ADB

OFFICE OF SAFEGUARDS

ESS3
Resource Conservation and Pollution Prevention

ENVIRONMENTAL
AND SOCIAL
FRAMEWORK

Resource Conservation and Pollution Prevention

New Standard and Improved Requirements

ESS 3 aims to PREVENT pollution, PRESERVE finite resources, and PROTECT ecosystems by applying the precautionary approach, polluter pays principle, and circular economy strategies while prioritizing mitigation at the source.

Resource Conservation and Pollution Prevention

New Standard and Improved Requirements

OBJECTIVES

- Promote **sustainable use of resources** (energy, water, soil, sand, raw materials)
- **Prevent** pollution impacts on health and the environment; **minimize** when avoidance isn't possible.
- **Prevent** emissions and discharges; **minimize** pollution to air, water, and soil when unavoidable.
- **Prevent** waste generation; **minimize** and **manage** hazardous and non-hazardous waste properly.
- **Prevent, minimize,** and **manage** risks from hazardous chemicals in use, storage, transport, and production.
- **Prevent, reduce,** and **manage** risks from pesticide use.

Key Requirements Unchanged from Previous Policy

- ## Use of More Stringent Standards

  Borrower/client must apply measures for resource conservation, efficiency, and pollution prevention that comply with applicable national requirements or internationally recognized standards, **whichever is more stringent**.

- ## Precautionary Approach

  Borrower/client must take action to prevent environmental harm when there is a credible risk, even if full scientific certainty is not yet established. The burden of proof lies with the borrower/client.

- ## Use of GIP/Alternate Standard if Justified

  If proposing **less stringent standards** than GIP, the borrower/client must provide detailed assessment and justification, demonstrating consistency with ESS3 objectives and unlikely to result in significant environmental or social harm.

- ## Use of Modelling Tools

  Borrower/client must apply appropriate reliable **modeling tools** to assess potential impacts of pollutant emissions and discharges, considering local conditions, existing ambient quality, and sensitive receptors.

- ## Requirements for Existing Facilities

  For projects involving existing facilities or previously used sites, the borrower/client must carry out a **preliminary E&S site assessment** to characterize any legacy contamination risks and implement remedial actions accordingly.

Risk-Based Approach

Risk-based Approach

Conduct detailed assessments that are **proportional to the level of environmental and social risks**, and apply **progressively stricter prevention and mitigation measures** where risks are higher.

