



Developing an Island Diagnostic Analysis

Report and Workshop Guide

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1. Introduction

1.1. What is the Island Diagnostic Analysis approach?

The approach taken for this Ridge to Reef Programme Island Diagnostic Analysis (IDA) has been derived from the Global International Waters Assessment (GIWA), the GEF Transboundary Diagnostic Analysis, and Pacific IWRM Diagnostic Analysis methodologies. The substance of these methodologies have been adapted to suit the broader ecosystem approach of the Ridge to Reef Programme and include terrestrial and marine ecosystems as well as water.

The resulting approach is a highly collaborative process to be used as a major strategic planning tool for integrated coastal management nationally.

The main role of the IDA is to identify, quantify, and set priorities for environmental problems that are cross-sectoral (or from ridge-to-reef) in nature. In particular, the IDA aims to:

- Identify & prioritise the ridge to reef problems
- Gather and interpret information on the environmental impacts and socio-economic consequences of each problem
- Analyse the immediate, underlying, and root causes for each problem, and, in particular identify, specific practices, sources, locations, and human activity sectors from which environmental degradation arises or threatens to arise.
- Identification and evaluation of options for reform and action

Consequently, an IDA provides the factual basis for the formulation of a Strategic Action Plan (SAP) for Ridge to Reef. In addition to this, however the IDA should be part of a process of engagement with stakeholders through the initial IDA development steps and the subsequent development of alternative solutions through the development of the SAP.

1.2. What does it comprise of?

National stakeholders will be engaged at the outset to form part of the IDA Development Team and perform the bulk of the analysis. National consultants will be engaged to develop specific aspects of the IDA reports, particularly the economic and social evaluations of options for reform.

The bulk of the IDA will be developed nationally over two workshop periods. This programme of events is further described in part 3.

The schematic below outlines the analytical IDA component and the strategic SAP component. This document focuses only on the IDA development.

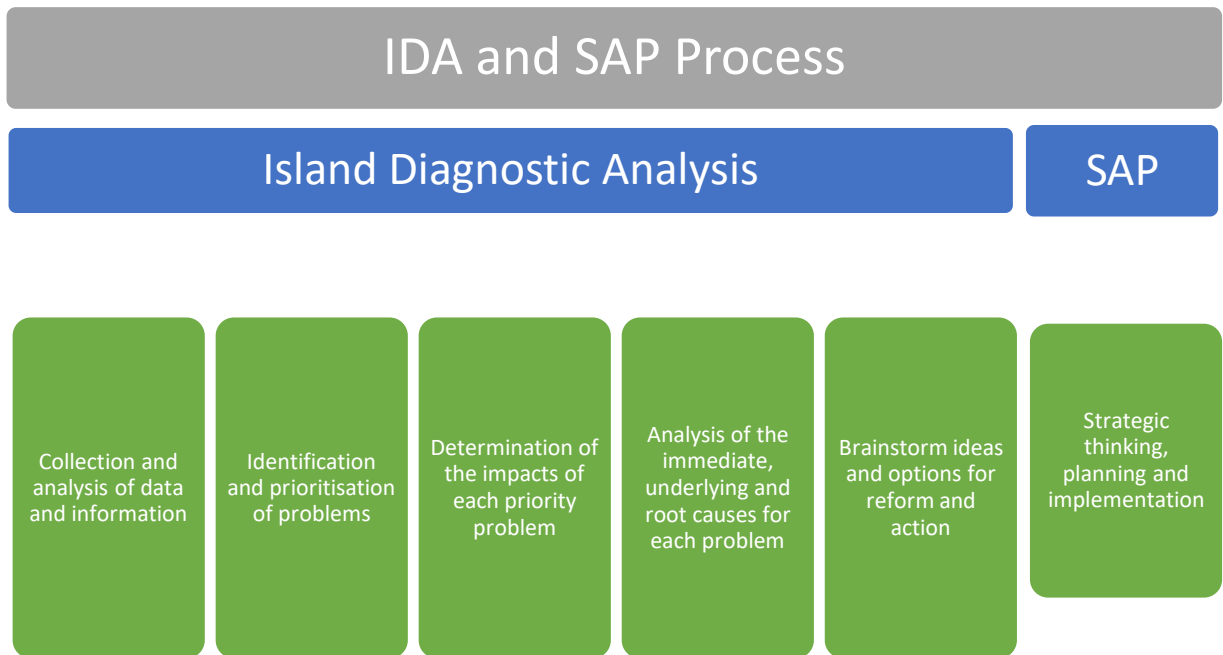


Figure 1: Schematic outline of the TDA and SAP process

1.3. The analytical component – The IDA

The main technical role of an IDA is to identify, quantify, and set priorities for environmental problems that are cross-sectoral in nature. The key steps in the IDA development process are:

- Collection and analysis of data/information
- Identification & prioritisation of the cross-sectoral (ridge to reef) problems
- Determination of the environmental and socio-economic impacts
- Analysis of the immediate, underlying, and root causes
- Identification of leverage points
- Brainstorm ideas and options for reform and action
- Strategise the new ideas and opportunities– prioritising alternatives
- Drafting the IDA

The IDA provides the factual basis for the strategic component of the IDA/SAP Process – strategic thinking, planning and implementation of the SAP. In addition to this, the IDA should be part of a larger facilitative process of engagement and consultation with all the key stakeholders from the initial IDA steps through to the subsequent development of alternative solutions during the formulation of the Strategic Action Programme.

NOTE: The IDA is a mechanism to help the participating countries to 'agree on the facts' - many conflicts are driven by perceptions and removing these can be an enormous step in itself.

Furthermore, the IDA should be seen as more than just an analysis of data and information. It is a powerful process that can help create confidence among the partners involved.

1.4. The strategic component – The SAP

The preparation of the SAP will be a highly cooperative and collaborative process involving the IDA Development Team and key stakeholders. The development of the SAP will not be explicitly addressed at this stage. A methodology and trial of SAP Development will be developed at the completion of the national IDA's and State of the Coast reports.

2. Developing the IDA

2.1. IDA Contents

The contents of the IDA may differ slightly between countries but the Table of Contents will follow:

- 1) Executive Summary
- 2) Introduction
- 3) Methodology
 - i) Identification of priority of environmental problems
 - ii) Analysis of causal chains
 - iii) Identification of priority options for reform and action
- 4) Description of [country]
 - i) Physical and Geographic characteristics
 - ii) Socio-economic situation
 - iii) Ecological status
- 5) Ridge to Reef Management in [country]
 - i) Natural resources
 - ii) National Protected Areas
 - iii) Island Vulnerability
 - iv) Institutional Arrangements
 - v) Public and Stakeholder Participation
- 6) National Priority Issues
 - i) Introduction
 - ii) National Priority Issue 1
 - a) Description of the problem and its national importance
 - b) Major environmental impacts and socio-economic consequences

- c) Linkages with other national problems
 - d) Immediate, underlying and root causes
 - e) Knowledge gaps
 - f) Conclusions and recommendations
- iii) National Priority Issue 2
 - iv) National Priority Issue 3
- 7) Options for Reform and Action
 - 8) Summary and conclusions

