These can be either positive (a benefit) or negative (a cost).

4. Value the costs and benefits

As far as practicable, the costs and benefits identified under the different project options should be valued in monetary terms.

Step 4 of the CBA WORKPLAN is to outline the methods that will be employed to value each of the cost and benefit items in monetary terms; what data is required to do this; and where this data will be sourced.

Further guidance on valuation methodologies and other key considerations for this step is provided in the 'regional CBA Guide'.

Populate a table like the one below for each policy option.

OPTION 1

COST/BENEFIT	VALUATION METHOD	DATA REQUIRED	SOURCE OF DATA
Cost 1			
Cost 2			
Benefit 1			
Benefit 2			

OPTION 2

COST/BENEFIT	VALUATION METHOD	DATA REQUIRED	SOURCE OF DATA
Cost 1			
Cost 2			
Benefit 1			
Benefit 2			

OPTION 3

COST/BENEFIT	VALUATION METHOD	DATA REQUIRED	SOURCE OF DATA
Cost 1			
Cost 2			
Benefit 1			
Benefit 2			

Remember, we are not trying to actually make the calculations at this stage but rather to map out how we will make the calculations and what data is needed to do this.

Note that, some cost and benefit items may be too abstract to measure or too small a consideration to justify going to the effort of collecting data and undertaking valuation analysis. For these such items, the table should list "qualitatively describe and discuss" in the valuation method column, and briefly outline the reasons why this item will not be valued in monetary terms.

5. Aggregate the costs and benefits

Step 5 of the CBA WORKPLAN is to outline how costs and benefits for each option will be 'aggregated'.

'Aggregation' refers to bringing together all the different costs and benefits from a policy option over its life, and presenting them as one number (value or ratio). The purpose of this step is to facilitate comparison of the different costs and benefits over time and across different options.

The key considerations for this step are:

- *the choice of discount rate; and*
- *the (economic efficiency) measures that will be estimated (most commonly for government projects this is net present value (NPV) and benefit–cost ratio (BCR)).*

More information on these concepts is provided in the regional CBA Guide.

DISCOUNT RATE

Specify the discount rate (%) that is to be used in the analysis and the reasons/justification for this choice.

ECONOMIC EFFICIENCY MEASURES

Specify the (economic efficiency) measures that will be estimated.

The most common measures used for government projects is (i) net present value (NPV); and (ii) and benefit–cost ratio (BCR).

Another measure that is also sometimes used is internal rate of return (IRR).

6. Perform sensitivity analysis

Step 6 of the CBA WORKPLAN is to outline how uncertainties are to be investigated in the study through 'sensitivity analysis'.

Uncertainty arises where there is a lack of information. This may occur where data has not been collected, where certain 'cause-effect relationships' are not well understood, or because it is difficult to predict how parameters that affect costs and benefits (e.g. frequency of extreme tide events) will change in the future.

A sensitivity analysis tests how results change if the value of uncertain parameters changes. This, in turn, helps us to understand the level of confidence with which we can answer CBA questions[3].

A sensitivity test can also be used as the key part of the analysis to answer certain CBA questions. An example of such a CBA question is: "to what extent are the different policy options resilient to potential changes in the frequency of extreme tide events in the medium and longer-term future? That is, to what extent are the different policy options expected to generate a net economic benefit under different future climate (extreme tides) scenarios". For this question, seeing how results change if we alter the frequency of extreme tide events parameter is the primary interest of the analysis.

KEY VARIABLES OR PARAMETERS FOR WHICH THERE IS UNCERTAINTY

List the key parameters for which there is uncertainty and are to be tested through sensitivity analysis.

Where applicable, an important parameter to consider here will be the frequency and intensity of future climate events (e.g. drought or cyclone events). In the medium to long term future, the forecasted likelihoods of certain climate events occurring (e.g. frequency and intensity of cyclone or drought events) is expected to change due to climate change (PCCSP, 2014). However, the extent (and direction for many climate variables) of this change is unknown. That is, the likelihoods of some climate events in the medium to long term are uncertain.[4]

DESCRIBE HOW UNCERTAINTIES ARE TO BE TESTED

Describe how key uncertainties will be tested. A simple methodology is to re-run the analysis using feasible "upper bound" and "lower bound" values for the uncertain parameter.

Outline the basis/ method for determining alternative values used in the sensitivity analysis (e.g. value referenced in a report or study, advice from experts).

3 e.g. which option is preferred?, or is preferred option a worthwhile investment?

4 The reason for this uncertainty is, among other things, (i) global climate models do not know with a sufficient degree of confidence by how much temperature and precipitations will increase from a given increase in greenhouse gas emissions, and (ii) global climate models are limited in their ability to predict climate at the regional or local level. The further into the future we look, the greater this uncertainty is.

7. Consider distributional effects

Step 7 of the CBA procedure is to consider how the costs and benefits generated from each option are distributed across the different stakeholder groups.

More information on different approaches for doing this is provided in the regional CBA Guide.

Provide a basic outline of how distributional effects are to be considered in the CBA study (e.g. quantitative benefit and cost mapping using a ‹matrix›).

A key matter to clarify here is how stakeholders are to be grouped. For example, a ‘community’ could represent one stakeholder group. Alternatively, it could be further broken down into low income and high income groups; gender groups; or geographically (e.g. component villages).

Another key matter to be outlined here is whether impacts on certain stakeholder groups warrant special attention (e.g. costs borne by low socio-economic groups).

The approaches employed here and the level of detail expected should be guided by the CBA questions established in Step 2. If distibutional effects are a key area of interest, then more analytical effort should be allocated to this step – and vice versa.

8. Timeline

This final step of the CBA WORKPLAN is to develop a schedule of activities to complete the cost-benefit analysis study.

That is, a timeline to conduct the cost-benefit analysis following the agreed approach established in the above steps of the CBA WORKPLAN.

TASK	DATE	RESPONSIBILITY
Data collection		
Data analysis		
Draft CBA report		
Peer review		
Final CBA report		
Briefing paper on CBA report		
Presentation on CBA report to xyz		
Incorporation of CBA report results and findings in project proposal and cabinet submission		

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