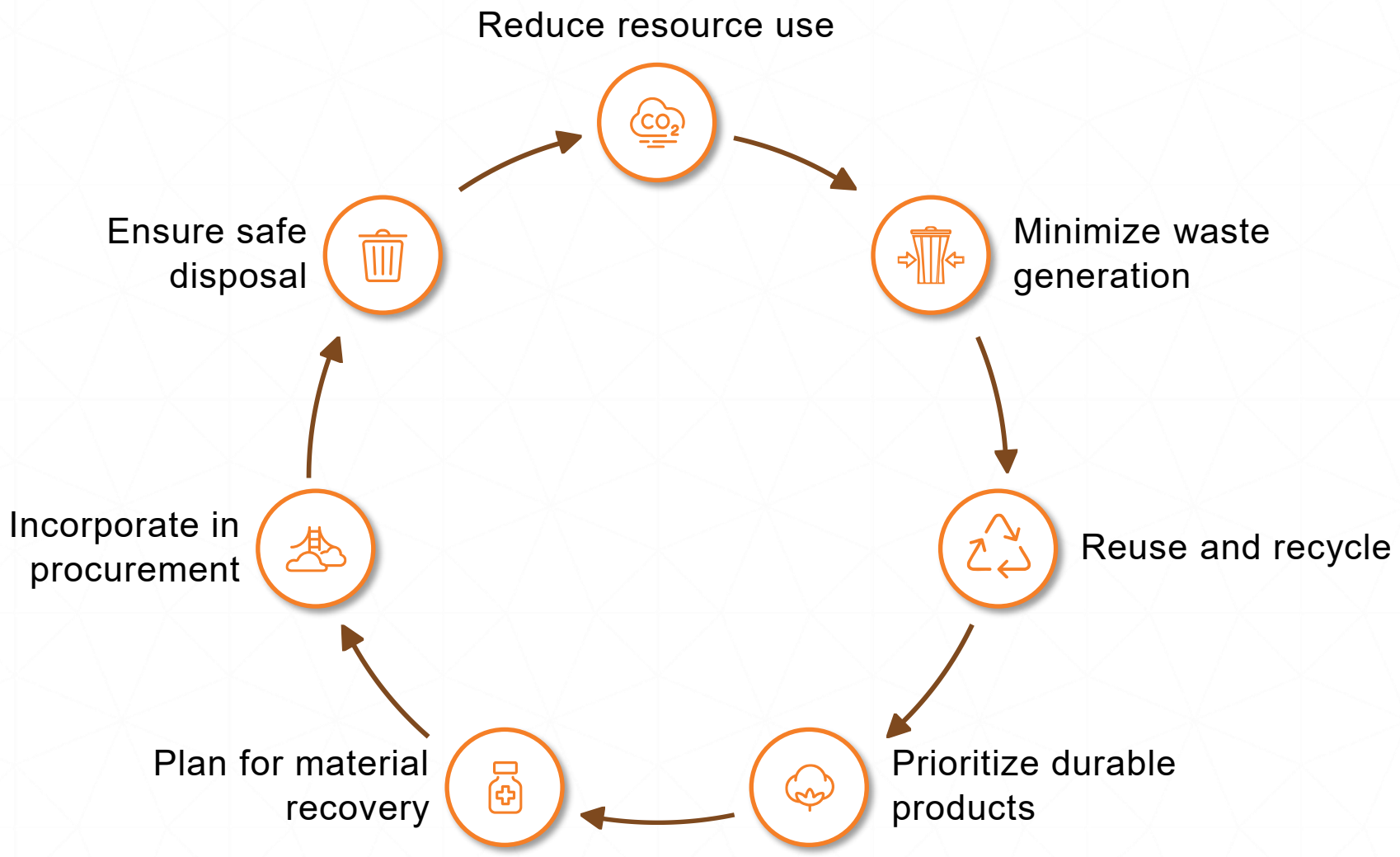
Identification of High Resources/Energy Users

Identify projects that will be significant users of energy, water, or raw materials, and demonstrate that all practical measures have been considered to **optimize resource efficiency**, **reduce waste**, and **lower overall consumption**.

Best Available Techniques (BAT) Study for High-Risk Projects

Conduct a **BAT review** to identify and evaluate proven technologies and practices that can minimize resource use, reduce emissions and discharges, and achieve higher environmental performance. Incorporate BAT findings into **project design, procurement,** and **operational plans**, with clear justification if BAT is not applied.

Circular Economy Principles



RESOURCE CONSERVATION & CIRCULAR ECONOMY

- **Circular Design & Procurement**

  Incorporate circular principles across all project phases, from design to decommissioning, to enable resource conservation and reuse.

- **Waste Minimization**

  Prioritize reducing raw material extraction, minimize inputs and waste at source, and re-enter outputs into productive use.

- **Reuse & Recycling**

  Reuse inert construction waste where possible, comply with local laws, and store/separate materials to maintain quality.

- **Sustainable Sourcing**

  Use legally sourced materials, minimize transport distances, and prioritize local procurement to lower GHG emissions and community impact.

- **Best Available Technologies**

  Assess and apply the best available technologies early to reduce reduce resource demand, cut waste, and benchmark performance.

- **Lifecycle Analysis**

  Evaluate technical alternatives to boost circularity using cost and whole-life analysis.

- **Independent Certification**

  Where feasible, get credible third-party certification to prove prove sustainable resource management.

Energy Use Requirements

Identify Significant Energy Use	Optimize Energy Efficiency	Utilize Renewable Energy	**Benchmark and Monitor**
Assess if the project will be a **high energy consumer**. Consider energy-intensive processes, continuous high-load operations, or large-scale infrastructure.	Seek to sustainably use energy across all stages of the project through process optimization, good operational management, and the **adoption of best available technologies (BAT)** where feasible. For significant energy users, conduct a detailed assessment of energy efficiency options at the early design stage.	Incorporate renewable energy sources into project operations, where technically and financially feasible. Consider the reuse of waste energy.	Benchmark the project's expected energy performance against international comparators, and monitor and report actual energy consumption during project implementation.

