

# دليل لإعادة استخدام بيانات خط الأساس السابقة في دراسات تقييم الأثر البيئي

## Criteria and Guideline for Reusing Environmental Baseline Data

### 1.0 Introduction

Environmental assessment is a cornerstone of sustainable development designed to protect our natural and social environment before new projects begin. Central of this process is the baseline data. Therefore, the purpose of this plan is to establish essential criteria and guidelines to enable the reuse of environmental baseline data in new projects, enhancing better data-driven decisions while ensuring environmental integrity and process efficiency. The criteria and guidelines apply to all new projects that are intended to reuse existing environmental baseline data. “The term “project” is defined as the execution of construction/demolition works, or other installation/decommissioning or schemes subject to Environmental Impact Assessment in accordance with national environmental regulations [ Law No 30 of 2002 and the executive order (By-Law) of 2005]”

### 1.1 Definition of Environmental Baseline Data

Environmental baseline data is defined as a comprehensive collection of scientific information obtained from direct field monitoring, surveys, interviews, observations, government records, scientific literature, satellite imagery and existing databases describing the current state of physical, biological, and socio-economic environmental conditions. In addition to Environmental Impact Assessments (EIAs), many types of environmental baseline data routinely collected like physical environment data (meteorological data, geological and soil data, hydrological data), biological and ecological data (biodiversity and wildlife inventories, satellite and remote sensing data, marine and coastal data), environmental quality data (air, land and water), socioeconomic and human health data (demographic and census, land use and cultural heritage) can be reused to save time and cost in newly proposed project. These data types are typically sourced from governmental, academic, and previous industrial projects.

### 1.2 Inconsistencies and Risks

There are various inconsistencies and risks associated with current practices regarding environmental baseline data reuse. The following are some inconsistencies and risks that have been identified:

Inconsistencies:

- ♦ Lack of standardization:
  - There is no universal standard for reusing environmental baseline data, leading to inconsistencies in data quality and relevance.
- ♦ Variable data age limits:
  - Different projects and jurisdictions have different data age limits, ranging from 1 – 5 years.

- ♦ Inconsistent geographic thresholds:
  - Distance limits and ecological similarity criteria vary widely.
- Risks:
- ♦ Data accuracy and relevance:
  - Outdated or inaccurate data can lead to incorrect assessments and decisions.
- ♦ Variable data age limits:
  - Different projects and jurisdictions have different data age limits, ranging from 1 – 5 years.
- ♦ Inconsistent geographic thresholds:
  - Distance limits and ecological similarity criteria vary widely.

### 1.3 Advantage of reusing environmental baseline data

The advantage of reusing existing environmental baseline data can significantly save cost and time, but it requires careful validation to ensure regulatory compliance and scientific robustness.

## 2.0 Criteria for Reusing Environmental Baseline Data:

- ♦ Relevance
  - Ensure the data is relevant to the current project scope, objectives, and environmental context.
- ♦ Data Quality
  - Verify the data accuracy, precision, and reliability, considering factors like data collection methods and analysis techniques.
- ♦ Data Currency
  - Assess the data's recency and consider updates or new data collection if environmental conditions have changed significantly.
- ♦ Applicability
  - Evaluate the data's applicability to the project location, scope, and environmental context.
- ♦ Documentation
  - Ensure the data is well-documented, including metadata, context information, and clear descriptions of data sources and methods.

### 2.1 Technical Considerations:

- ♦ Data Standards and Protocols:
  - Ensure compliance with relevant national or international standards.
- ♦ Data Management and Storage:

- Ensure proper data management, storage, and archiving, with adequate security and backup measures.
- ◆ Data Sharing and Access:
  - Consider data accessibility and sharing, respecting intellectual property and confidentiality concerns.

## 2.2 Regulatory Compliance:

- ◆ Regulatory Requirements:
  - Adhere to relevant regulatory requirements and guidelines for reusing environmental baseline data.
- ◆ Authority Consultation:
  - Consult relevant authorities (MECC) on the proposed data reuse. The reuse of environmental baseline data is regulated by the Ministry of Environment and Climate Change (MECC) under laws such as Law No. 30 of 2002.

