



ATKINS

St Lucia Coastal Habitat Mapping Project

Improving Our Understanding through
training and awareness raising



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The potential role of EIA and SEA in Coastal Management for St Lucia

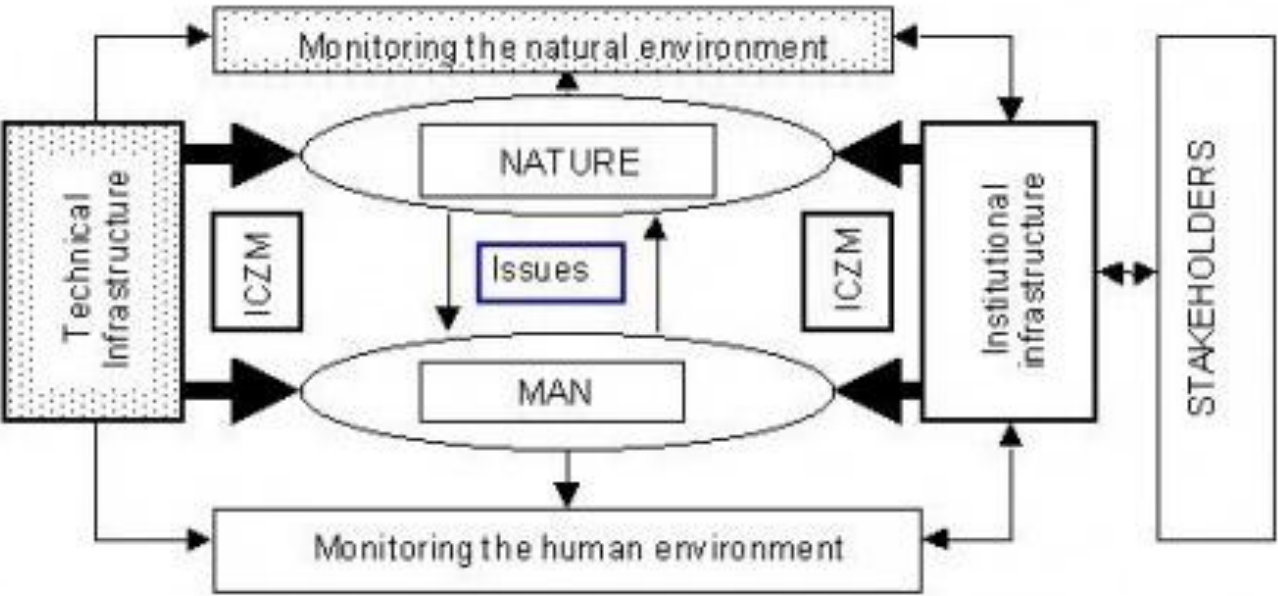
Jonathan McCue & Martin Le Tissier

What is Integrated Coastal Zone Management (ICZM)

- A process for the management of the coast using an integrated approach, including geographical and political boundaries, in an attempt to achieve sustainability through:
 - A dynamic, multidisciplinary and iterative process to promote sustainable management of coastal zones.
 - ICZM seeks, over the long-term, to balance environmental, economic, social, cultural and recreational objectives, all within the limits set by natural dynamics.
 - 'Integrated' in ICZM refers to the integration of objectives and also to the integration of the many instruments (policy areas, sectors, and levels of administration) needed to meet these objectives.
 - It means integration of the terrestrial and marine components of the target territory, in both time and space.

ICZM Framework

- issues;
- information;
- infrastructure;
- ICZM process;
- interaction.



