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SESSION 5: EIA SKILL-BUILDING/REFRESHER

Maputo, Mozambique ▪ May 2017



GLOBAL ENVIRONMENTAL
MANAGEMENT SUPPORT

SESSION OBJECTIVES & OVERVIEW

-OBJECTIVE: Build/refresh knowledge and field skills for identifying impacts of concern and appropriate mitigation

-OVERVIEW:

5a: Impact identification and mitigation theory

-5b: Field visit practicum (applying the theory)

-5c: Group read-outs, field visit good practices



— Session 5a: Impact identification and mitigation theory

RECAP: EIA

ENVIRONMENTAL IMPACT ASSESSMENT IS:

A formal process for identifying:

- likely effects of activities or projects on the environment, and on human health and welfare
- means and measures to mitigate & monitor these impacts



KEY EIA CONCEPT: IMPACTS

The **impact** of an action is the **change from the baseline situation** caused by the action.

The baseline situation is the existing environmental situation or condition in the absence of the action.

The baseline situation is a key concept in environmental impact assessment.

 To measure an impact, you must know what the baseline situation is.

TYPES OF IMPACTS & THEIR ATTRIBUTES

The EIA process is concerned with **all types of impacts...**

- 
- Direct & indirect impacts
 - Short-term & long-term impacts
 - Adverse & beneficial impacts
 - Cumulative impacts

But all impacts are **NOT** treated equally.

...and may describe them in a **number of ways**

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- Intensity
 - Direction
 - Spatial extent
 - Duration
 - Frequency
 - Reversibility
 - Probability

CUMULATIVE AND INDIRECT IMPACTS

Cumulative impacts: Effects on the environment which are caused by the combined results of past, current and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.

Indirect impacts: Also known as secondary, tertiary, and chain impacts, which are usually linked closely with the project but not directly, and may have more profound consequences on the environment than direct impacts.

KEY EIA CONCEPT: BASELINE SITUATION



- The baseline situation is not just a snapshot in time.
- This chart of groundwater levels shows both variability and a trend over time.
- BOTH are part of the groundwater baseline situation.

CHARACTERIZING THE BASELINE SITUATION

The **environmental components** of interest are those:

- likely to be affected by your action
- upon which your action depends for its success

Water? *Quantity, quality, reliability, accessibility*

Soils? *Erosion, crop productivity, fallow periods, salinity, nutrient concentrations*

Fauna? *Populations, habitat*

Env Health? *Disease vectors, pathogens*

Flora? *Composition and density of natural vegetation, productivity, key species*

Special ecosystems? *Key species*

WHERE DO I OBTAIN INFORMATION ON THE BASELINE SITUATION?

1. YOUR ORGANIZATION:

- **TALK** to staff who know the project, and know the sites.
- **OBTAIN** project documents and information

2. DIRECT OBSERVATION:

- **Go to the site(s)!** Look up publicly available satellite imagery before you go.

3. UTILIZE OTHER LOCAL TALENT & KNOWLEDGE:

- communities, government, counterparts

AREN'T WE FORGETTING SOMETHING?

What about reports by donor organizations and international agencies? What about government statistics? GIS databases?

All these sources can be useful (and sometimes necessary)

But good local information is the most important input

IMPACT EVALUATION PROCESS: THEORY

-  **1. Understand** the activities being proposed
-  **2. Research** the potential adverse impacts typical of these activities & know **how** they arise
-  **3.** Based on the potential impacts, **identify** which elements of the baseline situation are important
-  **4. Characterize** these elements of the baseline



Given:

1. the baseline conditions,
2. the project concept/design, and
3. How the adverse impacts arise,

DECIDE WHICH
POTENTIAL IMPACTS
ARE OF ACTUAL
CONCERN

IMPACT EVALUATION PROCESS: EXAMPLE

1. Proposed intervention: irrigation scheme
(wing dam diversion type ▪ water-intensive crops ▪
high fertilizer use, unlined canals & open-channel
irrigation)

2. Key potential impacts:

- Excessive diversion of water
- Salinization of soils
- Contamination of groundwater & downstream
surface water

3. Key elements of baseline:

- River flow volume, variability
- Soil & water characteristics & groundwater depth
- Downstream uses



IMPACT EVALUATION PROCESS: EXAMPLE

4.

