

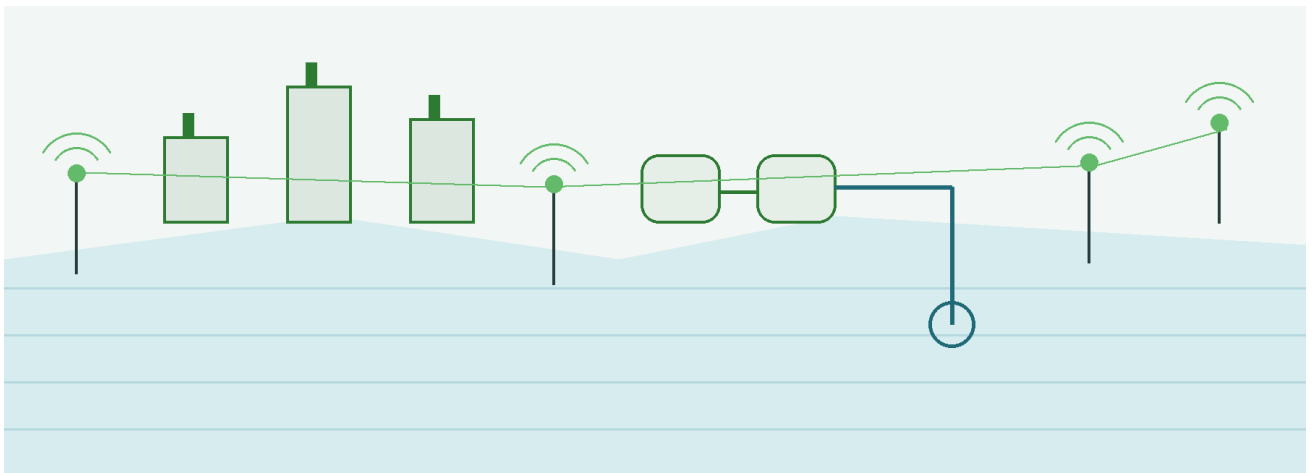
# Environmental Readiness and Emergency Management



شركة البعد البيئي  
Environmental Dimension

## Evidence-Based Preparedness, Response & Recovery

An integrated program for resource protection, operational continuity and verified recovery.



## Environmental Dimension

Albuad Environmental Consulting

Water and desalination | Industry and ports | Municipal services  
Critical infrastructure | Coastal environments

**Project-specific scope. Defined decision authority. Auditable results.**

www.albuad.sa | October 2026

## Executive Summary

Environmental Dimension provides environmental consulting across assessment, management planning, monitoring, marine environments, biodiversity and resource management. This program connects those disciplines to the operational decisions that protect essential services and sensitive environments.

We design readiness programs around site evidence, defined responsibilities and measurable acceptance criteria. The client receives a common system for warning, investigation, confirmation, decision, response and recovery, supported by an auditable record of evidence and actions.

The program serves as a working reference for the project because each risk is linked to a monitoring requirement, each decision to an authorized owner, and each readiness claim to a test. Specialist analysis and field response are secured within the agreed delivery structure before activation.

### Operational value

Clients can identify evidence gaps, test fallback arrangements, verify response resources and assess whether restart conditions have been met. Performance targets are agreed after the baseline assessment; they are not presented as achieved company results.

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## Company Role and Delivery Scope

We structure the program, define evidence requirements, coordinate technical inputs and evaluate readiness. Our role connects environmental assessment and monitoring with operational procedures, specialist studies, spatial information and exercise findings.

| Delivery responsibility | Program activity                                 | Acceptance evidence                         |
|-------------------------|--------------------------------------------------|---------------------------------------------|
| Consulting design       | Define risks, monitoring and decision rules.     | Agreed scope and approved procedures.       |
| Technical integration   | Connect measurements, models and interpretation. | Reviewed assumptions and technical records. |
| Evidence management     | Link data, versions, decisions and actions.      | Traceable records and controlled releases.  |
| Readiness evaluation    | Plan tests, assess gaps and verify closure.      | Exercise reports and retest results.        |

### Specialist delivery interfaces

Laboratory analysis, radiological measurements, specialist modeling and physical response require personnel and providers qualified for their assigned tasks. The delivery plan records their scope, authorizations, methods, availability and reporting arrangements. Equipment ownership, standing partnerships and continuous response coverage are confirmed only where documented.