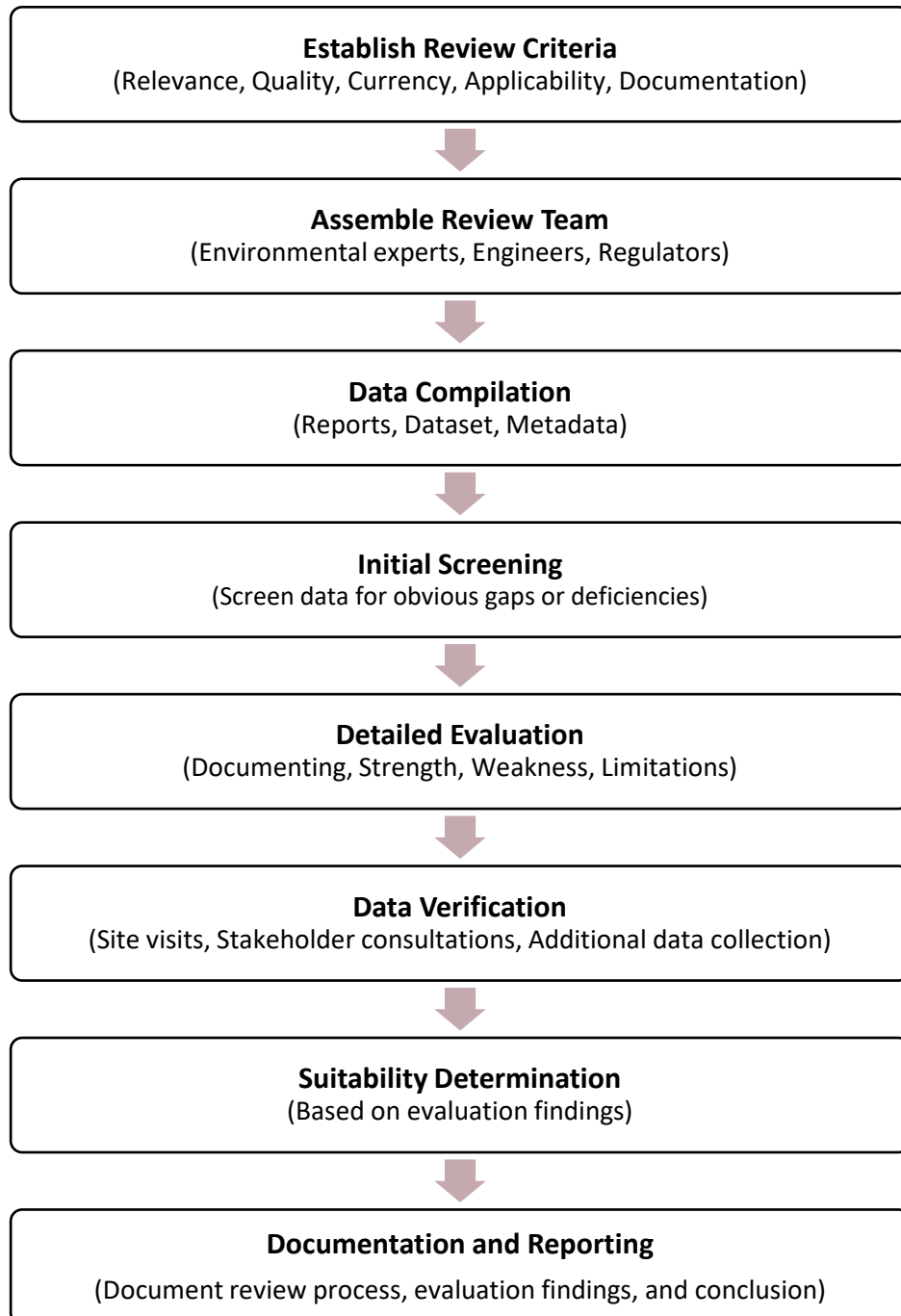
## 2.3 Implementation Steps:

- ◆ Data Review Protocol:
  - Develop a protocol for reviewing and evaluating the suitability of existing data for reuse
- ◆ Data Evaluation and Verification:
  - Conduct a thorough evaluation of the existing data, considering the above criteria. Verify the data quality, accuracy, and relevance to the current project.
- ◆ Documentation and Reporting:
  - Document the data reuse process, including the evaluation and verification steps.
  - Report on the findings and conclusions of relevant stakeholders.