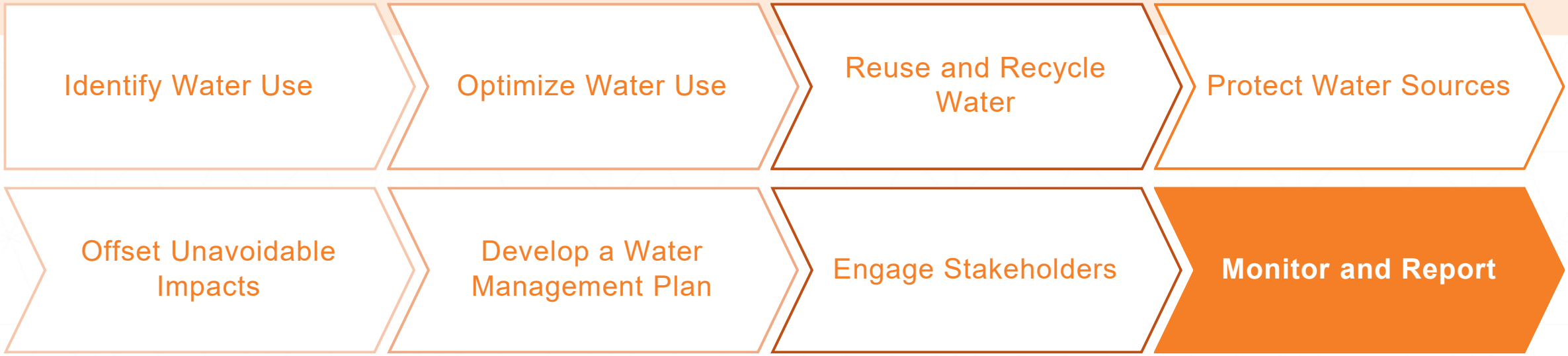
Water Use Requirements

Determine if the project will be a significant user of water, and quantify the water demands.

Implement efficient design, technology, and management practices to minimize water consumption.

Implement water reuse, recycling, and rainwater harvesting strategies to reduce freshwater withdrawals.

Safeguard local water sources, catchments, and ecosystems from potential impacts of the project.



Implement compensatory measures, such as watershed restoration, to offset any unavoidable water use impacts.

Prepare a comprehensive water management plan with annual reporting and continuous improvement actions.

Collaborate with stakeholders to promote shared water stewardship and address water-related concerns.

Regularly monitor and report on water use, reuse, discharge, and savings to ensure transparency and accountability.

Implementing Water Offsets

"only as a last resort (...) to maintain total demand for water resources within the available supply"

- **Restore local catchments**

  Fund or implement watershed rehabilitation, such as reforestation of degraded upstream areas to enhance groundwater recharge.

- **Support community water supply improvements**

  Invest in local infrastructure (e.g., leakage reduction, rainwater harvesting) to free up water resources for wider use.

- **Not beyond site boundaries**

  Ensure offset measures benefit the same catchment or basin affected by the project's water use.

- **Verify and monitor**

  Use measurable performance indicators (e.g., volume of water saved, improved flow) and ensure third-party validation.

Raw Material Use Requirements

Determine if the project is a significant user of raw materials and quantify the expected consumption.

If new raw material extraction is required, ensure it is done through legally approved quarries or pits.

Prepare a material management plan to reduce waste and inefficiency in raw material use.

Prioritize the reuse and recycling of existing materials over the extraction of new raw materials whenever possible.

Minimize transportation emissions by sourcing raw materials locally whenever feasible.

Monitor, report, and continuously improve raw material use over time to optimize consumption and reduce environmental impact.

Sustainable Soil Management Practices

- **Treat soil as a valuable natural resource**

  Recognize soil as an essential component of ecosystems, not just a material to be used and discarded.

- **Protect topsoil quality during excavation, storage, and reuse**

  Carefully handle topsoil to preserve its structure, nutrients, and biological activity.

- **Avoid soil erosion, compaction, and contamination**

  Implement practices to prevent the loss, degradation, and pollution of soil.

- **Use soil-regenerating techniques for agricultural or land-based projects**

  Employ methods like cover cropping, composting, and no-till farming to maintain and improve soil fertility.

- **Minimize loss of productive land by planning site works carefully**

  Thoughtfully design and execute site development to minimize the impact on valuable agricultural or natural lands.