### Client and operational responsibilities

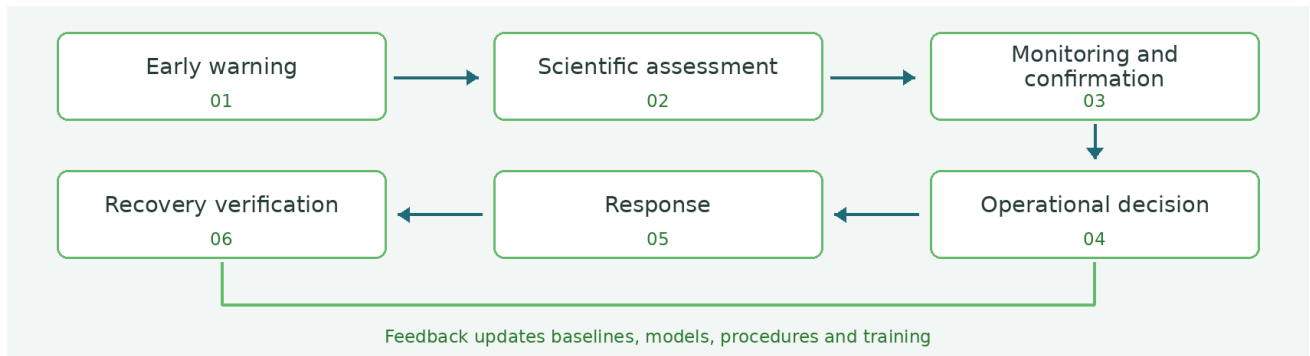
The client provides site access, process information, operational constraints and authorized decision owners. Isolation, shutdown, diversion and restart remain subject to the facility delegation and the competent authority where applicable. The consultant provides technical recommendations and verification evidence within the agreed mandate.

### Mobilization conditions

Approve the scope, roles, specialist arrangements, data plan, safety controls and acceptance criteria before program activation. Resolve critical gaps or authorize an appropriate restriction on the affected task.

## Methodological Framework

The method starts with a source-pathway-receptor assessment and site baseline. It defines the question to be answered, the evidence needed, the decision rule and the verification method. Monitoring continues throughout the event and changes as the evidence develops.



| Stage                       | Required output                                                   |
|-----------------------------|-------------------------------------------------------------------|
| Early warning               | Time-stamped alert, instrument status and initial classification. |
| Scientific assessment       | Source-specific hypotheses, investigation scope and uncertainty.  |
| Monitoring and confirmation | Accepted or qualified observations with quality status.           |
| Operational decision        | Authorized action with evidence, rationale and review trigger.    |
| Response                    | Safe implementation record and observed effectiveness.            |
| Recovery verification       | Restart assessment, residual-risk review and follow-up plan.      |

### Evidence and change control

Classify information as measured site data, a conditional model output, an unverified hypothesis or a controlled exercise input. Record gaps and assumptions. Update the baseline, model or procedure after review and apply the relevant change-control test before operational use.

## 05 / EIGHT SPECIALISMS WITHIN ONE PROGRAM

### Scope of Services

Scope is selected by site risk and exposure pathway. The baseline review identifies priority receptors and the studies required. Operational testing then verifies that the selected technical services, systems and teams work together.



| Specialized service                                 | Operational decision supported                            |
|-----------------------------------------------------|-----------------------------------------------------------|
| 01 Water Security and Desalination Protection       | Intake isolation, diversion and restart.                  |
| 02 Transboundary Air Quality Monitoring             | Anomaly confirmation, interpretation and escalation.      |
| 03 Marine Oil Spill Risk Management                 | Coastal protection priorities and resource deployment.    |
| 04 Nuclear and Radiological Risk Assessment         | Source-specific analysis and authorized recommendations.  |
| 05 Emergency Environmental Response and EIA Addenda | Investigation boundaries and corrective measures.         |
| 06 Marine Ecosystem Protection                      | Restoration priorities and recovery verification.         |
| 07 Emergency Sustainability and Continuity Planning | Critical resources, alternatives and service restoration. |
| 08 Operational Readiness and Periodic Testing       | Demonstrated execution of procedures and decisions.       |

### Scope boundaries

Each work package defines inputs, methods, outputs, responsible parties and acceptance criteria. Specialist fieldwork, analysis, equipment deployment and physical response are included only where explicitly assigned and resourced. Mandatory approvals and permit decisions remain with the competent authority.

## Water Security and Desalination Protection

Protect the intake and treatment chain by linking contaminant evidence to approved isolation, diversion and restart decisions.

**Required inputs** Intake location and depth; currents, tides and wind; baseline water quality; process flows; membrane and filter specifications; chemical inventories; operating history.

**Method and supporting studies** Assess source-pathway-receptor linkages. Model time to intake under defined local conditions and release assumptions. Evaluate contaminant concentration, exposure duration and treatment sensitivity. Design independent monitoring and confirmatory sampling, then test available storage, diversion and isolation arrangements.