## 2.4 Protocol for Reviewing and Evaluating Environmental Baseline Data

(This protocol should be strictly followed by project proponent/ consultants)



### 3.0 Evaluation Checklist Forms for Environmental Baseline Data (for consultants use):

♦ Relevance

| Criteria                                                      | Evaluation |
|---------------------------------------------------------------|------------|
| Is the data relevant with project scope and objectives?       | Yes/No     |
| Are the environmental conditions and project context similar? | Yes/No     |
| Is the data collected for similar project type?               | Yes/No     |

♦ Data Quality

| Criteria                                     | Evaluation |
|----------------------------------------------|------------|
| Were the data collection methods documented? | Yes/No     |
| Were the data analysis techniques sound?     | Yes/No     |
| Is the data validated and verified?          | Yes/No     |

♦ Data Currency

| Criteria                                                                                                   | Evaluation |
|------------------------------------------------------------------------------------------------------------|------------|
| Is the data collected within stipulated years according to type of project?                                | Yes/No     |
| Are there any significant changes in environmental conditions or project context since the original study? | Yes/No     |
| Is the data still relevant to current project context?                                                     | Yes/No     |

♦ Applicability

| Criteria                                                                | Evaluation |
|-------------------------------------------------------------------------|------------|
| Is the data applicable to project location?                             | Yes/No     |
| Are there any site-specific factors that may affect data applicability? | Yes/No     |
| Is the data can be extrapolated to project site?                        | Yes/No     |

♦ Documentation



| Criteria                                            | Evaluation |
|-----------------------------------------------------|------------|
| Is the data well-documented?                        | Yes/No     |
| Is the metadata and context information available?  | Yes/No     |
| Are the data sources and methods clearly described? | Yes/No     |

### 3.1 Additional Evaluation Checklist for Environmental Baseline Data:

#### ♦ Data Collection Methods

| Criteria                                                        | Evaluation |
|-----------------------------------------------------------------|------------|
| Is the sampling methods documented?                             | Yes/No     |
| Are sampling locations and frequency adequate?                  | Yes/No     |
| Is the equipment for data collection calibrated and maintained? | Yes/No     |
| Are quality control measures implemented?                       | Yes/No     |

#### ♦ Data Analysis and Interpretation

| Criteria                                        | Evaluation |
|-------------------------------------------------|------------|
| Are the data analysis methods documented?       | Yes/No     |
| Are statistical methods appropriate?            | Yes/No     |
| Are the results accurately interpreted?         | Yes/No     |
| Are limitations and uncertainties acknowledged? | Yes/No     |

♦ Data Management and Storage

| Criteria                                              | Evaluation |
|-------------------------------------------------------|------------|
| Is the data properly stored and archived?             | Yes/No     |
| Are the data security measures implemented?           | Yes/No     |
| Is the data accessible and shareable?                 | Yes/No     |
| Are the data backup and recovery procedures in place? | Yes/No     |

♦ Regulatory Compliance

| Criteria                                                         | Evaluation |
|------------------------------------------------------------------|------------|
| Are the data collection and analysis compliant with regulations? | Yes/No     |
| Are the relevant permits and approvals obtained?                 | Yes/No     |
| Are the data reporting and disclosure requirements met?          | Yes/No     |

## 4.0 Geographic and Temporal Thresholds

Reusing environmental baseline data depends on its validity, which is determined by how much the environment has changed since the data was first collected. While absolute "thresholds" vary by jurisdiction and environmental component, the following general standards apply:

### 4.1 Geographic Thresholds

Geographic thresholds for reusing environmental baseline data in new projects generally dictate that secondary (existing) data must be representative of the project's area of influence (Aoi), typically defined based on project location, distance thresholds, and ecological similarity.

- ♦ Project Location:
  - The project site should be within the same geographic area as the previous environmental study.
- ♦ Distance Decay
  - The relevance of data generally decreases with increasing distance from the new project site. A specific radius of influence is often defined during the scoping phase, and data from outside this area is treated with caution or excluded.

- ♦ Ecological Similarity
  - The project site should have similar ecological characteristics to the original study area. Data is most reusable if it comes from the same ecological system, watershed, or air basin, as these areas share similar underlying processes and sensitivities.