- **Restore disturbed areas to maintain soil health and ecosystem function**

  Rehabilitate and revegetate areas affected by construction or other disturbances to preserve soil integrity and ecological balance.

- **Monitor soil conditions and adjust management as needed**

  Regularly assess soil properties and make adaptations to management practices to ensure long-term soil health.

Pollution Prevention & Management

Carry out a **comprehensive risk assessment**, considering assimilative capacity and local sensitivities

Estimate emissions using the best available, **site-specific data**

Address historical pollution

Screen for **emerging pollutants** (e.g., PFAS, microplastics, pharmaceuticals)

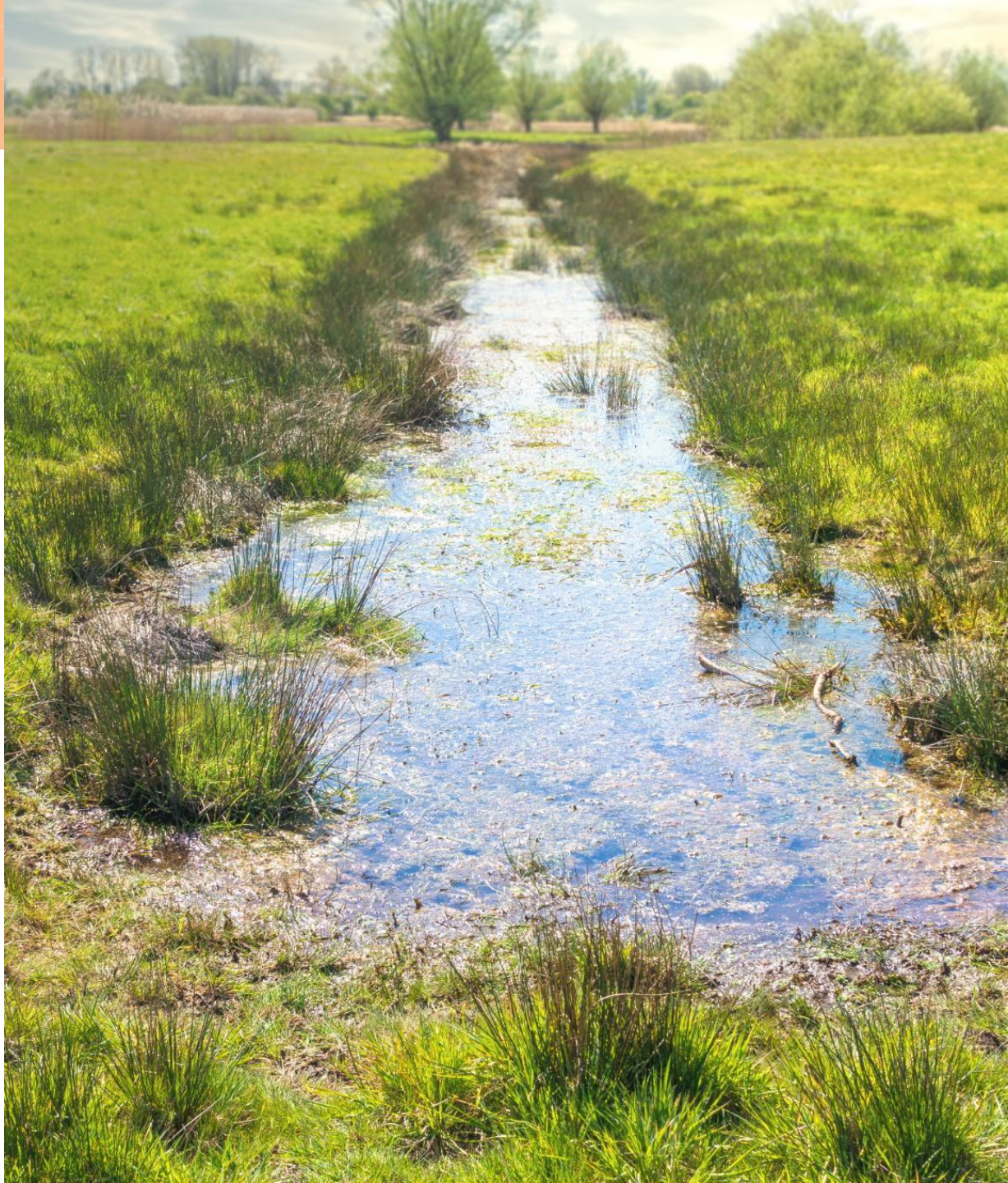
Prepare for **non-routine releases and accidental spills with clear response plans**