**Deliverables** Risk register; conditional arrival windows; treatment sensitivity assessment; monitoring plan; operating decision matrix; restart verification protocol.

### Decision controls

A hydrocarbon sensor does not measure radionuclides. A single reading may trigger an approved precautionary action, but cannot establish the full contaminant type or extent. Confirm instrument health and obtain independent evidence.

| Performance indicator   | Measurement definition                                                      |
|-------------------------|-----------------------------------------------------------------------------|
| Detection time          | Alert time minus a known, documented reference event or exercise injection. |
| Isolation decision time | Authorized isolation decision minus acknowledged alert.                     |
| Confirmatory completion | Completed confirmatory analyses / samples assigned for confirmation x 100%. |

**Authority and acceptance** Operations owns the operating action under the facility delegation. Accept the service after technical review and a safe procedure test. Actual isolation completion is recorded separately from decision time.

## Transboundary Air Quality Monitoring

Detect abnormal air-quality conditions and assess possible regional transport without unsupported source attribution.

**Required inputs** Local baseline; emission inventory; operating activity; meteorology; receptor locations; terrain; instrument performance and time synchronization.

**Method and supporting studies** Design coastal and inland monitoring according to the decision objective. Measure PM<sub>2.5</sub>, sulfur dioxide (SO<sub>2</sub>) and selected volatile organic compounds (VOCs). Use appropriate methods for polycyclic aromatic hydrocarbons (PAHs) and benzene, toluene, ethylbenzene and xylenes (BTEX). Assess dispersion, trajectories and chemical signatures alongside local activity.

**Deliverables** Network design; quality plan; anomaly register; interpretation reports with confidence and limitations; notification and escalation procedures.

### Decision controls

A concentration increase or air trajectory does not prove origin. Low-cost sensor data require documented performance checks, reference comparison and assessment of humidity, interference and drift. Validate corrections before decision use.

| Performance indicator   | Measurement definition                                                           |
|-------------------------|----------------------------------------------------------------------------------|
| Valid data availability | Accepted records / expected records within the agreed monitoring window x 100%.  |
| Anomaly reporting time  | Notification dispatch minus confirmation of the anomaly under the approved rule. |

**Authority and acceptance** The monitoring lead validates data; the delegated decision owner authorizes operational measures. Accept the network after performance evaluation and reporting tests. Restricted-use data retain their quality flags.

## Marine Oil Spill Risk Management

Assess credible releases, identify exposed coastal resources and prepare feasible protection and deployment plans.

**Required inputs** Material type and properties; potential release volume, rate and duration; local currents, wind and waves; shoreline and habitat data; access and equipment availability.

**Method and supporting studies** Define release scenarios from the source assessment. Model transport and weathering across plausible local conditions, with sensitivity and uncertainty analysis. Rank shoreline sensitivity and exposure. Compare containment, recovery and receptor-protection options by feasibility and environmental consequences.

**Deliverables** Scenario register; conditional arrival windows; coastal sensitivity atlas; protection priorities; deployment and logistics plan; field update protocol.

### Decision controls

Total cargo is not an assumed spill volume. Modelled arrival windows depend on release and environmental inputs. Revise predictions using local observations. Deployment must account for sea conditions, safe access and secondary impacts.

| Performance indicator      | Measurement definition                                                                  |
|----------------------------|-----------------------------------------------------------------------------------------|
| Detection time             | Acknowledged alert minus a documented reference event, where known.                     |
| Protection deployment time | Equipment ready at the designated location minus mobilization order.                    |
| Priority site coverage     | Priority sites meeting agreed protection requirements / targeted priority sites x 100%. |

**Authority and acceptance** The incident lead authorizes deployment within the response structure. Accept the plan after resource, access and deployment tests. Coverage measures agreed priority sites, not the entire coastline.

## Nuclear and Radiological Risk Assessment

Assess defined radiological sources and exposure pathways, then provide recommendations through the authorized technical and operational interface.

**Required inputs** Source type; radionuclide inventory and activity where verified; material form; release mechanism; local background; meteorology; marine conditions; water and food pathways.

**Method and supporting studies** Distinguish enrichment processes from reactor sources before setting the source term. Assess air, marine, water and food pathways. Specify suitable radionuclide analysis and sampling. Evaluate dose using documented exposure assumptions. Assess behavior through desalination processes and potential concentration in residual streams.

**Deliverables** Source-specific scenarios; sampling and analysis plan; pathway assessment; uncertainty register; technical recommendations and verification requirements.