2.2. Data Information Collection and Analysis

The aim of the IDA is to use existing data and information and analyse it in an interdisciplinary or holistic manner. The amount of data and information available will vary from country to country. For most IDA's it is likely that data and information will come from:

- IWRM Diagnostic Analysis
- National environmental and socio-economic assessments
- National Rapid Coastal Assessments being undertaken concurrently through the Regional R2R Programme
- Data collected in National R2R Project
- Regional environmental and socio-economic reports
- National statistics

Data and information will be needed to confirm the findings in the IDA. In particular it is important to substantiate the:

- General situation in the various ecosystems (land, water, coast etc.)
- Priority national environmental problems
- Key impacts – environmental and socio-economic
- Causal chains – immediate, underlying, root causes
- Governance and stakeholder analysis

Background data and information will be collected for sections 4 and 5. A draft report that includes brief methodology will be prepared for circulation among the IDA Development Team prior to the start of the workshops. This is to ensure that there is a general understanding of the current state. This and further analysis will be reviewed and agreed upon by the development team.

As the IDA development progresses, various stages will require further confirmation with existing data. For example, after the prioritisation of options for reform, socio-economic evaluation will be undertaken on each and integrated into the final draft report.

2.3. Identifying and Prioritising Environmental Problems

The identification of national environmental problems is a crucial part of the IDA process. The difficulty and effort involved at this stage will vary widely depending on the particular circumstances of the country, and how recently this type of identification exercise has been done. Generally, the key determinants are likely to be the extent to which:

- Potential island environmental problems have been the subject of scientific research or project development at the national level
- Particular environmental problems have already been recognised as essentially ‘ridge-to-reef’ in nature

A key to the IDA development is the importance of prioritisation. Because there are often limited available resources, prioritisation helps to identify which environmental problems need to be considered further in the IDA.

For the purpose of the initial problem prioritisation, the problems need to be assessed by reference to criteria – features of the problem that contribute to its relative importance. The criteria that will be used has been synthesised from the IWRM Diagnostic Analysis criteria, GEF TDA criteria, GIWA criteria and trial feedback. This IDA is addressing environmental issues across a wide range of ecosystems and sectors and criteria needs to remain broad enough as to not become unwieldy for the Development Team to use.

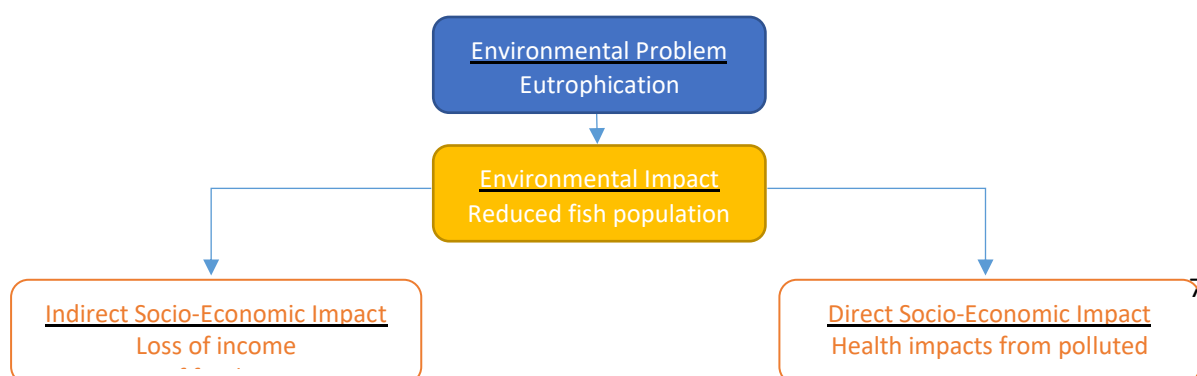
An initial list of environmental problems that can be used to guide discussion is available in Annex 1. There are two sets of criteria for prioritising identified environmental problems; the first can be used at the initial national prioritisation exercise as it is broad enough to cover many issues. The second list is more specific and can be used to prioritise further at identified sites. These can be found in Annex 1.

2.4. Determination of Impacts

2.4.1. What are Environmental and Socio-Economic Impacts

In the context of the IDA and SAP process, environmental impacts are the effects of an *environmental problem on the integrity of an ecosystem*. Socio-economic impacts are a change in the welfare of people attributable to the whole-of-island problem or its environmental impacts.

For example, eutrophication due to nutrient over-enrichment may result in high concentrations of nitrates or phosphates in a particular water body. The questions is: what are the impacts or consequences of this? An *environmental impact* might be a reduced fish population. This could result in a loss of income or food source for the coastal community. These are indirect *socio-economic impacts*. It could also result in impact on health from drinking or bathing in polluted waters. This is a *direct socio-economic impact*. This is shown in Figure 2 below.



2.4.2. Determining Environmental and Socio-Economic Impacts

There are 2 key steps in this process:

Step 1: Identification of the impacts of each of priority environmental problem

This step can be accomplished through the collaborative workshop involving the IDA Development Team.

Step 2: Further description of key environmental and socio-economic impacts

The purpose of this step is to describe the problem itself (using available survey data showing changes over time etc.) and the impact of the problem on the environment and socio-economically.

This step will be undertaken by the local consultant and include analysis of the following:

- economic costs of environmental impacts,
- gender analysis of the issues and impacts,
- social costs of the issues such as adverse effects on human health and welfare

This could likely result in detailed supporting text for each impact, including maps, graphics and figures. The following is an example from the Kura-Aras Transboundary Diagnostic Analysis (TDA) of impacts and consequences and the contributing economic sector. A similar template will be used in this IDA.

(a)

Transboundary problem	Environmental impacts and socio-economic consequences	Rank	Sector	Rank
Deterioration of water quality (e.g. pollution)	Risk to public health through contaminated drinking water, agricultural products and increases in potential of water-borne diseases	1	Urbanisation	1
			Industry	3
			Agriculture	2
	Degradation of aquatic ecosystems leading to decreased recreational value of ecosystem	2	Urbanisation	2
			Industry	3
			Agriculture	1
	Decline in bioresources (e.g. reduced fish stock) leading to loss of income from fisheries	3	Urbanisation	2
			Industry	3
			Agriculture	1

(b)

Transboundary problem	Environmental impacts and socio-economic consequences	Rank	Sector	Rank
Variation and reduction of hydrological flow	Shortage of irrigation water resulting in: low productivity of land and desertification leading to low income from agricultural activities	2	Agriculture	1
			Industry	3
			Urbanisation	2
			Natural causes	4
	Shortage of safe drinking water leading to poor sanitation, disease and gender related problems	1	Urbanisation	3
			Industry	1
			Agriculture	2
			Natural causes	4
	Shortage of water for industry leading to a decline in production, and a decreased capacity for hydro energy production	3	Industry	3
			Agriculture	1
			Urbanisation	2
			Natural causes	4

Figure 3: Example of Kura-Aras Basin impacts and contributing sectors

2.5. Causal Chain Analysis

2.5.1. What is Causal Chain Analysis

Causal chain analysis (CCA) is closely related to the Driver-Pressure-State-Impact-Response approach that is being used in the development of the framework for the State of the Coasts Reports.