Use **pollution offsets only as a last resort**, ensuring measurable and verifiable benefits elsewhere

For significant emission sources in already **degraded areas**, prioritize avoidance and minimization

Pollution Offsets

- Use offsets only for **unavoidable residual impacts in already degraded areas**.
- Ensure offsets achieve **measurable pollution reductions**.
- Prioritize **like-for-like** offsets for better outcomes.
- Tie offsets to **clear baselines** for monitoring.
- Engage local stakeholders for project validation.
- Beware of **common pitfalls** in offsetting practices:
  - » **Offsetting does not replace good design**: Offsets must be the last step, not a substitute for on-site pollution prevention.
  - » **Displacement risk**: Offsets located far away may not benefit the affected communities or ecosystems.
  - » **Uncertain outcomes**: Weak monitoring, poor maintenance, or vague commitments can make offsets ineffective.
  - » **Double-counting**: Avoid claiming credits for actions that would happen anyway.



Sustainable Waste Management

Conduct a **waste estimation study** during project design to quantify expected waste types and volumes.

Reuse **inert construction waste** where feasible, and dispose of remaining waste legally.

Use only **licensed disposal sites** that meet Good International Practice; assess safe alternatives if none exist.

Follow a circular economy approach to avoid generating waste where possible.

Apply the waste hierarchy by prioritizing recycling over other waste management options.

Maintain **complete chain of custody** records for all waste transferred off-site.

Pesticides & Antimicrobials Management

- **Give preference to Integrated Pest Management (IPM) and Integrated Vector Management (IVM)**
  Prioritize holistic, sustainable approaches that combine physical, biological, and cultural controls before resorting to chemical pesticides.
- **Use traditional, indigenous, and biological methods first, apply chemical pesticides only as a last resort**
  Leverage local knowledge and environmentally-friendly techniques such as natural predators, pheromones, and habitat modification before considering pesticides.
- **Prepare a Pest Management Plan (PMP) if significant pest issues are expected**
  Develop a comprehensive plan to address anticipated pest and vector problems, including monitoring, control measures, and emergency response procedures.
- **Ensure public health pesticides are registered, safe for humans and animals, and used with resistance management**
  Verify that all pesticides used for public health purposes are properly registered, pose minimal risks to human and animal health, and are applied in a manner that prevents the development of resistance.
- **Manage spatial risks: identify sensitive areas and apply extra safeguards**
  Recognize and protect environmentally sensitive areas, such as water sources, habitats, and human settlements, by implementing additional control measures and buffer zones.
- **Implement antimicrobial stewardship measures to help prevent antimicrobial resistance (AMR), following WHO guidance**
  Adopt responsible practices for the use of antimicrobials, including proper prescription, administration, and disposal, to mitigate the development and spread of antimicrobial resistance.

Hazardous Chemicals & Materials Management

- **Avoid manufacture, trade, and use of banned or restricted hazardous chemicals and substances**
  Identify and eliminate the use of hazardous chemicals that are banned or restricted by international agreements.
- **Exclude chemicals covered by international conventions ratified by the host country**
  Ensure compliance with international treaties such as the Stockholm Convention on Persistent Organic Pollutants (POPs), the Rotterdam Convention, the Basel Convention, the Minamata Convention, and the Montreal Protocol.
- **Follow the intent and key provisions of applicable international agreements if national laws are lacking**
  In the absence of robust national regulations, adhere to the principles and requirements of relevant international conventions to manage hazardous chemicals and materials.
- **Assess all hazardous chemical use during the environmental & social assessment**
  Conduct a thorough evaluation of the use of hazardous chemicals and materials throughout the project's operations and supply chain.
- **Identify safer alternatives: prioritize avoidance, substitution, or control of hazardous substances**
  Explore and implement safer alternative chemicals, materials, and processes to eliminate or minimize the use of hazardous substances.
- **Apply robust engineering, administrative, and procedural controls to protect workers, communities, and the environment**
  Implement a comprehensive management system, including engineering controls, administrative measures, and well-defined procedures to ensure the safe handling, storage, and disposal of hazardous chemicals and materials.