### Decision controls

Reactor fission products cannot be assigned automatically to an enrichment source. Terrain alone does not determine transport. Measured activity is not a dose estimate; exposure modeling is required. Qualified specialists and authorized providers undertake regulated tasks.

| Performance indicator | Measurement definition                                                                |
|-----------------------|---------------------------------------------------------------------------------------|
| Laboratory turnaround | Approved analytical result minus receipt of an acceptable sample.                     |
| Recommendation time   | Issued recommendation minus documented availability of sufficient qualified evidence. |

**Authority and acceptance** Confirm specialist competence and authorizations before mobilization. Decisions on protective actions follow the competent authority and facility delegation. Model results remain conditional on the defined source and exposure assumptions.

## Emergency Environmental Response and EIA Addenda

Determine the environmental questions that require immediate resolution, investigate potential impacts and update the Environmental Management Plan (EMP).

**Required inputs** Event description; material inventories; process and site records; geology and hydrogeology; previous surveys; access permissions; safety conditions.

**Method and supporting studies** Develop a conceptual site model. Design targeted and reference sampling for the identified pathways. Investigate soil, groundwater, surface water or air where justified. Review accepted results, refine boundaries and specify corrective actions. Assess whether an Environmental Impact Assessment (EIA) addendum or other submission is required.

**Deliverables** Initial findings with knowledge limits; investigation plan; impact assessment; EMP update; corrective-action register and verification plan.

### Decision controls

Proximity to a fire does not establish soil contamination. Select analytes from the material inventory and pathway assessment. Interpret accepted samples against relevant baseline and agreed criteria. Distinguish screening findings from confirmed extent.

| Performance indicator  | Measurement definition                                                      |
|------------------------|-----------------------------------------------------------------------------|
| Site attendance time   | Verified site arrival minus formal activation; access constraints recorded. |
| Initial reporting time | Initial report release minus the agreed start of assessment.                |

**Authority and acceptance** The investigation lead reviews evidence and uncertainty. Accept the output after technical review and traceability checks. Any addendum follows the applicable submission route and does not guarantee acceptance.

## Marine Ecosystem Protection

Assess sensitive habitats present within the defined area and establish measurable protection, restoration and recovery objectives.

**Required inputs** Habitat maps; historical and seasonal surveys; water and sediment quality; documented imagery; pressure history; survey permissions and safe field access.

**Method and supporting studies** Create a repeatable survey and baseline. Assess coral, seagrass and mangrove habitats where present. Use suitable before-after and reference comparisons where feasible. Measure cover, condition, survival or other habitat-specific indicators. Separate seasonal variation and existing pressures from event-related change.

**Deliverables** Habitat atlas; condition and damage assessment; restoration options; habitat-specific recovery criteria; repeat-survey plan and progress reports.

### Decision controls

Reference sites must be assessed for comparability and possible exposure. Survey coverage is not recovery. Avoid attributing seasonal change to an event without supporting evidence. Restoration actions require site-specific feasibility and authorization.

| Performance indicator       | Measurement definition                                                                                                |
|-----------------------------|-----------------------------------------------------------------------------------------------------------------------|
| Habitat assessment coverage | Assessed target habitat area / planned target habitat area x 100%.                                                    |
| Annual recovery change      | Change in the specified condition, cover or survival measure, assessed with the agreed reference and seasonal design. |

**Authority and acceptance** The marine ecology lead reviews survey design and findings. Accept the service after confirming repeatability and habitat-specific success criteria. Report habitats separately; do not aggregate recovery into an undefined single percentage.

## Emergency Sustainability and Continuity Planning

Assess environmental dependencies that can interrupt essential services and define practical resource and restoration arrangements.

**Required inputs** Critical services; storage capacity; water and energy demand; chemicals; laboratories; communications; suppliers; alternative capacity and operating limits.

**Method and supporting studies** Assess disruption consequences and dependencies. Establish prioritized recovery time objectives. Verify reserve resources, alternative supply and technical compatibility. Test activation and delivery arrangements. Assess whether temporary operating modes introduce additional emissions, discharges or waste controls.

**Deliverables** Critical-resource register; continuity plan; alternative activation procedures; restoration priorities and target times; test reports and improvement actions.

### Decision controls

An identified supplier is not a verified alternative. Confirm availability, capacity, transport time and compatibility. Restoration targets depend on service criticality and the resources confirmed for the project.

| Performance indicator       | Measurement definition                                                                                     |
|-----------------------------|------------------------------------------------------------------------------------------------------------|
| Continuity plan readiness   | Approved and tested plans / plans required within scope x 100%.                                            |
| Critical-resource assurance | Critical resource items with verified availability and fallback / required critical resource items x 100%. |

**Authority and acceptance** The continuity owner approves priorities and resources with operations. Accept the plan after dependency and fallback tests. Record restrictions where an alternative remains unavailable or untested.