At its most basic, a causal chain is an ordered sequence of events linking the causes of a problem with its effects. Each link in the causal chain is created by repeatedly answering the question ‘Why?’ A simple schematic showing the major components of a CCA is shown in Figure 4: Major components of a causal chain below. It is usually the case that we can “see” the direct and indirect socio-economic impacts and perhaps the environmental impacts, but often it is harder to decipher the causes.

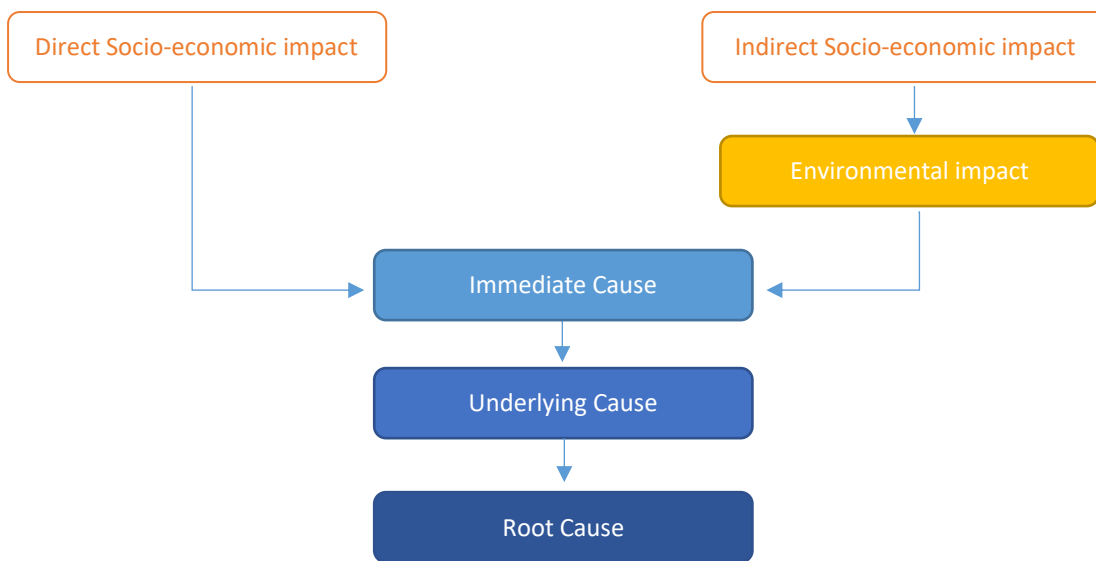


Figure 4: Major components of a causal chain

CCA is predicated on the belief that problems are best solved by attempting to address, correct or eliminate root causes as opposed to merely addressing the immediately obvious symptoms. By directing corrective measure at root causes, it is more probable that a recurrence of the problem will be prevented. It is likely that there may be several sectors that appear more often as root causes and therefore corrective actions can be focussed towards those areas.

CCA is historically used in a linear manner however keep in mind that a causal chain is a component of a policy response system which by its nature is cyclical (Figure 6).

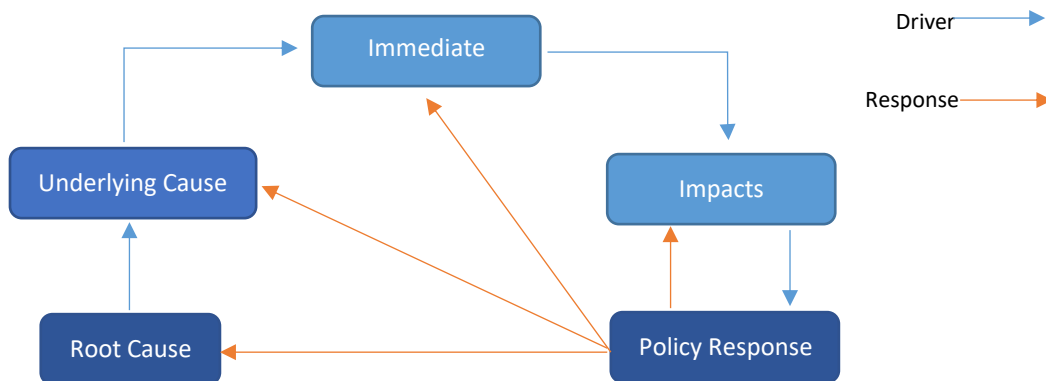


Figure 5: The causal chain as a component of a policy response cycle

2.5.2. Components of a Causal Chain

At its most basic a causal chain is an ordered sequence of events linking the causes of a problem with its effects. However, causal chains developed as part of the IDA tend to consist of 3 broad categories of causes:

- Immediate or technical causes
- Underlying causes
- Root causes

Immediate or technical causes – are usually the direct technical causes of the problem. They are predominantly tangible (e.g. enhanced nutrient inputs) and with distinct areas of impacts. Immediate causes usually being technical in nature are the most straightforward to quantify, prioritise and geographically locate using maps. A few examples of immediate causes are shown in Table 1 below.

Table 1: Examples of immediate causes

Environmental Problem	Examples of immediate or technical cause
Pollution	Discharge of untreated industrial effluents Diffuse pollution from improper application of fertilisers Point and diffuse sources of effluent from livestock farms Point and diffuse sources of effluent from untreated wastewaters
Fisheries	Excessive fisheries effort/overfishing Destruction of benthic habitats Damage to nursery/spawning areas Destructive fishing methods
Changes in biodiversity	Introduction of exotic species Sediments and pollution from land-based activities
Degradation of habitats	Changes in land use Conversion and/or degradation of mangroves

Underlying causes – are those that contribute to the immediate causes. They can be broadly defined as underlying resource uses and practices, and their related social and economic causes. Governance related causes are often identified here.

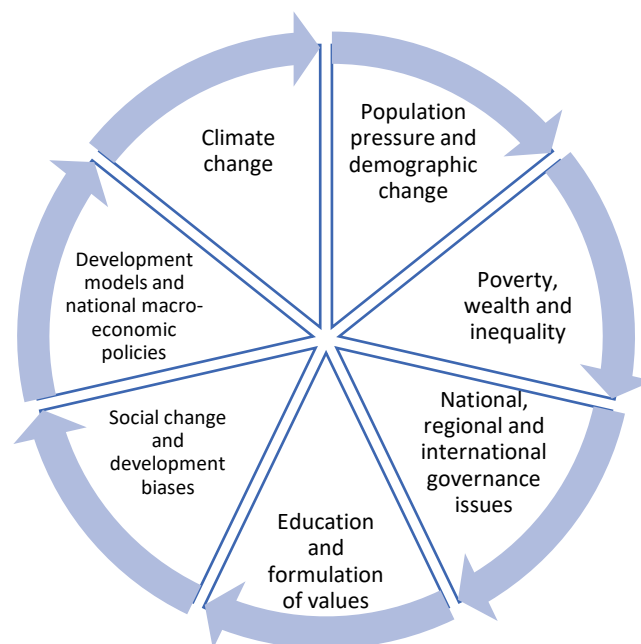
Resources use and practice causes	Social and economic causes
Land uses – reclamation, deforestation, agriculture	Lack of investment, operation and maintenance
Damaging or unsustainable practices – intensive livestock production, outdated water treatment technology, destructive fisheries practices	Poor awareness or education
Uses of water – diversion, storage etc.	Governance failures – legislation, regulation, enforcement

To identify these underlying causes it is necessary to understand which sector they fall in (agriculture, industry, tourism) and the governance framework within which they operate.