Monitoring & Disclosure Requirements

- ## Additional Studies and Assessment Documents

  Borrower/client required to prepare additional studies and E&S assessment and management documents based on risk and impact levels

- ## Supplementary Assessments and Risk-Specific Tools

  Borrower/client to prepare additional technical studies and management instruments for high risks projects related to pollution, waste, resource efficiency, or hazardous materials

- ## Integration and Disclosure of Management Tools

  Management tools developed under ESS3 should be fully integrated into the overall E&S management system and disclosed to ensure meaningful stakeholder engagement

- ## Monitoring and Adaptive Management

  Monitoring of ESS3-related commitments, including performance standards, resource use, pollution control, and mitigation effectiveness, should be implemented and aligned with project-specific indicators

Resource Conservation and Pollution Prevention

New Standard and Improved Requirements

SUMMARY

- **Resource use should be minimized** by evaluating alternatives, improving efficiency, adopting circular economy approaches, and using the **best available technology (BAT)** for resource-intensive projects. Where feasible, projects should obtain **independent certification** for sustainable resource management.
- **Energy-intensive projects** should follow **sector-specific standards**, reuse waste energy where possible, and prioritize **renewable or low-carbon energy sources**.
- **Water-intensive projects** should **be avoided** when possible. If necessary, they must minimize water use, improve efficiency, conduct thorough studies (e.g., water balance, annual use intensity), and meet **benchmark standards. Water consumption offsets** should only be used as a last resort.
- **Raw material use** must comply with **host country regulations** and prioritize **recycled materials, reuse strategies, and legally approved sources** to reduce environmental impact. Transportation of materials should also be minimized.

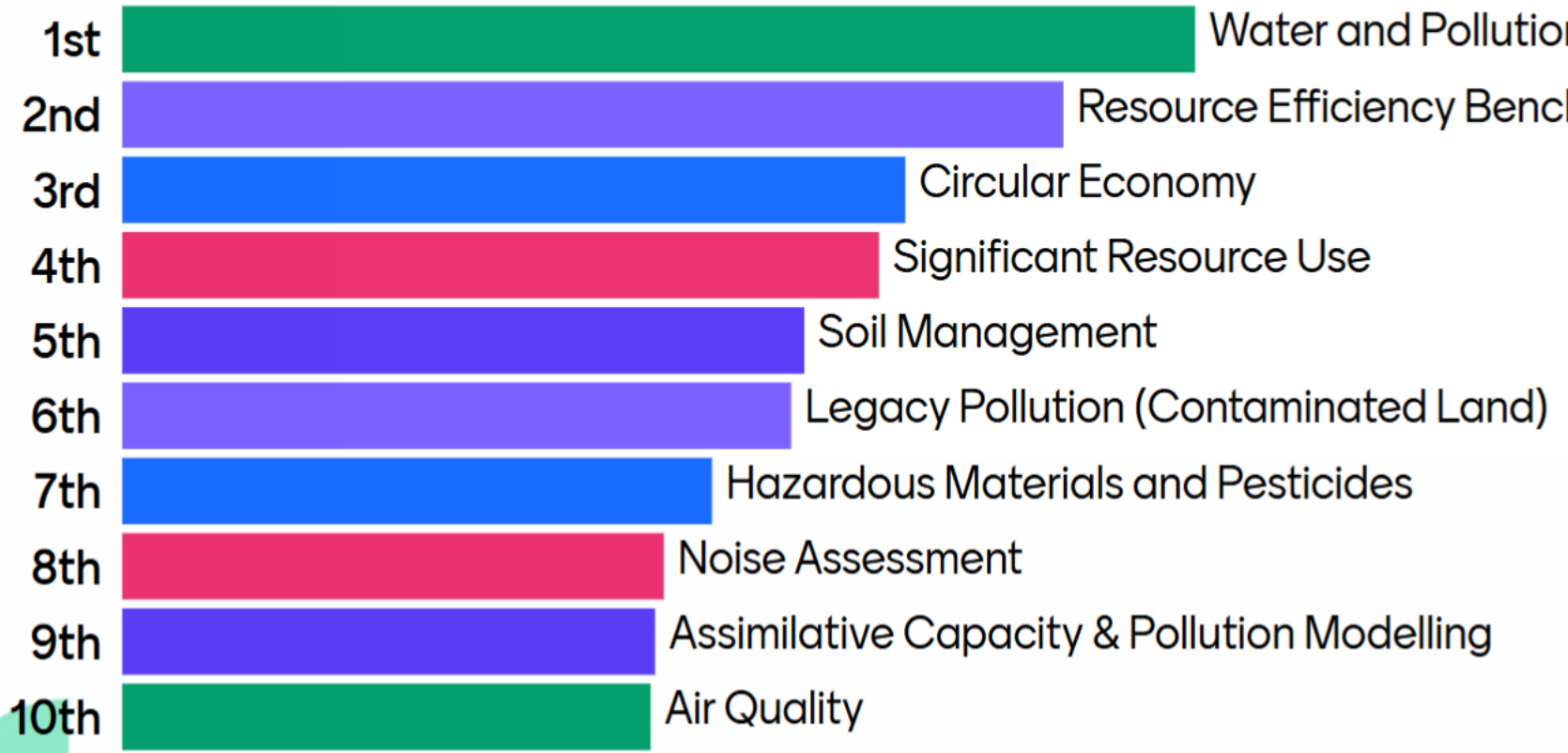
Resource Conservation and Pollution Prevention