## Operational Readiness and Periodic Testing

Test whether systems and teams can execute the approved decision under time pressure, partial data and equipment failure. Exercise objectives, safety controls, evidence requirements and acceptance criteria are agreed before the test.

**Required inputs** Facility procedures, equipment and team registers, alert rules, decision delegations, operating constraints and existing performance data.

| Test format       | Capability assessed                         | Required evidence                           |
|-------------------|---------------------------------------------|---------------------------------------------|
| Tabletop exercise | Roles, rules and escalation.                | Recorded decisions and rationale.           |
| Functional test   | Alerting, communications and data transfer. | Dispatch, receipt and fallback logs.        |
| Field exercise    | Mobilization and safe equipment use.        | Observed performance and execution record.  |
| Failure test      | Sensor, communication or laboratory delay.  | Fallback completion within agreed criteria. |
| Retest            | Effectiveness of a corrective measure.      | Successful repeat of the failed task.       |

**Deliverables** Exercise plan, event timeline, observer records, readiness report and corrective-action register with priority, owner, due date and closure evidence.

| Performance indicator   | Measurement definition                                                    |
|-------------------------|---------------------------------------------------------------------------|
| Exercise completion     | Completed exercises / exercises due in the approved plan x 100%.          |
| Verified action closure | Actions closed with verification / actions due by the review date x 100%. |
| Retest pass rate        | Passed retests / retests completed in the review period x 100%.           |

Accept the test report after objective assessment and evidence review. Critical gaps restrict the affected capability until closure and retest. Simulated signals remain separated from live process controls; exercises do not release contaminants.

## 14 / CONTROLLED SITE SCENARIO

# Operational Exercise Protocol

Use a simulated abnormal intake signal, one unavailable supporting sensor and delayed confirmatory analysis. This is a training scenario, not a reported incident. Its purpose is to test the approved precautionary decision and the fallback monitoring arrangement.

| Exercise input                | Expected action                                              | Evidence retained                                |
|-------------------------------|--------------------------------------------------------------|--------------------------------------------------|
| Simulated intake alert        | Acknowledge, check timestamp and instrument status.          | Receipt time, recipient and status check.        |
| Supporting sensor unavailable | Activate independent measurement and sampling route.         | Fault record, fallback log and chain of custody. |
| Partial or conflicting data   | Record confidence and apply the approved precautionary rule. | Data assessment and recommendation.              |
| Decision target of 10 minutes | Escalate and authorize the defined exercise action.          | Authority, decision time and rationale.          |
| Confirmatory result supplied  | Review the action and assess restart conditions.             | Qualified result and decision revision.          |

### Pass criteria

Identify the fault, complete the fallback steps, preserve evidence and make the authorized exercise decision within the agreed target. An unauthorized instruction, safety breach, missing fallback or lost decision record is a failure against the relevant objective.

### Assessment and corrective action

Observers compare the event timeline with the approved protocol. Each gap receives a cause assessment, owner, priority, deadline and retest requirement. Ten minutes is a scenario-specific training target, not a universal requirement or response commitment.

**A live operating change requires separate authorization and safety controls. The exercise director can stop the test at any time under the agreed stop criteria.**

## Scientific QA and QC Framework

Quality assurance (QA) defines the plan, review and release controls. Quality control (QC) checks measurement and analytical performance. The quality plan specifies decision-use requirements before collection and gives each result an accepted, rejected or restricted-use status.

| Control stage         | Required checks                                                                             | Evidence                                   |
|-----------------------|---------------------------------------------------------------------------------------------|--------------------------------------------|
| Study design          | Spatial and temporal coverage, precision, representativeness and suitable detection limits. | Data-quality objectives and sampling plan. |
| Field measurement     | Traceable calibration, zero/span or functional checks, maintenance and synchronized clocks. | Calibration records and original logs.     |
| Sampling and transfer | Suitable blanks and duplicates; preservation, transport and holding-time controls.          | Field records and chain of custody.        |
| Laboratory analysis   | Appropriate methods, detection/quantification limits, batch controls and uncertainty.       | Analytical report and QC review.           |
| Data validation       | Review completeness, flags, corrections, exclusions and decision suitability.               | Result status and review rationale.        |
| Scientific release    | Independent review appropriate to the discipline; version and approval control.             | Comments, resolution and signed release.   |

### Uncertainty and nonconformance

Record uncertainty from sampling, measurement and interpretation. Preserve raw data. Values below detection or quantification limits retain their qualifiers and are not automatically treated as zero. Nonconforming data trigger investigation, restriction, resampling or another approved corrective measure.

The measurement team performs QC. The quality reviewer verifies compliance and evidence adequacy. GIS links locations to the evidence repository and laboratory records; it does not replace those systems.