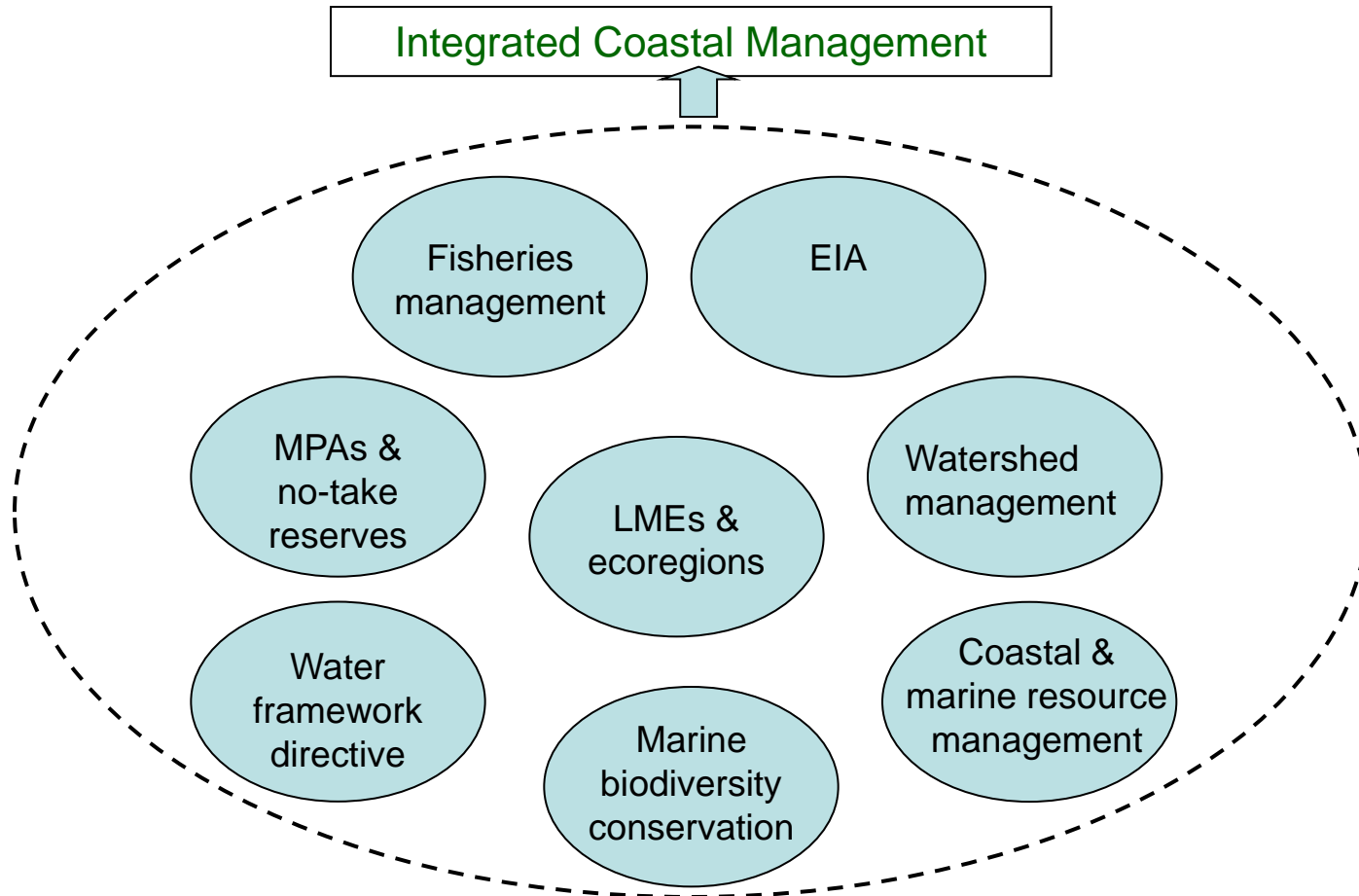
ICZM FRAMEWORK
The 5 i approach

Why is coastal management important?

- Coastal zones are of strategic importance.
- They are home to a large percentage of citizens.
- They are a major source of food and raw materials, a vital link for transport and trade.
- They are the location of some of our most valuable habitats, and the favoured destination for our leisure time.

Yet our coastal zones are facing serious problems of habitat destruction, water contamination, coastal erosion and resource depletion. This depletion of the limited resources of the coastal zone (including the limited physical space) is leading to increasingly frequent conflict between uses,

There are many existing instruments



Principles and practices (1)

- Why are we looking at this?

Evidence within St Lucia shows that incorporation of coastal management issues into project specific Environmental Impact Assessment, at an appropriate strategic level, is lacking.