Root causes – are linked to the underlying social and economic causes and sectoral pressure but they are often related to fundamental aspects of macro-economy, demography, consumption patterns, environmental values, and access to information and democratic processes. Many of these may be beyond the scope of the R2R interventions but it is important to document them for two reasons:

1. Some proposed solutions might be unworkable if the root causes of the problem are overwhelming
2. Actions taken nearer to the root causes are more likely to have a lasting impact on the problem.

Root causes can be divided into the following categories:



In terms of importance to the degradation of the coastal, aquatic and terrestrial environment, root causes are often the most difficult to assess. Within each of the above categories, the underlying causes or pressures will link to numerous social/economic/governmental causes, at scales and levels that may vary significantly from country to country.

In the following example, the R2R Project would not be able to intervene in the root cause - cultural change in diet - but it is important to understand the driving force for this causal chain when deciding to whether to intervene at all.

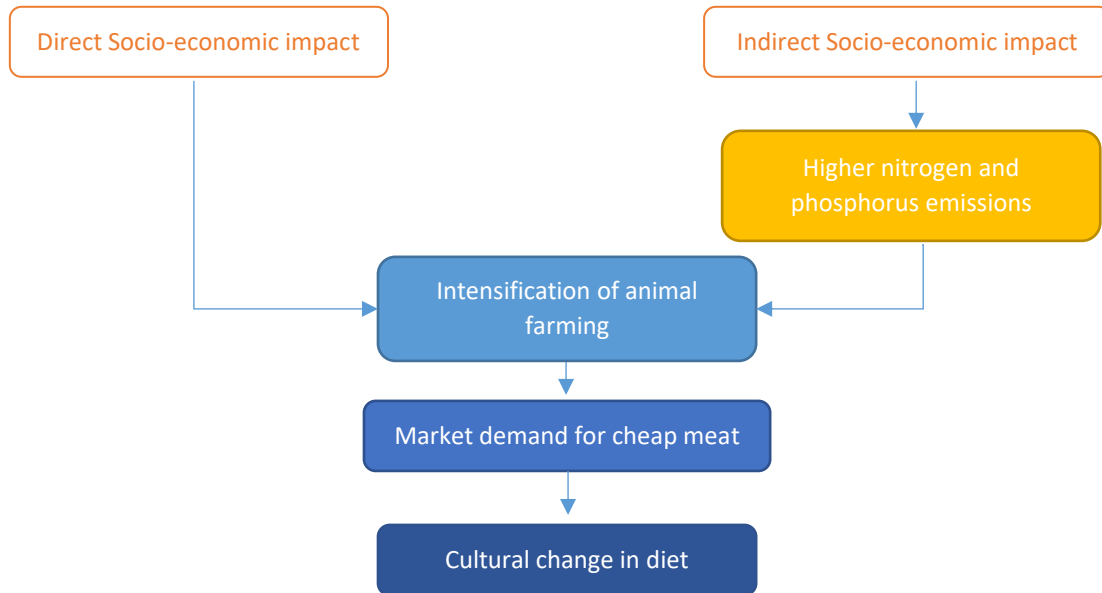


Figure 6: Example of a simple causal chain

2.5.3. How to Develop a Causal Chain

A causal chain should be developed for each priority environmental issue with its associated impacts and socio-economic consequences. A stepwise process is followed, the result of which will be a flow diagram for each priority environmental problem. A completed causal chain from the Kura-Aras TDA is shown below.

There are 2 key steps in the CCA process:

Step 1: Identification of the components of the causal chain

As with previous sections this step can successfully be accomplished through a collaborative workshop involving the IDA Development Team.

Step 2: Further development of the causal chains based on the outputs from the CCA workshop

It is highly probable that the outputs from the CCA workshop will only provide a starting point for the completed causal chains. At the very most it will produce a comprehensive list of sectors, immediate, underlying and root causes for the priority environmental problems with information on linkages between different levels.

The purpose of this step is to complete each causal chain and provide quantitative or qualitative data to substantiate the analysis if possible. Data collected from the Rapid Coastal Assessments, STAR Projects and existing data will be used for this. A flow diagram approach will be developed for communicating the information gathered through the CCA. The causal chain will be supported with a narrative with quantitative and/or qualitative data.

An example of a completed causal chain from the Kura-Aras Basin TDA is provided below.

2.5.4. Advice from the field

At each stage in the CCA, keep asking 'Why?' – Generally, five iterations of asking 'why' is sufficient to get to a root cause.

Causes interact – It is very likely that there will be links between several causes and the same effect or the same cause producing several different effects. In addition, activities in different sectors of society (e.g. agriculture, industry, transport, etc.) will result in specific causes and effects but these are likely to interact with other sectors.