## Operational Validation Framework

Readiness is accepted only for the functions and conditions tested. Define each test, acceptance criterion, owner and evidence before execution. Record failure, corrective action and retest before expanding the validated operating scope.

| Validation test                                                                              | Acceptance evidence                                                      | Owner and failure action                                                  |
|----------------------------------------------------------------------------------------------|--------------------------------------------------------------------------|---------------------------------------------------------------------------|
| Model fitness<br>Check intended use, sensitivity and independent comparison where available. | Versioned inputs, documented limits, comparison results and uncertainty. | Model lead and reviewer; improve inputs or restrict use.                  |
| Operational feasibility<br>Demonstrate the procedure and available resources.                | Safe completion within agreed authority, resource and timing limits.     | Operations and exercise lead; revise or resource the procedure.           |
| System responsiveness<br>Inject an alert and test loss of a component.                       | Time-stamped receipt, escalation and successful fallback.                | System owner; repair and retest.                                          |
| Decision quality<br>Assess a case with incomplete or conflicting evidence.                   | Correct rule, authorized owner, rationale and review trigger.            | Incident lead and technical reviewer; correct rules or training.          |
| Action effectiveness<br>Measure the result of the agreed action.                             | Objective met and secondary effects assessed.                            | Operations and environmental lead; revise action and continue monitoring. |

### Model-use restrictions

Calibration fit alone does not demonstrate validity across all scenarios. If independent validation data are unavailable, label outputs as conditional assessments and define their permitted decision use. Prediction must remain distinguishable from observed impact.

### Readiness release

Issue a capability-specific status, evidence index and restrictions. A program-wide statement cannot substitute for the tests of the individual systems, teams and procedures within scope.

## Governance and Decision Authority

Approve decision delegations and escalation routes before activation. The facility and competent authority determine who can isolate, suspend, divert or restart operations. The consultant documents technical recommendations within the agreed mandate.

| Role                       | Responsibility                                         | Authority boundary                        |
|----------------------------|--------------------------------------------------------|-------------------------------------------|
| Facility owner             | Approve scope, resources and delegations.              | Subject to applicable obligations.        |
| Incident lead              | Coordinate, escalate and authorize delegated actions.  | Within the incident delegation.           |
| Operations                 | Execute approved actions and check process safety.     | Within operational procedures.            |
| Environmental consultant   | Assess evidence, recommend and verify.                 | No assumed shutdown or restart authority. |
| Laboratory and specialists | Analyze, model and report quality and limitations.     | Within qualified and authorized scope.    |
| Response contractor        | Perform assigned field actions and document execution. | Within licence and incident instructions. |
| Competent authority        | Provide oversight and required decisions.              | As defined by jurisdiction and activity.  |

### Escalation and conflicting evidence

Check timing, instrument health, representativeness and interference without deleting conflicting observations. Record confidence, the precautionary rule used, the decision owner and the next review trigger. Safety-critical escalation does not wait for a complete data set where an approved precautionary rule applies.

### Change control

Review changes to processes, source inventories, monitoring, models, people and procedures. Assess consequences, approve the new version and complete the necessary operational test before release.

## Accreditation and Institutional Readiness

Institutional readiness requires competent personnel, suitable systems and available resources. The readiness register distinguishes internal technical approval, client operational authorization and external licensing or accreditation where required.

| Readiness component | Verification                                            | Required record                                 |
|---------------------|---------------------------------------------------------|-------------------------------------------------|
| Technical team      | Discipline competence and review capability.            | Qualifications and task assessment.             |
| Response team       | Safety competence, assigned roles and backup personnel. | Training and observed exercise performance.     |
| Specialist analysis | Method suitability and relevant accreditation scope.    | Current scope, method and service arrangements. |
| Measurement systems | Calibration, maintenance, suitability and redundancy.   | Certificates and functional tests.              |
| Data and GIS        | Access control, traceability and recovery.              | Access and backup-restoration tests.            |
| Early warning       | Trigger logic, communications and fallback.             | Alert receipt and escalation test.              |

### Readiness status

Ready within scope: required evidence is complete and tests pass. Ready with conditions: limitations and approved alternatives are explicit. Not ready: a critical gap prevents the affected task until closure and verification. State the status in text and identify its validity period and review trigger.

### International practice and local applicability

Use documented quality management, traceable measurement, validated methods, role-based incident management and independent review. Confirm project alignment through a requirements register. Internal approval does not confer external accreditation, and no organizational certification is implied by this profile.