ICZM in St Lucia – Key Players

- Sustainable Development and Environment Unit (SD&EU)
- Ministry of Agriculture, Forestry & Fisheries
- Ministry of Health, Human Resource services & Family Affaires
- Coastal Zone Management Advisory Committee
- St. Lucia Air and Sea Ports Authority
- Water Resources Management Unit
- Ministry of Physical Development, Environment and Housing

How many different policy instruments and methodologies are applied essentially to the same space and issues/problems?

Planning for Effective Coastal Management in St Lucia (6)

- Where future ICZM strategies or plans are developed in St Lucia coastal sediment and watershed management issues should be included.
- ICZM as a process requires clear engagement and integration of coastal stakeholders to better improve the synergy of sectoral objectives within plans/programmes operating within the coastal zone.
- To achieve this, a coherent approach across policy areas is needed and future ICZM in St Lucia may be used to provide a framework to this effect.

Principles and practices (1)

- The Economy of St Lucia – 2010 onwards

The 2009 Budget for St Lucia strategically targets:

- Economic Development Studies out of the Quadrant Development Initiative (eg: Vigie Beach Redevelopment Study; Southern Quadrant Reclamation Project; Port Castries Redevelopment)



July 7 – 8, 2009



Habitat mapping, St Lucia. Training

Principles and practices (3)

- The Economy of St Lucia – 2010 onwards

The 2009 Budget for St Lucia strategically targets:

- Housing development projects on the coast are targeted eg: Anse Le Raye;



Principles and practices (4)

- **The Economy of St Lucia – 2010 onwards**

The 2009 Budget for St Lucia strategically targets:

- the “Maritime Programme” as a focal area for development (yachting etc).
- Coastal Tourism related developments (e.g.: Ritz Carlton, Landings, Tides Sugar Bay etc);



Principles and practices (2)

- Strategic Environmental Assessment (SEA), as a complement to core robust planning and management procedures, is proposed as an important tool to help.
- It can provide decision makers in St Lucia with a real opportunity to help address strategic coastal management issues associated with sectoral plans/programmes for St Lucia as a whole (*link to St Lucia Economic Quadrant Study*).

SEA and Coastal Management in St Lucia (1)

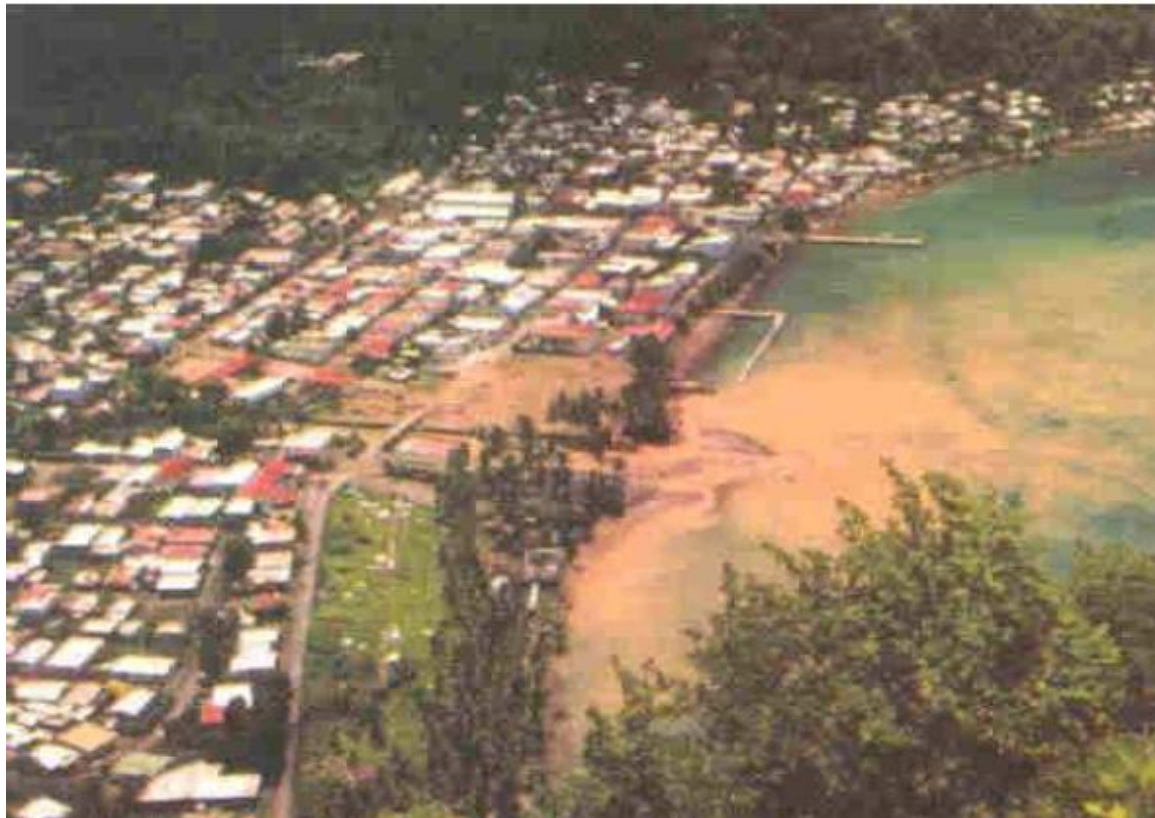
What is SEA?