Baseline characterization

- *River flow volume, variability*
 - Will divert 3% of normal flow
 - Low-year flows are 50% of normal
 - Downstream abstraction is <10% of total flow volume.
- *Soil characteristics & groundwater depth*
 - Soils are well-drained but relatively high in salts; groundwater 2m depth
- *Downstream uses*
 - Key water source for community domestic use & livestock, immediately downstream.

5.

THEREFORE:

IMPACTS OF CONCERN:

Salinization
Downstream
contamination

LITTLE CONCERN:

Excess
Diversion

**WHY THESE
CONCLUSIONS?**

MITIGATION DESIGN

A critical part of the EIA process—and of ESDM

(RECAP) MITIGATION IS...

The implementation of measures designed to eliminate, reduce or offset the undesirable effects of a proposed action on the environment.

HOW DOES MITIGATION REDUCE ADVERSE IMPACTS?

TYPE OF MITIGATION MEASURE	HOW IT WORKS	EXAMPLES
PREVENTION AND CONTROL MEASURES	Fully or partially prevent an impact/reduce a risk by: <ul style="list-style-type: none">▪ Changing means or technique▪ Changing or adding design elements▪ Changing the site▪ Specifying operating practices	PREVENT contamination of wells, by SITING wells a safe distance from pollution sources Add wastewater treatment system to the DESIGN of a coffee-washing station and train in proper OPERATIONS
COMPENSATORY MEASURES	Offset adverse impacts in one area with improvements elsewhere	Plant trees in a new location to COMPENSATE for clearing a construction site
REMEDIATION MEASURES	Repair or restore the environment after damage is done	Re-grade and replant a borrow pit after construction is finished

... and sometimes you may need to redesign the project to modify or eliminate problem components

MUST EVERY IMPACT BE MITIGATED?

Mitigation specified as a condition in the IEE or EA must be implemented

However, IEE/EA conditions may be generally worded. Then, judgment is required in designing specific mitigations to meet these conditions. Apply the following principle:

PRIORITIZE

!

POTENTIALLY SERIOUS IMPACTS/ISSUES

These must **ALWAYS** be mitigated to the point that the impact is non-significant