## Data Integration and GIS

The geographic information system (GIS) links sources, pathways, receptors and sampling locations. Evidence and laboratory systems retain the underlying records. An event identifier links samples, models, alerts, decisions, actions and recovery results.

| Evidence layer         | Minimum record                                             | Linked output                                  |
|------------------------|------------------------------------------------------------|------------------------------------------------|
| Source and receptor    | Identifier, location, date, description and confidence.    | Pathway and monitoring point.                  |
| Measurement and sample | Timestamp, unit, method, device, custody and QC status.    | Qualified result and analytical record.        |
| Model                  | Version, input provenance, assumptions and fitness limits. | Conditional prediction and arrival window.     |
| Alert and decision     | Evidence, rule, time, authority and rationale.             | Instruction and implementation record.         |
| Response and recovery  | Executor, timing, result and acceptance criterion.         | Verification, closure or continued monitoring. |

### Integration controls

Standardize units, coordinate reference, timestamps and time zone. Preserve original files and transformation records. Keep approved versions immutable. Record any manual intervention and test the recovery of the complete event record after loss of connectivity.

### Decision record requirements

A reviewer must be able to trace a decision to the data available at that time, the applicable rule and the authorized person. A completed action must link to its execution evidence and the measurement used to verify its result.

GIS products are decision-support tools. Confidential locations and infrastructure details receive access restrictions appropriate to their sensitivity.

## Performance Measurement and Reporting

Set targets after the baseline assessment and before testing. Indicators describe program performance within an agreed scope and period. No target in this profile represents achieved company performance.

| Service and indicators                                           | Primary record and owner                                            | Review cycle                  |
|------------------------------------------------------------------|---------------------------------------------------------------------|-------------------------------|
| Water: detection, isolation decision, confirmatory completion.   | Instrument, decision and sample logs; operations and analysis lead. | Each event; scheduled review. |
| Air: valid data availability, anomaly reporting time.            | Validated data and alert log; monitoring lead.                      | Daily and each anomaly.       |
| Oil spill: detection, deployment, priority site coverage.        | Alert, mobilization and protection records; response lead.          | Each event or exercise.       |
| Radiological: analysis turnaround, recommendation time.          | Sample receipt, release and recommendation logs; specialist lead.   | Each analytical batch.        |
| Investigation: attendance and initial reporting time.            | Activation, site arrival and report log; assignment lead.           | Each activation.              |
| Marine habitats: assessment coverage and annual recovery change. | GIS areas and repeat surveys; marine ecology lead.                  | Survey cycle and annually.    |
| Continuity: tested plan readiness and resource assurance.        | Plan, resource and fallback tests; continuity owner.                | Agreed review interval.       |
| Testing: completion, verified closure and retest pass rate.      | Exercise plan, actions and retest record; readiness lead.           | Each exercise and quarterly.  |

### Calculation and exception controls

Service pages define each numerator, denominator or time boundary. Record missing start times, access restrictions and incomplete analyses. Retain late or failed cases in the audit record. Separate valid-data availability from collection completeness, and decision time from physical action completion.

Report the target, observed result, exception, trend and corrective action. Faster response is acceptable only when safety, authority and evidence-quality requirements are met.

## 21 / FIVE PHASES WITH DEFINED RELEASE CONDITIONS

# Implementation and Acceptance Gates

The delivery schedule depends on site scale, data quality, required specialisms and resource availability. Agree phase outputs and acceptance criteria before mobilization. Independent activities may proceed in parallel under the approved delivery plan.

| Phase                            | Core work                                                | Acceptance gate                                        |
|----------------------------------|----------------------------------------------------------|--------------------------------------------------------|
| 01 Baseline and gaps             | Review site data, risk pathways, systems and readiness.  | Agreed risk scope and declared data limitations.       |
| 02 Program design                | Define monitoring, models, decision rules and roles.     | Technical review and client approval.                  |
| 03 Integration and qualification | Connect systems, secure specialists and train teams.     | Integration tests and competence evidence.             |
| 04 Testing and validation        | Run exercises, failure tests and corrective retests.     | Measured results and documented restrictions.          |
| 05 Operation and improvement     | Review performance, update procedures and manage change. | Verified action closure and periodic readiness review. |

## Project initiation

Confirm boundaries, critical services, receptors, decision points, data ownership and specialist interfaces. Agree a deliverables register and a site evidence plan. Assign each unresolved input to an owner and distinguish measured information from assumptions.

## Review triggers

Reassess the program after an operating change, equipment or team change, exercise, actual site event or applicable requirement update. Refresh the baseline and repeat the tests affected by the change before extending readiness status.

## Program handover

Transfer approved procedures, records, test evidence and restrictions to the client. Demonstrate user access, data recovery and the process for maintaining the readiness register.