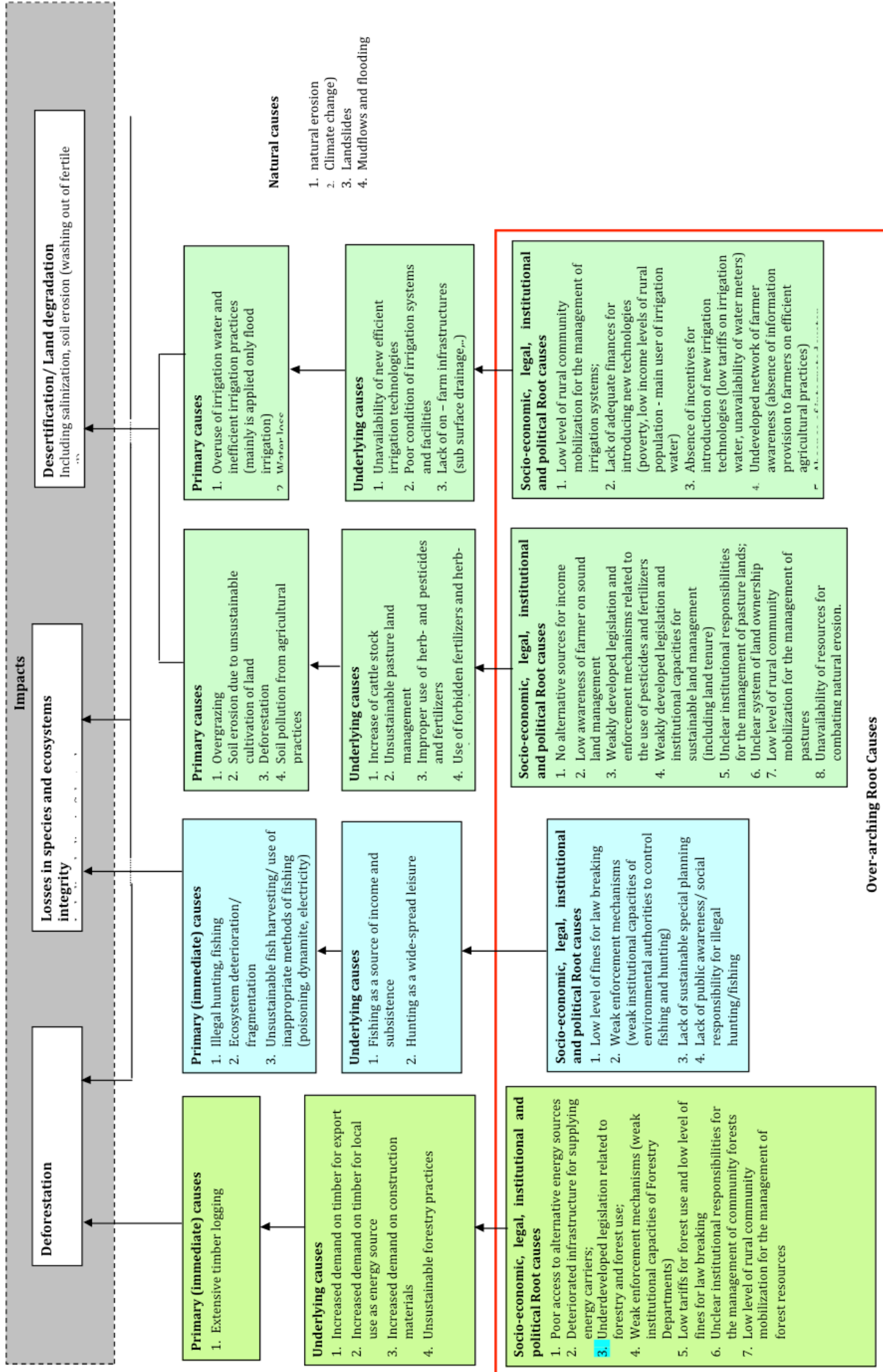
Do not underestimate the time needed to carry out CCA – It is unlikely that all the CCAs will be completed in one workshop. Work will need to be continued between sessions.

Expertise – Ensure that the TDA Development team members working on the CCAs cover all the areas of expertise needed. In particular, good social, legal, political and economic experts will be required.

Work in a stepwise manner – Start with the immediate causes and work towards the root causes.

Preparedness – Try to be well prepared prior to the main causal chain workshop. Have the CCA methodology well developed and understood by key members of the TDA Development team.

Briefing – The CCA process can be difficult for people to conceptualise, so ensure that the Development team are adequately briefed prior to any workshop by key members of the team and try not to be over ambitious.



2.6. Leverage Points

A leverage point is a place within a complex system where a small shift at one point can produce large changes elsewhere.

Leverage points come in many different forms. Some are most appropriately addressed with a policy change – for example, when an existing policy is causing perverse incentives driving industries to use water in excess of their actual need. Others are best approached with a change in technology or management practice – for example, when excessive water is being lost to evaporation due to out-of-date irrigation methods. Still others may require a change in attitude or simple habit, perhaps in conjunction with a technology change so that actors in a system begin thinking differently and making different decisions at the user level on a daily basis.

2.6.1. Identifying leverage points

The identification of leverage points is a crucial part of the diagnostic analysis process – a critical linking step between the diagnostic analysis and the development of a strategic action plan.

At this stage, it is not necessary to identify the specific changes or solutions to be introduced – this is part of the strategic thinking process.

The IDA Development Team needs to review the environmental problems, impacts, causal chains and governance analysis and identify where, in the map of cause-and-effect relationships, would interventions appear that have the largest potential for the broadest possible, positive influence on the eco-systems. As with previous steps, this can be carried out in a collaborative workshop.

2.7. Brainstorming Ideas and Opportunities for Reform and Action

2.7.1. What is Brainstorming?

Brainstorming is the rapid generation and listing of solution ideas without clarification and without evaluation of their merits.

Brainstorming works best with a varied group of people. Participants should come from a range of disciplines and have different backgrounds. Even in specialist areas, outsiders can bring fresh ideas that can inspire the experts.

A brainstorming session requires a facilitator, a relaxed environment and something on which to write ideas. The facilitator's responsibilities include guiding the session, encouraging participation and writing down ideas.

Initial brainstorming encourages a quantity of solutions rather than quality – the clearly inappropriate solutions can be eliminated in subsequent discussions. Brainstorming produces a creative flow of ideas uninterrupted by critical reflection.

Go for quantity, accept everything	<ul style="list-style-type: none"> •The greater the number of ideas generated, the greater the chance of producing radical and effective solutions
Defer judgement	<ul style="list-style-type: none"> •Criticism or evaluation of ideas generated should be put on hold •Focus on extending or adding to ideas
Allow unconventional ideas	<ul style="list-style-type: none"> •Look at the problem from new perspectives and suspend assumptions •New ways of thinking may provide better solutions
Build on each others ideas	<ul style="list-style-type: none"> •Good ideas may be combined to form a single better idea
List every idea	<ul style="list-style-type: none"> •Their person noting the ideas should not be a censor and should capture the ideas that the originator find acceptable
Every person and every idea has equal worth	<ul style="list-style-type: none"> •Every person has a valid viewpoint and a unique perspective on the situation and solution

2.7.2. Process for Brainstorming ideas, opportunities and solutions

Process

As described in Section 2.9, it is important to identify leverage points during the final stage of the TDA development process – thus linking the TDA and the SAP.

This step, aims to identify innovative ideas, opportunities or solutions that could be introduced, that target the leverage points and meet the goals identified in the previous section.

These could be innovative “new” ideas or opportunities; they may be defined as solutions or interventions. They could be “old” ideas – but they may have a new focus (i.e. replication of solutions or interventions from other regions; or applying a solution for one problem to another problem). The point is to be as creative as possible during this step – critical analysis of the proposed ideas or opportunities comes later.

There are numerous approaches to brainstorming, but the collaborative approach to brainstorming described in Volume 3 (Managing the TDA/SAP Process) is highly effective because it is energetic, openly collaborative and allows the SAP development team members to build on each other’s ideas.

Prioritisation

A key to the brainstorming process and the ultimate success of the SAP is the importance of prioritisation – an integral part of any strategic planning process. Because there are often

limited available resources, prioritisation helps to identify which innovative ideas or opportunities should be considered further during the TDA/SAP process.

This is not about producing a strict ordering of the ideas or opportunities, rather the purpose is to distinguish those that should be considered further in the SAP process from those that need not.