- The purpose of Strategic Environmental Assessment (SEA) is to assess the environmental impacts arising from the implementation of a plan or programme.
- As far as this project is concerned, “plans” may include any that have a potential influence on the nature of the coast, be it from tourism development or from transport planning (eg: Castries port development)

Deforestation Plans? The impact on siltation?

Issues: changing land ownership in the watershed?

Role of local stewardship?



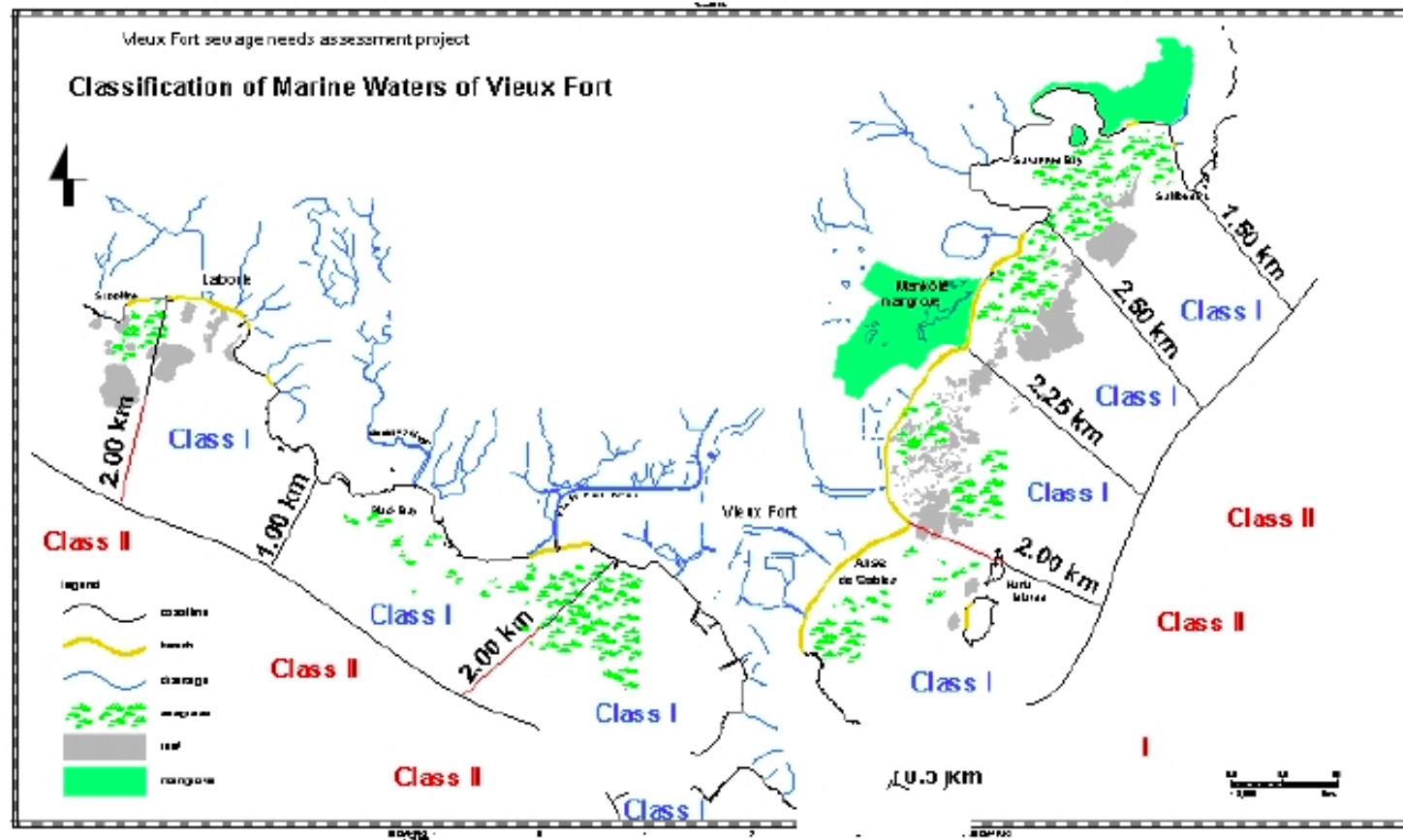
Solid Waste Management Plans? The impact on public health?