EASILY MITIGATED IMPACTS

Then, there may be other impacts for which mitigation is easy and low-cost

— Session 5b: Field Visit Practicum



FIELD VISIT: 3 “SITE WALK” OPTIONS

- Embassy construction
- Beach development – dikes
- Fish market



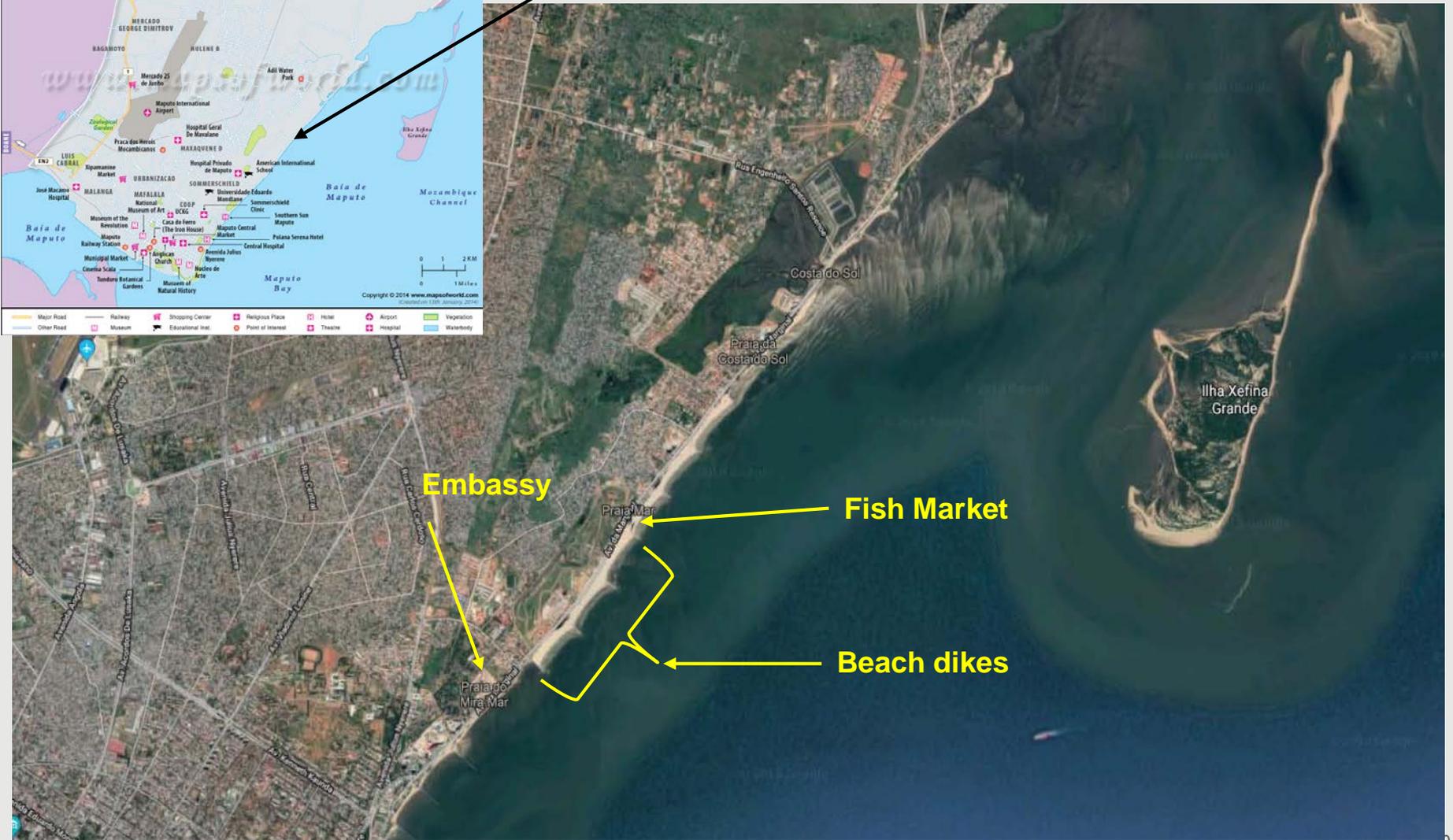
PRACTICUM OBJECTIVES

1. Practice “good” site visit preparation and habits
2. Reinforce our environmental and a climate lens
3. Characterize the baseline and identify impacts of actions at the site (consider direct, indirect, cumulative)
4. Practice stakeholder consultation
5. Consider mitigation measures in place or needed