The brainstormed ideas and opportunities can be assessed by reference to criteria. Examples include, amongst others:

- Level of certainty that implementation will produce the expected/desired outcome
- Level of expected impact
- Feasibility of implementation

3. Planning the Diagnostic Analysis

3.1. Key milestones

The key milestones for the development of the Island Diagnostic Analysis (IDA) are:

- Create work-plan and budget
- Form IDA development team
- IDA launch meeting
- Causal chain analysis workshop
- Drafting the IDA (including socio-economic evaluations)
- IDA review meeting
- Strategic thinking workshop (ideas, opportunities and options for reform)
- National consultation process
- Adoption by steering committee

These milestones are presented in a simple checklist in Table 2, together with an indication of who is likely to be the lead individual or organisation for the action and who else is involved. In the trial of this methodology the RPCU will be providing lead staff or co-lead for most milestones. After successful trial and adoption of the methodology by the Regional Programme Steering Committee, these roles will be taken by the National Project Managers and National Consultants.

A generic Gantt chart showing key IDA development milestones is shown in Table 3.

Table 2: Checklist of milestones and responsibilities for IDA

Activity	PM	PSC	DT	NC (RPCU)
Create work-plan and budget	L			X
Form IDA development team	L	X		
IDA launch meeting	L		X	X
Causal chain analysis workshop	X		X	L
Drafting the IDA (including socio-economic evaluations)	X		X	L

IDA review meeting	X		X	L
Strategic thinking workshop (ideas, opportunities and options for reform)	X		X	L
National consultation process		X		
Adoption by steering committee		X		

Key:

PM – National Project Manager

PSC – Project Steering Committee

DT – Development Team

NC (RPCU) – National Consultant (or Regional Programme Coordinating Unit)

L – Lead; X - Involved

Table 3: Key IDA development milestones (indicative only)

Activity	Months						
	1	2	3	4	5	6	7
Develop work-plan and budget							
Form IDA development team							
IDA Launch meeting		*					
Causal chain analysis workshop		*					
Drafting the IDA							
IDA review				*			
Strategic thinking workshop				*			
National Consultation Process and final IDA review							
Review by steering committee							
Adoption by steering committee							*

*denotes a workshop or meeting

3.2. IDA Development Team

Ideally, the IDA Development Team will consist of high-level representatives of the various agencies, departments and NGO partners that are involved in the R2R. It is suggested to use the National Ridge to Reef, Inter-Ministerial Steering Committee (or similar) where possible. It may be necessary to include additional experts or community representatives.

Additional experts for the Development Team can come from a range of organisations, including:

- Key ministries or government departments
 - Environment, Fisheries, Marine, Forests, Agriculture, Infrastructure, Water, Climate, Women, Trade, Health, Education, etc.
- Government agencies
- Corporate entities
- Trade organisations

- NGO and CSO's
- Academia and research organisations
- Regional commissions

The Development Team should be as interdisciplinary as possible and should include, or have access to:

- Natural scientists – based on appropriate disciplines for the country
- Social scientists – social assessment and participation expert
- Economists – e.g. fisheries, environmental economists
- Legal experts – water, land, coast based legislation and regulations
- Policy experts – governance and institutions

In general, the Development Team will number between 10 – 20 participants, although understanding that not all team members will be available at all times. A participant checklist is provided in Annex 1.

3.3. Meetings and Workshops

A series of meetings and workshops are to be held during the IDA development phase. The programme consists of 4 main events. This includes the Strategic Thinking Workshops, which will be conducted at a later stage to align with Strategic Action Plan development phase of the R2R Project. The IDA Launch meeting and causal chain analysis workshop will be conducted on one day. The 4 events are:

- IDA Launch Meeting
- Causal Chain Analysis Workshop
- IDA Review Meeting
- Strategic Thinking Workshop – Ideas and options for reform

Workshop evaluation will be provided at the end of both rounds of workshops, and example of which can be found in Annex 1.

3.3.1. IDA Launch Meeting

The IDA Launch Meeting, or inception meeting, will bring together the national representatives from across the previously described organisations and disciplines. The main objectives of the meeting, through two workshops, will be to initiate the process of:

- Identifying and prioritising the island environmental problems
- Identifying the impacts of the priority problems

More detail on the structure of these workshops can be found in Annex 2.

3.3.2. Causal Chain Analysis Workshop

The objective of this workshop is to produce a comprehensive list of immediate, underlying and root causes for the priority island problems with information on linkages between different levels, which the IDA Development Team has reached consensus.

The Causal Chain Analysis Workshop will be held on the same day of the Launch Meeting. More details of the structure of the causal chain workshop can be found in Annex 2.

3.3.3. IDA Review Meeting

The objective of the IDA Review Meeting is twofold:

- To review the draft IDA document
- To identify the key leverage points in the IDA

Review of the draft IDA document: The various workshops, meetings and reports conducted during the IDA development will have produced a great deal of material that will be integrated into one document – the IDA. The draft IDA will be thoroughly reviewed by the IDA development team and key stakeholders to ensure it is fit-for-purpose and can be adopted by the project steering committee. Copies of the IDA will be circulated well in advance of this meeting.

Identification of key leverage points in the IDA: The IDA development team and other key stakeholders will review the island problems, impacts, causal chains and socio-economic analysis, and identify key leverage points. For example, where in this map of cause-and-effect relationships, interventions could appear that have the largest potential for the broadest possible positive influence on the island environment.

More details on the structure of this workshop can be found in Annex 2.

3.3.4. Strategic Thinking Workshop – Ideas and options for reforms

The Strategic Thinking Workshop is based around:

- Brainstorming ideas, opportunities and solutions that could be introduced that target the leverage points and meet the goals identified in the previous meetings
- Identifying options or alternatives that best meet the needs and realities of the country

The overall outcome of this meeting will be an elaborated table of specific alternative ideas, options or solutions that will provide the basis for more detailed in-country studies and discussions on options and alternatives.

More details on the structure of this workshop can be found in Annex 2.

3.4. National Consultation Process

Meetings to evaluate alternatives: The objective of these meetings will be to:

- Evaluate the options for reform and action developed by each country
- Prioritise options for reform and action

The national consultant will produce a comparative net benefit analysis of the options and circulate well in advance of national consultation. This will be used as the basis for the prioritisation exercise and thorough evaluation of the feasibility of the alternatives from a national perspective.