Wastewater Treatment and Sewage Disposal Planning? The impact on receiving waters?



Mapping Receiving Water Zones for Sewage Need Assessment (2006)



IWCAM – this work is not new!!



Integrating Watershed and
Coastal Areas Management
in Caribbean Small Island Developing States

**IWCAM – St Lucia Watershed
management pilots underway already**

SEA and Coastal Management in St Lucia (2)

So what could SEA Provide?

- Feeds into the decision-making processes,
- Ensures that impacts of a national plan or policy is considered.
- Provides a tool to enable different temporal and spatial scales to be considered, and to acknowledge the potential risks and uncertainties of plans/policies/programmes COULD influence future coastal decision making.

The need for Strategic Understanding

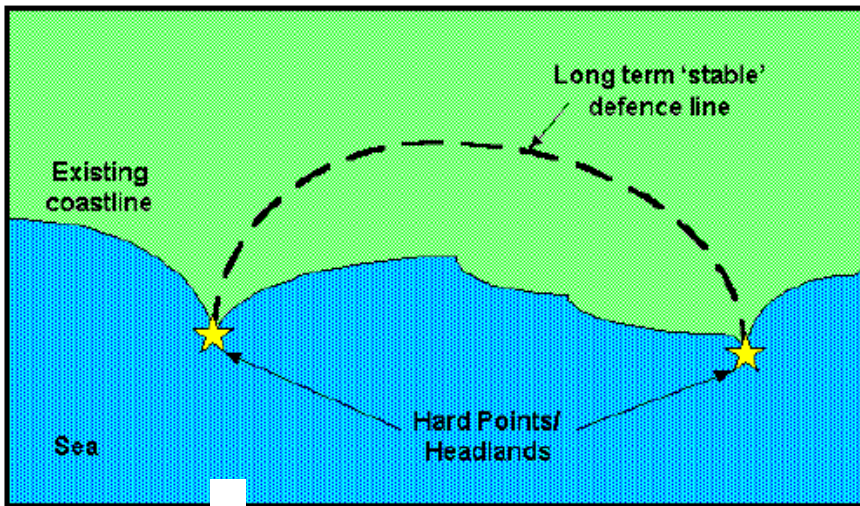


SEA and Coastal Management in St Lucia (3)

What else?!!

- SEA does offer the potential for better transparency in decision making at various planning scales.

Coastal Erosion Conundrum?



Littoral Drift direction

SCENARIO 3 – Intensive Tourism Development Area

To promote economic regeneration, a new area is designated for development. This exists in a “soft geology” cliffed region area with existing small villages along the coast. Hinterland is designated for its landscape/scenic quality. Transport plans wish to create new set back road system due to poor current infrastructure, tourist industry development require a “coastal” location. Coastal resilience to accommodating change within its “stable” state position is limited and would require significant defence investment

ICZM Conundrum?

Who is responsible for long term coastal defence in this unsustainable proposed tourist location? Should this be tourism developers, or Govt for promoting the concept in the first place?

SEA and Coastal Management in St Lucia (3)

What else?!!