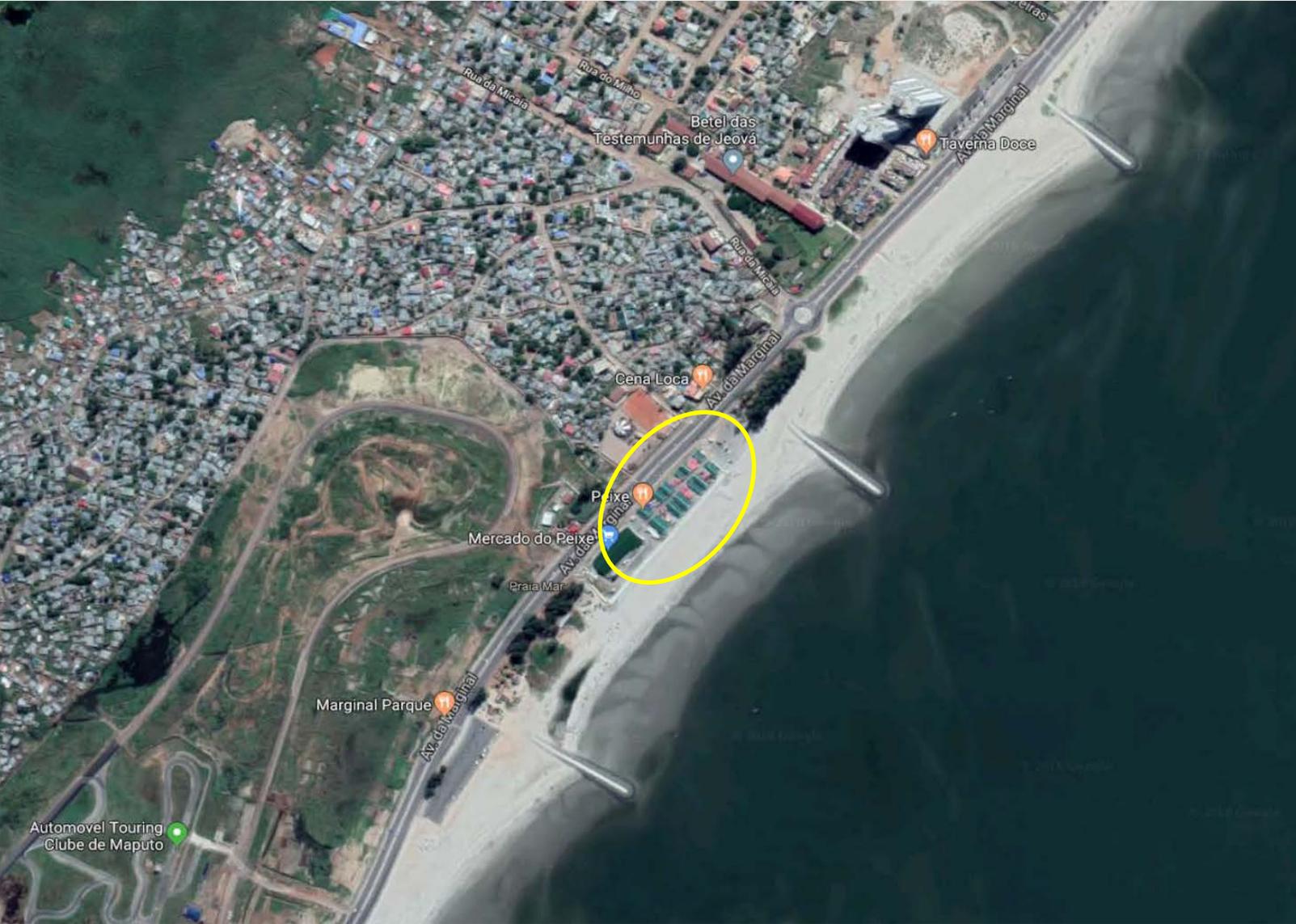


AREA OVERVIEW

Area of Interest



FISH MARKET AND DIKES



EMBASSY



DEVELOPMENT – THEN, NOW, FUTURE



LOURENÇO MARQUES (P. E. A.) — Praia de



INSTRUCTIONS

TASKS TO COMPLETE WITH YOUR GROUP

PRE-VISIT

1. Identify potential impacts of concern. Identify aspects of the baseline situation that you need to characterize to be evaluate these impacts.
 2. For actions in process, identify what mitigations might you expect and how would you be able to tell if they are being implemented & are sufficient?
 3. Plan who you want to talk to and the questions you would ask.
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DURING THE VISIT (ORGANIZE OBSERVATIONS USING THE PROVIDED TEMPLATE)

4. Observe the baseline situation, with particular attention to aspects you'd flagged as relevant during your preparations. Identify potential climate vulnerabilities or risks at the site..
 5. Discuss the actions with stakeholders on site—if none, nonetheless identify questions you'd like them to answer.
 6. Identify primary impacts and type (include direct, indirect, cumulative, and social as relevant)
 7. Observe any mitigation and climate adaptation measures needed or already in place. Consider their adequacy.
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POST-VISIT

8. Complete filling in the provided template and otherwise prepare to briefly report-out on points 1-7 above. In addition, address the following: How would you continue to monitor this site? How often is necessary?

— Session 5c: Field Visit Readouts & Good Practices

GOOD PRACTICES FOR ENVIRONMENTAL MONITORING & SITE SELECTION FIELD VISITS

PRE-FIELD REVIEW AND PLANNING

1. Review Project IEE, EMMP, and/or ERR, as well other relevant environmental documentation (e.g., USAID Sectoral Environmental Guidelines)
2. Review project documentation (e.g., work plans), map/satellite imagery of the area, and site drawings, if available
3. Plan consultations: via the IP, set up site visits and community meetings, as necessary [\[next session\]](#)
4. With IP staff identify any environmental issues of possible concern
5. Prioritize sites/concerns