Adoption by the steering committee: The objective of this meeting is to have the IDA adopted by the national projects steering committee. The IDA will be circulated well in advance of the meeting to ensure that all stakeholders have an opportunity to review. Key agenda points for this meeting are:

- General overview of the IDA components
- The IDA development process
- Discussion of IDA contents
- Linkage between the IDA and the Strategic Action Plan development process

Annex 1: Criteria and templates

Contents

1. List of environmental problems to guide discussion
2. Criteria for prioritising environmental problems
3. Template for cause and impacts
4. Criteria for prioritising identified options for reform and action

List of environmental problems

Water systems	Exploitation of resources (living/non-living)	Global changes	Habitat and community modification	Pollution
Deterioration of water quality	Decline in commercial fish stocks	Coastal erosion	Habitat and biodiversity changes	Eutrophication
Changes in hydrological flow	Deforestation	Changes in hydrological cycles	Invasive species	Microbiological
Stress on ground and surface water resources	Deterioration of soil productivity	Increase in catastrophic events	Land degradation	Solid and liquid waste management
		Flooding	Ecosystem degradation (nearshore, terrestrial, surface water)	Suspended solids
		Sea level changes		

Criteria for prioritising environmental problems

Table 4: Criteria list for national prioritisation exercise

Criteria	Weighting (1 – 4)
Whole-of-island nature of a problem – geographical and temporal scale.	1 = no importance 2 = low importance 3 = moderate importance 4 = high importance
Future risk of the problem – (in 10 years)	1 = no importance 2 = low importance 3 = moderate importance 4 = high importance
Relationship with other environmental problems.	1 = no importance 2 = low importance 3 = moderate importance 4 = high importance
Expected multiple benefits that might be achieved by addressing a problem.	1 = no importance 2 = low importance 3 = moderate importance 4 = high importance
Progress in addressing this problem at the national level	1 = high progress 2 = moderate progress 3 = low progress 4 = no progress
Urgency of addressing this problem	1 = no urgency 2 = low urgency 3 = moderate urgency 4 = high urgency

Table 5: Criteria list for located priority site

¹ Criteria	Rating	Weighting (1 – 4)	Score
Size of the affected area (as percentage of the total national land area)	1- < 10sq.km 2- 10 to 100sq.km 3- 100 to 1000sq.km 4- 1000 to 10,000sq.km 5- >10,000sq.km	1 = no importance 2 = low importance 3 = moderate importance 4 = high importance	
Affected population (as percentage of national population)	1- < 1000 2- 1000 to 10,000 3- 10,000 to 100,000 4- 100,000 to 500,000 5- >500,000		
Extent to which the natural catchment, aquifer or receiving coastal and marine waters support the livelihood of local communities (e.g. subsistence or commercial farming, forestry, mining, tourism, fisheries)	1- very low importance (<10%) 2- low importance (10-30%) 3- average importance (30-50%) 4- important (50-80%) 5- very important (>80%)		
Extent to which the natural catchment, aquifer or receiving coastal and marine waters support the national development (e.g. commercial farming, forestry, mining, tourism, fisheries)	1- very low importance (<10%) 2- low importance (10-30%) 3- average importance (30-50%) 4- important (50-80%) 5- very important (>80%)		
Extent to which the site is a recognized government priority (refer to National Sustainable Development Strategy, or other strategic action plans e.g. NEAPs)	1- no, not a priority 2- yes, low priority 3- yes, medium priority 4- yes, high priority 5- yes, very high priority		
Extent to which the site is of regional and/or global significance and priority (see WWF ecoregions, IUCN categories, UNESCO world heritage sites, etc.)	1- no, not a priority 2- yes, low priority 3- yes, medium priority 4- yes, high priority 5- yes, very high priority		
Degree of Degradation at the site (e.g. type of degradation)	1- very low 2- low 3- average 4- high 5- extremely high		
Extent of degradation on catchment and/or aquifer and any receiving coastal and marine resources and systems	1- very low 2- low 3- average 4- high 5- extremely high		
Cultural or traditional value of the site	1- very low 2- low 3- average 4- high 5- extremely high		
Extent of community management at the site	1- very low 2- low 3- average		

¹ The rating set out under this table including proportion of area impacted or population affected, etc., will be manually estimated

	4- high 5- extremely high		
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Template for cause and impacts

Environmental Problem	Environmental Impacts and socio-economic consequences	Rank	Sector	Rank

Criteria for prioritising identified options for reform and action

Criteria	Rating	Weighting (1 – 4)	Score
Level of certainty that implementation will produce the expected/desired outcome		1 = no importance 2 = low importance 3 = moderate importance 4 = high importance	
Level of expected impact			
Feasibility of implementation			
Nationally appropriate approach			
Others			

Annex 2: Workshop Examples

Contents

1. Example of workshop programme agenda
2. Identifying and Prioritising Island Environmental Problems
3. Determining environmental and socio-economic impacts
4. Developing causal chains
5. Identifying leverage points
6. Brainstorming ideas and opportunities
7. Reviewing options and alternatives

Example of workshop programme agenda

One Day		
First IDA Workshop	AM	Identifying and Prioritising Island Problems Determining environmental and socio-economic impacts
	PM	Causal Chain Workshop
Second IDA Workshop	AM	Identifying leverage points Brainstorming ideas and opportunities
	PM	Reviewing options and alternatives

Workshop Example 1: Identifying and prioritising environmental problems

Length of workshop:

Approximately 2 hours of the first IDA Development Workshop.

Structure:

Plenary with the full IDA Development Team.

Purpose:

To reach a consensus between the IDA Development Team of the priority cross-sectoral problems affecting the whole-of-island.

The task:

1. With the aid of a good facilitator, and the predefined list provided in Annex 1, the IDA Development Team is encouraged to brainstorm a complete list of the environmental problems in country. The facilitator should prompt and write ALL answers on a flip chart or white board.
2. Once the list has been refined, encourage the team to focus in on the real environmental problems (many in the list are likely to be governance causes or impacts).
3. Finally get the team members to prioritise the problems based on the criteria provided in Annex 1 using printed score sheets. Each team member should score the environmental problems individually.

Island Environmental Problem Prioritisation Criteria:

Based on the set of defined criteria, assign a score to each transboundary problem between 0 (no importance), 1 (low importance), 2 (moderate importance) and 3 (high importance) to determine the relevance of the problem.

Report back and discussion:

Summarise the results in a spreadsheet (template provided) and present to the team for discussion. Conduct a critical discussion on the outputs and ensure a rapporteur captures all comments.

Outputs:

- List of island environmental problems, complete with information on geographical scale
- Agreed set of Island Environmental Problem Prioritisation Criteria
- Detailed list of prioritised transboundary problems with scoring data

Workshop Example 2: Determining environmental and socio-economic impacts

Length of workshop:

Approximately 2 hours of the first IDA Development Workshop.

Structure:

Initially in plenary to describe the process followed by small breakout groups. After plenary, IDA Development Team members divide into groups of between 3 and 8. Groups can be by discipline, environmental problem or mixed.

Preferably, the Project Manager/Consultant will define the groups prior to the workshop. At the end of the group work, each working group should report back in plenary.

Purpose:

To reach a consensus between the IDA Development Team of the key environmental and socio-economic impacts for each priority environmental problem.

The task:

1. Each group: Decide on a facilitator/chair, a rapporteur and ensure all members know each other.
2. Take one of the priority cross-sectoral problems and identify:
 - The environmental impacts
 - The direct and indirect socio-economic impacts
 - Make linkages between impacts and other island environmental problems
 - Identify geographical location(s) of impacts/consequences
3. Allow a set time period for each island environmental problem, e.g. 20 minutes

Report back and discussion:

In plenary, ask for feedback from each group. Limit the time for each group (e.g. 5 minutes) and keep a close eye on timekeeping. Allow time for a critical discussion within the group and ensure a rapporteur captures all comments.