- Seeks to enhance the integration of coastal management concerns where the current EIA procedures have been found not to be efficient.
- Opportunity for coastal habitat mapping work to be mainstreamed into relevant other sectoral plans (eg: the St Lucia Economic Quadrant Plan).

SEA Screening Exercises – Typical Questions

As opposed to the EIA Screening process, a more top level overview screening exercise is required for an SEA.

- Is the plan/programme likely to influence coastal habitats or marine ecosystem pathways?
- *(if so, an SEA is likely to be required).*
- Is the plan/programme likely to be influenced by the poor health/condition of a particular coastal habitat? *(if so, an SEA is likely to be required).*
- Is there a need for the plan/programme under review to consider cumulative effects on coastal habitats? *(if so, an SEA is likely to be required).*
- Does the plan/programme, in combination with other activities, have a cumulative effect on coastal habitat health and status??

Planning for Effective Coastal Management in St Lucia (5)

So why would this help St Lucia?

- Most plans and programmes do not set out a long enough “vision” that acknowledge coastal habitat change or shoreline evolution.
- The issue of cumulative impact of various plans on coastal habitats is **NOT** considered. Coastal habitat change can almost never be attributed to one single cause,.

Habitat Degradation



Incorporating Coastal Management Issues into SEA Processes (3)

- To achieve the St Lucia Economic Vision, the ability of these plans to at least acknowledge the importance of planning longer term (50 to 100 years) is paramount.
- This MUST be considered early in the SEA stages. An appreciation that plans and programmes may potentially affect coastal management in neighbouring Caribbean countries is also needed.

Incorporating Coastal Management Issues into SEA Processes (4)

- The development of trans-boundary coastal management objectives is an increasingly important message that should be incorporated into screening of the SEA.



Assessing alternatives (1)

- The identification and assessment of alternatives is an important part of the SEA process.
- A hierarchy of options needs to be considered that address:
 1. Need/obviation of demand,
 2. Mode/process,
 3. Location
 4. timing
 5. detailed implementation.

Assessing alternatives (1)

- **Scenario 1** - a port development or a coastal tourism strategy may influence or be influenced by coastal habitat health. Options need to be ranked (using different appropriate techniques available) to help decision makers select appropriate locations.



Assessing alternatives (3)

- Assessing the impacts of alternatives involves prediction of the impacts' magnitude, duration, etc; and evaluation of their significance.
- Coastal habitat management impact prediction is a technical process and evaluation involves judgement. Encouraging further training events and “hands on” experience will assist here.

Assessing alternatives (4)

- It is recommended that a “top level” impact assessment is carried out, based on an overview appreciation of coastal habitats at a strategic level
- This can be done by testing the predicted impacts against agreed indicators (e.g. for reef and water quality), the views of the local community, or using expert judgement.
- John Bythells talk shall elaborate on this later.....

Assessing alternatives (5)

- Many standard techniques can be used (eg: risk assessment, multi criteria analysis etc) to help assess impact prediction to aid evaluation.
- Mitigation strategies (ranging from improved training to better data management) can then be advocated for further consideration within the SEA.

Assessing alternatives (6)

	Definition	Coastal Example
Alternatives	Choices open to plan/programme makers for delivering the plan/programme objectives.	To assess whether port/marina development, nature conservation or urban development along a length of coast is the primary factor.
Prediction	Identification and description of the changes to the environmental baseline (impacts) that are predicted to arise from the plan/programme.	To predict whether the proposed urban development creates regional coastal management problems further downdrift; predict whether the scale, magnitude and location of the development exacerbates planning and management problems elsewhere; predict the likely environmental and cumulative impacts downdrift etc (increased population problems).
Evaluation	Determination of whether an impact is significant or not.	Based on prediction findings (modelling results etc), evaluate whether the proposed urban development and associated activities would increase sedimentation and coastal erosion significantly.
Mitigation	Measure to avoid, reduce or offset significant adverse effect of the plan/programme.	Based on the evaluation criteria used, propose suitable engineering or planning mitigation measures/policies such as hold the line, move seaward, managed realignment... or move the development further inland, reduce its scale etc.