Example of Geographic Thresholds for Reusing Environmental Baseline Data

| Project Type      | Distance Limit                                  | Example Project                                                                                              | Clarification                                                                                          |
|-------------------|-------------------------------------------------|--------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|
| Local projects    | Up to 1 km                                      | Building construction, small-scale infrastructure (roads, upgrading works, etc.).                            | Projects with localized environmental impacts, similar environmental context.                          |
| Regional projects | Up to 5 km                                      | Medium-scale industrial projects (roads, bridges, ports, expansion of LNG production etc.).                  | Projects with potential for localized environmental effects, similar environmental context.            |
| National projects | Up to 10 km                                     | Large-scale industrial projects, major infrastructure (city expansion, power plant, desalination plant etc.) | Projects with significant environmental impact, potential for widespread environmental effects.        |
| Coastal projects  | Within same coastal cell or littoral drift cell | Coastal developments, coastal reclamation, marine projects                                                   | Projects with potential impacts on coastal processes, requiring similar coastal environmental context. |

#### 4.1.1 Exceptions and Consideration:

- ♦ **Sensitive Areas:** If the project is located near to sensitive receptors (protected areas, coastal wetlands, mangroves, seagrass, coral reefs), the above distance limit rule may not apply, and fresh data is usually required regardless of when the last survey was conducted.
- ♦ **Regulatory Discretion:** MECC holds the ultimate discretion to approve or reject the reuse of older data based on a case-by-case review.



#### 4.1.2 Geographic Thresholds by Data type

Based on typical EIA scoping in the GCC, the following radii are commonly applied to define the study area, within which data can be reused:

| Component                                                                                                                                                                                        | Typical Radius for Baseline                                                                         |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|
| <b>Air Quality</b><br><br><i>Reused data must include pollutants like PM10, PM2.5, SO2, Nox, and CO, and should reflect both baseline conditions and seasonal variation (summer and winter).</i> | 10 km radius<br><br><i>Generally required for industrial or infrastructure projects.</i>            |
| <b>Marine Water</b><br><br><i>Data must include salinity, temperature, turbidity, pH, and pollutants (TDS, Total Petroleum Hydrocarbons - TPH).</i>                                              | 2 – 5 km radius along the coast<br><br><i>Covering the “mixing zone” of any effluent discharge.</i> |
| <b>Marine Sediment</b><br><br><i>Data should assess heavy metals, Total Petroleum Hydrocarbons (TPH), and Grain Size Analysis to determine potential impacts.</i>                                | 1 – 3 km Radius<br><br><i>Depending on the dredging or discharge activity.</i>                      |
| <b>Groundwater</b><br><br>A larger radius, often dictated by the hydrological study area, which can extend over 5–10 km depending on local hydrogeology.                                         | <i>Dependent on hydrological study area</i>                                                         |

## 4.2 Temporal Thresholds

Temporal thresholds for reusing environmental baseline data vary by jurisdiction and data type but typically range from 1 year to 5 years. Beyond these periods, data is often considered outdated due to the dynamic nature of ecosystems and potential changes in site conditions.

### 4.2.1 Data Age (Temporal Relevance)

The rational data age limit for reusing environmental baseline data varies depending on the project’s environmental impact (e.g., type of data, environmental sensitivity of the area, and the pace of change) and jurisdiction.

The baseline data should be recent enough to reflect current conditions:

- ♦ Less than 5 years old for projects with minimal environmental impact
- ♦ Less than 3 years old for project with moderate environmental impact
- ♦ Less than 1 year old for projects with significant environmental impact

Data older than 5 years may be considered outdated, especially in the inland areas with rapid development or change. However, coastal and marine areas, which constantly changing and home to sensitive habitats, the validity of data age limit are ranging from 1 – 3 years.

- ♦ Technological Changes: Data on emissions or resource use from older industrial processes might not be representative of current technology and standards, which may have improved significantly over time.
- ♦ Regulatory Changes: Environmental standards and regulations evolve; data collected under outdated regulatory frameworks might not meet current assessment requirements

#### 4.2.2 Seasonal variability

The data should account for seasonal variability (winter, summer, and inter-monsoon seasons) and be representative of the project's operational phase.

#### 4.2.3 Environmental Changes

There should be no significant environmental changes (e.g., changes in land use, pollution sources etc.) between the original study and the project. It is essential to account for any significant alterations in the environment since the original data was gathered.