Outputs:

- Comprehensive list of environmental and socio-impacts for the priority island environmental problems with information on linkages between impacts and problems
- Information on geographical location(s) of impacts
- Annotated list of discussion comments from IDA Development Team

Workshop Example 3: Developing causal chains

Length of workshop:

At least half-day of the first IDA Development Workshop

Structure:

Initially in plenary to describe the process followed by small breakout groups. After plenary, IDA Development Team members divide into groups of between 3 and 8 each taking responsibility for an island environmental problem. Mixed discipline groups work well – ensure that the group members working on this process cover all the areas of expertise needed. In addition to natural scientists, social, legal, political and economic experts will be required. Preferably, the Project Manager will define the groups prior to the workshop. At the end of the group work, each working group should report back in plenary.

Purpose:

To reach a consensus between the IDA Development Team of the immediate, underlying and root causes for each priority environmental problem.

The task:

Each group:

1. Decide on a facilitator/chair, a rapporteur and ensure all members know each other.
2. Review the priority problems and their associated environmental and socio-economic impacts.
3. For each problem, identify and list:
 - The key sectors (e.g. industry, agriculture, fisheries etc)
 - The immediate causes
 - The underlying resource uses and practices that contribute to each immediate cause
 - The underlying social, economic, legal and political causes of each immediate cause
 - Link the resource uses and practices, and social, economic, legal and political causes
 - Determine the root causes

The groups will also need to make linkages so provide white boards, flipchart paper or Post It notes as available.

Note: There might not be enough time to do all of the steps. The task can be reduced according to the level of engagement of the groups, their energy levels and the time available.

Report back and discussion:

In plenary, ask for feedback from each group. Limit the time for each group (e.g. 10 minutes) and keep a close eye on timekeeping. Allow time for a critical discussion within the group and ensure a rapporteur captures all comments.

It might be useful for a second round of group work to incorporate any ideas from the whole group. This would need to be agreed by the project manager, prior to the workshop. If a second round is decided, consider moving team members between groups.

Outputs:

- Comprehensive list of sectors, immediate, underlying and root causes for the priority transboundary problems with information on linkages between different levels
- Annotated list of discussion comments from IDA Development Team

Workshop Example 4: Identifying leverage points

Length of workshop:

Approximately 2 hours of the second IDA Development Workshop

Structure:

Small group (approximately 5 -7) of key IDA Development Team members – ensure that the group members working on this process cover all the areas of expertise needed.

Purpose:

To identify leverage points where changes can be made in the environmental system.

The task:

In a small group, or individually:

- Review the island environmental problems, impacts, causal chains and thematic reports.
- Where, in this map of cause-and-effect relationships, would an intervention appear to have the largest potential for the broadest possible, positive influence on water systems?
- Identify the leverage points – either graphically in the TDA materials and/or in list form

Remind the teams, if necessary that the leverage points are places to make change in the system, and not the specific changes or solutions to be introduced. Identifying what changes to introduce in the system is part of the strategic thinking process.

Outputs:

- A full list of leverage points with appropriate reference back to the TDA
- Annotated list of discussion comments from TDA Development Team

Workshop Example 5: Brainstorming ideas and opportunities

Length of workshop:

Approximately 4 hours of the second IDA Development Workshop.

Structure:

Initially in plenary to describe the process but followed by small breakout groups. After the plenary session, IDA Development Team members divide into groups of between 3 and 8 (possibly based around priority environmental problems or goals). Mixed discipline groups work well – ensure that the group members working on this process cover all the areas of expertise needed. Preferably, the Project Manager will define the groups prior to the workshop. At the end of the group work, each working group should report back in plenary.

Purpose:

Identification of ideas and opportunities that target the leverage points and meet the identified vision and goals.

The task:

In Breakout groups:

1. Decide on a facilitator/chair and a rapporteur and ensure all members know each other.
2. Get each group to review the leverage points associated with a specific environmental problem. Using this information, ask the question: 'With reference to the leverage points, what do you think would be some really exciting ideas and opportunities to achieve the goals?'
3. Brainstorm new ideas and opportunities in this area - remember the "Golden rules" of brainstorming. Limit the time for each brainstorming session (20 - 25 minutes is recommended but experience will show how much time is required).
4. Once the brainstorming starts, participants are encouraged to give their ideas and opportunities while the facilitator writes them down – usually on a white board or flip-chart for all to see. There must be absolutely no criticizing of ideas. No matter how silly or how impossible an idea seems, it should be written down. Laughing is to be encouraged. Criticism is not.
5. Once the time is up, encourage the group to identify the top ideas (normally between 3 and 10). Make sure everyone involved in the brainstorming session is in agreement.
6. Once the group has completed the task for the first environmental problem and/or goal, get them to move on to the subsequent problems or goals. Repeat the process until all group have had the chance to brainstorm ideas and opportunities for all problems and/or goals.

Report back and discussion:

In plenary, ask for a 5 to 10 minute report from each group to present the priority ideas and opportunities. Make sure that the whole SAP Development Team has ample time to review the resulting prioritized lists. Discuss whether the lists accurately reflect the thinking of the group and whether it seems like a reasonable set of potential approaches. This is the list that moves forward to the next strategic thinking step. Ensure a rapporteur captures all comments.

Outputs:

- Lists of prioritised innovative ideas and opportunities that target the leverage points and meet the identified vision and goals
- Annotated list of discussion comments from IDA Development Team

Workshop Example 6: Reviewing options and alternatives

Length of workshop:

Approximately 2 hours of the second IDA Development Workshop

Structure:

Initially in plenary to describe the process but followed by small breakout groups. After the plenary session, IDA Development Team members divide into groups of between 3 and 8 (possibly based around priority transboundary problems or goals). Mixed discipline groups work well – ensure that the group members working on this process cover all the areas of expertise needed. In addition to natural scientists, social, legal, political and economic experts will be required. Preferably, the Project Manager will define the groups prior to the workshop. At the end of the group work, each working group should report back in plenary.

Purpose:

Selection of ideas, opportunities or solutions that best meet the needs and realities of the region

The task:

In Breakout groups:

1. Decide on a facilitator/chair and a rapporteur and ensure all members know each other.
2. Facilitator introduces the review matrix that the group will be asked to complete
3. The breakout groups review (and if necessary, amend) the ideas, opportunities or solutions and then complete the table row by row, except for the 'Relative Priority' column which is completed by the breakout group once all the proposed solutions have been examined.
4. The facilitator of each group should ensure that his or her group takes its decisions by consensus; the objective is not to exclude any genuinely viable ideas, just to elaborate them further.
5. Groups should be encouraged to move forward if they become stuck on a particular point, and to return to it if time permits.
6. Where lack of information makes it impossible to complete one of the columns, information can be supplied after the meeting but there must be a clear agreement on who takes responsibility for this. At this stage, the tables should be seen as a 'work in progress'.

Report back and discussion:

In plenary, ask for a 5 to 10 minute report from each group to present the key findings. Allow time for a critical discussion within the group and ensure a rapporteur captures all comments.

Outputs:

- Completed tables of prioritised options and alternatives that meet the needs and realities of the region
- Annotated list of discussion comments from IDA Development Team