Assessing alternatives (7)

Need or demand: *is it necessary?*
 Can the need or demand be met without new development / infrastructure at all?
 Can development be obviated? (eg: *is the port development of national importance and needed to help transport planning need?*)

↓ assume it is

Mode or process: *how should it be done?*
 Are there technologies or methods that can meet the need with less environmental/sustainability damage than 'obvious' or traditional methods? (*if the port is needed, can it be designed to minimise impact on sediment transport regimes or can sediment bypassing pumping be instigated?*)

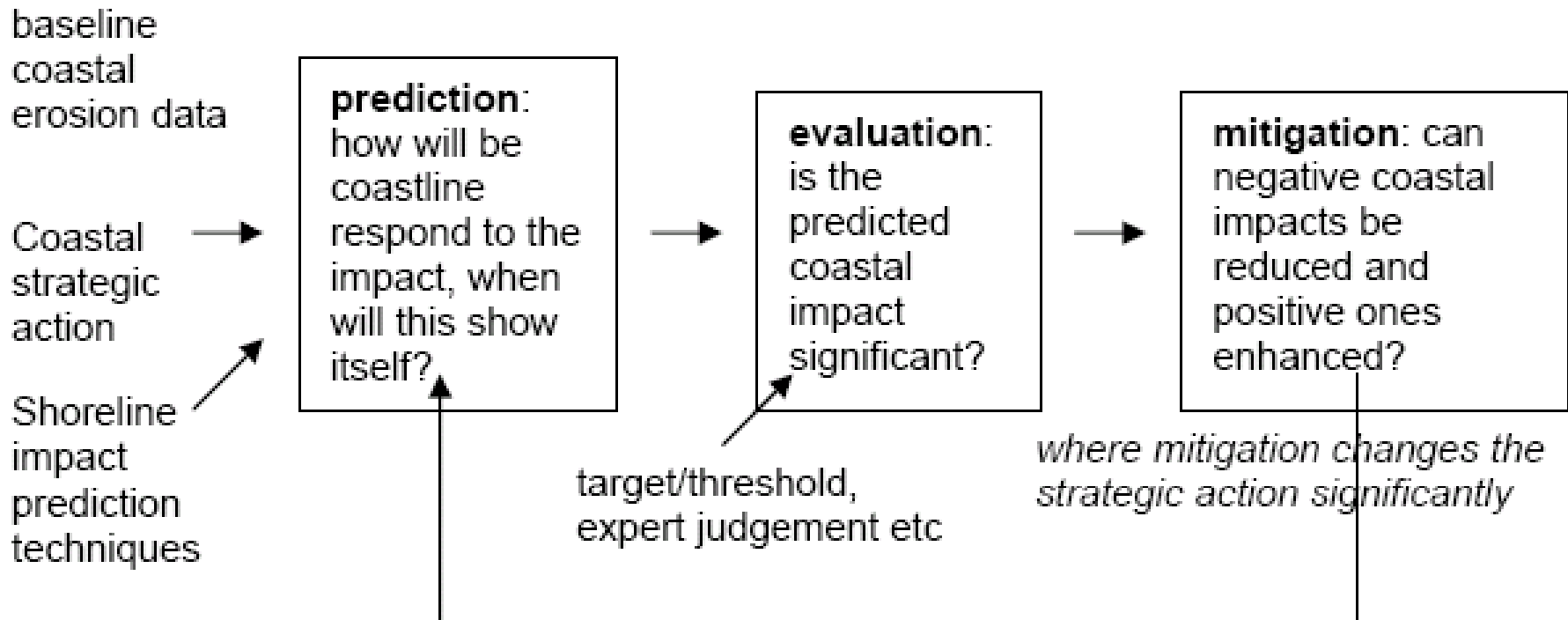
↓

Location: *where should it go?*
(could the port be located away from sediment reservoirs or strategically important environmentally areas ?)

↓

Timing and detailed implementation: *When, and in what sequence, should developments be carried out?*
 What details matter, and what requirements should be made about them?
(engineering design report details for the proposed port – EIA level of detail –

Linking SEA prediction, evaluation and mitigation for coastal habitat related impacts



SEA v EIA?

- Many differences between the two.
- Both play their part on delivering sustainable development for St Lucia.
- Session 11 shall see what now needs to be our focus of attention.