New Standard and Improved Requirements

SUMMARY

- **Prevent soil degradation and erosion** and promote **sustainable or regenerative farming** in agriculture projects when feasible.
- **Prioritize pollution prevention**, considering **existing environmental conditions, land use, climate impacts**, and **proximity to sensitive areas**.
- **Adopt a circular economy approach to waste management**, requiring additional **waste estimation studies** for projects generating large amounts of waste. Includes **hazardous and non-hazardous waste disposal requirements**.
- **Prohibit hazardous chemicals, including banned pesticides, persistent organic pollutants, and harmful industrial substances**. If alternatives are not available, ensure **safe use** to protect workers, communities, and the environment.
- **Favor traditional, indigenous, and biological pest control methods** over chemicals. Encourage **integrated pest or vector management** and require compliance with **WHO guidelines** to minimize antimicrobial resistance.

Which of the following topics should be prioritized for future deep dive sessions?



Do you have any additional topics you'd like to suggest?

Open Q&A

Questions and discussions from the participants

Pre-identified Questions (from ESF Masterclass, ESF Orientation)

- On ESS3, most of the provisions in the standard are related to agriculture and the prevention and control of the spread of invasive species. After Nepal became a member of the WTO, we enacted the Pesticide Act. However, the challenge in some cases is effective implementation. Can ADB support the technical assistance to make implementation of existing rules and regulations or laws more effective?
- Resource conservation and sustainable natural resource management are addressed under two separate standards – Standard 3 and Standard 6. Why are these resource management issues split between two standards instead of being consolidated under one?

ESS 3 Risk Classification Questions (Draft)

ESS 3 Risk Classification Questions (Draft)

1. Is there a risk of as a result of unsustainable use of energy, water, soil and/or any other raw material?
2. Is there a risk that the project's emissions, discharges, noise, or activities will cause pollution or nuisance impacts to air, water, soil, or surrounding communities and sensitive receptors
3. Is there a risk that the project's supply chain involves significant indirect resource use or pollution risks, such as sourcing raw materials from poorly regulated or high-impact sectors?
4. Is there a risk that the project will generate hazardous and/or non-hazardous wastes, or use, store, transport, or produce hazardous chemicals, substances, or materials that may pose risks to human health or the environment if not properly managed?
5. Is there a risk of pre-existing contamination (legacy pollution) on the project site that may pose a risk to human health or the environment if not properly assessed and managed?
6. Is there a risk that the project will create temporary or permanent breeding habitats for mosquitoes and rodents that may transmit diseases?

ESS 3 Risk Classification Questions (Draft)

7. Is there a risk that the project will require the procurement, use, storage, handling, application, or disposal of pesticides that could pose risks to human health, biodiversity, or the environment if not properly managed?

8. Is there a risk that the host country does not have adequate legal and institutional frameworks and integrated management systems for managing hazardous chemicals, substances, and materials adopting appropriate standards and Good International Practices (GIPs)?

9. Are there any significant contextual risk factors related to ESS3 that would impact the project?

OFFICE OF SAFEGUARDS

THANK YOU!

ENVIRONMENTAL
AND SOCIAL
FRAMEWORK