- ♦ **Major Disturbances:** If a major event (e.g., a natural disaster, a large new development project, significant land-use change) has occurred in the interim, older data may no longer be valid.
- ♦ **Cumulative Impacts:** The assessment should consider if the existing environment has already been impacted by other activities that were not present when the original data was collected.
- ♦ **Climate Change Context:** Modern EIAs must consider a project's vulnerability to, and impact on, changing climate conditions. Historical data needs to be interpreted considering current climate trends.



Example of Temporal Thresholds for Reusing Environmental Baseline Data

| Project Type                            | Data Age Limit | Example Projects                                                                              | Clarification                                                                                                                                                            |
|-----------------------------------------|----------------|-----------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Low-impact inland projects</b>       | Up to 5 years  | Office buildings, small-scale infrastructure, residential developments                        | Projects with minimal environmental impact, limited scope, and low risk of environmental harm.                                                                           |
| <b>Moderate-impacts inland projects</b> | Up to 3 years  | Medium-scale industrial projects, roads, bridges                                              | Projects with moderate environmental impact, potential for localized environmental effects, and moderate risk of environmental harm.                                     |
| <b>High-impact inland projects</b>      | Up to 1 year   | Large-scale industrial projects, major infrastructure, power plants, mining operations        | Projects with significant environmental impact, high risk of environmental harm, and potential for long-term or irreversible environmental effects.                      |
| <b>Low-impact coastal projects</b>      | Up to 3 years  | Small-scale coastal development, beachfront walkways, minor coastal reclamation               | Projects with minimal environmental impact, limited scope, and low risk of environmental harm to coastal resources.                                                      |
| <b>Moderate-impact coastal projects</b> | Up to 2 years  | Medium-scale developments, coastal roads, moderate-scale coastal reclamation                  | Projects with moderate environmental impact, potential for localized environmental effects on coastal resources, and moderate risk of environmental harm.                |
| <b>High-impact coastal projects</b>     | Up to 1 year   | Large-scale coastal developments, major coastal reclamation, coastal industrial projects      | Projects with significant environmental impact on coastal resources, high risk of environmental harm, and potential for long-term or irreversible environmental effects. |
| <b>Marine projects</b>                  | Up to 1 year   | Offshore oil and gas exploration, marine pipelines, marine renewable energy projects          | Projects with potential impacts on marine ecosystems, requiring current data to ensure effective mitigation measures.                                                    |
| <b>Sensitive marine ecosystems</b>      | Up to 1 year   | Projects in or near coral reefs, marine protected areas, or other sensitive marine ecosystems | Projects that may affect sensitive marine ecosystems or biodiversity, requiring up-to-date data to ensure effective conservation measures.                               |
| <b>Coastal erosion management</b>       | Up to 1 year   | Projects involving coastal erosion mitigation, shoreline stabilization, beach nourishment     | Projects that may impact coastal processes, requiring current data to ensure effective erosion management.                                                               |

#### Exceptions and Consideration:

If the project is located near to sensitive areas, and / or the data affected by technological, regulatory, and significant environmental changes, the above age limit rule may not apply, and fresh data is usually required regardless of when the last survey was conducted. MECC holds the ultimate discretion to approve or reject the reuse of older data based on a case-by-case review.

#### Action Plan for Reusing Environmental Baseline Data (Project Proponent/Consultant)

##### Timeline

#### Implementation Step

##### Task 1: Project Initiation

1. Define project scope and objectives
2. Identify relevant stakeholders and team members
3. Establish project timeline and milestones

##### Task 2: Data Collection and Review

1. Gather existing environmental baseline data and reports
2. Review data quality, relevance, and completeness
3. Evaluate data against geographic and temporal thresholds
4. Identify gaps and limitations in existing data

##### Task 3: Data Evaluation and Validation

1. Evaluate data against criteria for reusing environmental baseline data
2. Validate data through ground truthing, stakeholder consultations, or additional data collection
3. Document data evaluation and validation process

##### Task 4: Data Analysis and Interpretation

1. Analyze data to identify trends, patterns, and insights
2. Interpret data in the context of the project objectives
3. Identify potential environmental impacts and mitigation measures

##### Task 5: Reporting and Decision-Making

1. Prepare report on data evaluation, analysis, and interpretation
2. Present findings and recommendations to stakeholders
3. Make decision on reusing environmental baseline data

##### Task 6: Implementation and Monitoring

1. Implement agreed-upon mitigation measures
2. Monitor environmental impacts and adjust mitigation measures as needed
3. Document lessons learned and best practices