## Deliverables and Recovery Verification

| Deliverable and user                                                    | Acceptance requirement                                         | Update trigger                 |
|-------------------------------------------------------------------------|----------------------------------------------------------------|--------------------------------|
| Source-pathway-receptor register<br>Environmental team and operations.  | Risks linked to source evidence, location and receptors.       | Process or site change.        |
| Monitoring plan and decision rules<br>Monitoring and decision owners.   | Methods, quality rules, authority and action logic defined.    | Test, event or change.         |
| Sensitivity and habitat atlas<br>Response and ecology teams.            | Spatial reference, dates, provenance and confidence recorded.  | New survey or receptor change. |
| Specialist studies and models<br>Technical reviewer and decision owner. | Controlled inputs, assumptions, fitness and review record.     | Relevant input change.         |
| Response and recovery package<br>Incident lead and operations.          | Resources, actions, verification and restart criteria defined. | Event or exercise.             |
| GIS and evidence record<br>Authorized users.                            | Traceability, permissions and restoration test demonstrated.   | Continuous controlled update.  |
| Readiness report and action register<br>Facility management.            | Measured outcomes, owners, deadlines and retests recorded.     | Each exercise or review.       |
| Restart verification file<br>Authorized owner and competent authority.  | Qualified results, residual risk, approval and follow-up.      | Each restart assessment.       |

### Recovery acceptance

Verify source control, assess environmental and service quality, review residual effects, and obtain the required restart authorization. Continue monitoring after restart. Habitat recovery may require longer observation than service restoration. Keep unmet criteria open with an owner, review date and follow-up action.

## Data and Transparency Policy

Project data are used for the authorized scientific and operational purpose. Access is assigned by role and sensitivity. Confidential information is disclosed only within the agreed delivery arrangements, with client permission or where a lawful requirement applies.

| Policy control         | Implementation requirement                                   | Verification record                     |
|------------------------|--------------------------------------------------------------|-----------------------------------------|
| Purpose and access     | Record authorized use, users and specialist access.          | Data inventory and access register.     |
| Transfer and storage   | Apply protection suited to sensitivity and approved systems. | Transfer and system access logs.        |
| Integrity and versions | Preserve originals, history and change rationale.            | Version register and review trail.      |
| Backup and recovery    | Define backup frequency and test restoration.                | Recovery test and issue log.            |
| Retention and disposal | Agree retention, legal holds and secure disposal.            | Retention schedule and disposal record. |
| External disclosure    | Review sensitivity and obtain approval before release.       | Disclosure review and authorization.    |

### Transparent technical reporting

Reports state data provenance, coverage, quality status, model assumptions, uncertainty and unresolved gaps. Separate measured observations from predictions and exercise inputs. Explain changes to conclusions and preserve the evidence available when the original decision was made.

### Non-sensitive summaries

Prepare summaries only after removing confidential infrastructure, location and personal details. Client review remains required before publication. Protecting confidentiality does not justify suppressing limitations or presenting an unverified finding as established evidence.

### Data-quality or access incidents

Report suspected integrity or access failures through the agreed escalation route. Preserve affected records, assess decision impacts and document recovery and corrective action.

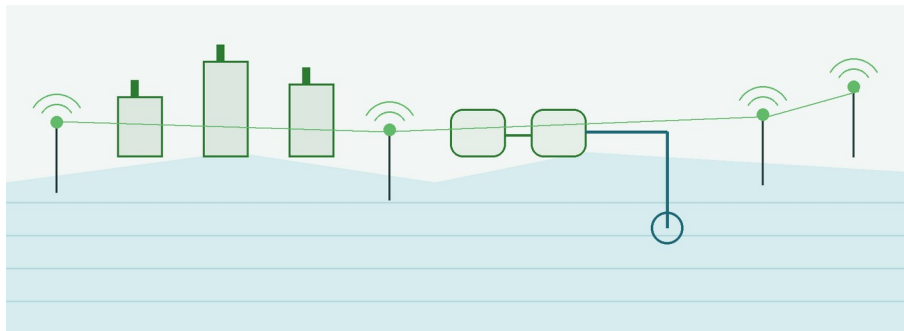
## Engage Environmental Dimension



شركة البعد البيئي  
Environmental Dimension

**Environmental readiness is demonstrated by functioning systems, competent teams, authorized decisions and verified results.**

We develop a program that specifies the evidence required, the decision owner, the response action and the conditions for recovery. The result is a practical operating reference that can be reviewed, tested and maintained by the client.



### Start with a defined scope

Share the facility activity, critical services, existing plans, available monitoring data and priority concerns. The initial assessment establishes evidence gaps and the appropriate service packages. Agree resources, specialist interfaces, delivery milestones and acceptance criteria before activation.

### Contact

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