[Evaluation Brief]

"Sustainable Capacity Building for Effective Participation in the Biosafety Clearinghouse"

The Biosafety Clearinghouse (BCH) is the official information exchange mechanism established under the Cartagena Protocol on Biosafety to facilitate the sharing of scientific, technical, environmental and legal information on living modified organisms (LMOs). The Protocol itself is a supplementary agreement to the Convention on Biological Diversity (CBD), adopted to ensure the safe handling, transport and use of LMOs that may have adverse effects on biodiversity, taking also into account risks to human health. The BCH plays a central role in supporting transparency, regulatory cooperation and informed decision-making by Parties to the Protocol.

Project Overview

The BCH phase III project, funded by GEF, was implemented globally by UNEP between October 2016 and March 2025 to address persistent capacity gaps affecting effective participation in the BCH. The BCH programme evolved progressively across phases, from basic awareness-raising and infrastructure support in Phase I (2004-2009), through deeper technical capacity-building and regional cooperation in Phase II (2010-2013), to a stronger focus in Phase III on institutionalization, sustainability, inclusiveness, and system-level functionality.

The project supported 76 countries – 92% of them participated in Phase I- to strengthen individual and institutional capacities for biosafety information management. The intervention responded to long-standing challenges including limited technical expertise, weak institutional procedures, incomplete or outdated BCH records and uneven national engagement. It also responded to recurring weakness identified in BCH I and II, particularly regarding sustainability, ownership and institutional embedding. Through a combination of national training, regional support and global digital tools, the project sought to enhance transparency, compliance, and informed decision-making related to LMOs. The project strategy emphasized a blended capacity-building model, combining in-person and virtual modalities, peer learning and sustained technical backstopping through a Regional Advisors (RA) network.

Key outputs delivered: Strengthening Participation and Information Management

- Established and upgraded national BCH portals
- Delivered national and regional capacity-building workshops and training including VLE
- Developed national BCH sustainability plans and procedures
- Established and maintained the Regional Advisors system
- Organized regional networking and knowledge sharing activities

However, variability in national digital readiness, delays in SSFA processing, staff turnover and the delayed upgrade of the global BCH portal constrained output uptake and slowed progress in countries with fewer resources.

Key Outcome Results at a glance

- Increased use of BCH data in decision-making
- Strengthened national BCH systems and organizational procedures for biosafety information
- Improved consistency in BCH data submission and shared problem solving
- Enhanced regional knowledge exchange and peer learning through regional events and the RA network
- Increased knowledge applied in using BCH for compliance reporting and information

Terminal Evaluation

This Terminal Evaluation of the BCH project-phase III was conducted in 2025-2026 in line with the UNEP Evaluation Policy and GEF guidelines to assess project performance against nine criteria, using UNEP's standard six-point rating scale as well as overall weighted project performance rating guided by UNEP evaluation office. The evaluation aimed to support accountability and promote learning. The evaluation drew on document review, stakeholder consultations, field missions and an online survey covering participants across multiple regions. Findings indicate that BCH-III performed at an overall 'Satisfactory' level.

Main Project Outcomes

The evaluation, drawing on interviews, survey responses and document review, found that the project contributed to measurable achievements at outcome level.

BCH engagement shifted in many participating countries from ad-hoc or compliance-driven reporting toward more regularized and functionally embedded use of the BCH within national biosafety systems.

At the institutional level, BCH-related responsibilities became more clearly assigned within institutions, and the BCH was increasingly recognized as a legitimate reference point for information sharing and decision-support.

As a result,

- **Strengthened institutional systems**: National procedures for biosafety information management were evidently strengthened, and inter-agency coordination was improved.
- **Policy-level catalytic effects:** Maldives, Nicaragua and Kenya catalysed national biosafety law drafting. While depth of institutionalisation varied considerably across countries and high staff turnover continued to undermine the continuity, these changes represent an important steps toward institutionalizing the BCH functions beyond individual focal points.

At the human capacity level, evidence indicates the designated officials responsible demonstrated technical confidence, autonomy and willingness to use the BCH and increased knowledge. For instance, participants reported greater familiarity with record formatting requirements, validation procedures and, importantly, the use of the BCH central portal for information retrieval. In countries where trained personnel remained in post, improved usability of the global BCH platform and more systematic support for regulatory transparency and compliance reporting under the Cartagena Protocol were identified.

At the regional and global levels, knowledge exchange and peer learning were enhanced through the sustained support of the RA network, regional events, and the Virtual Learning Environment (VLE):

- **Increased peer-to-peer learning and knowledge sharing:** participating countries moved beyond individual training events toward communities of practice - notably the Asian BCH Family- through which peer-to-peer learning, improved consistency in BCH data submission, and shared problem-solving became regularized practices, though with mixed results in other regions.
- **Strengthened and institutionalized regional advisory support:** The RA system was institutionalized with 19 active and 16 UNEP-certified RAs providing consistent technical backstopping, though its full potential was realized only after clearer roles and sustainability planning were established later in implementation.

Overall, while the degree of institutional embedding varies across countries, the project has helped many participating Parties toward more effective and sustained participation in the BCH through the combination of strengthened national procedures, improved individual skills and reinforced regional support structures.

"We have a strong national biosafety legislation and regulation, and our own biosafety website. Institutional biosafety capacity strengthened under BCH-III has been integrated in our national system" - Mission interviews in Türkiye.

Effectiveness and Efficiency

The hybrid delivery model—combining global coordination, regional technical support and digital learning—helped extend the reach within the budget, achieving most of the expected results. National co-financing was however lower than expected. The project demonstrated adaptability in response to COVID-19 by rapidly shifting to virtual and hybrid delivery formats. The adjustments sustained momentum and accessibility for countries with limited travel budgets. Nevertheless, the extended implementation period reduced momentum in certain activity streams. Efficiency was also reduced by frequent transfer of responsibilities at country and central project level during the long implementation.

The evaluation report notes that progress improved as a result of implementing recommendations for course correction from the mid-term review and adjustments of the results framework, but this was not enough to streamline the management due to overambitious design relative to available resources and uneven country efficiency.

Laboratory training, © General Directorate of Agricultural Research and Policies (TAGEM), Republic of Türkiye

Key Factors Affecting Performance and Impact

The evaluation identified several factors influencing project performance. National ownership and institutional anchoring varied widely, with stronger outcomes where biosafety frameworks were already functional and politically supported. Conversely, weak institutional mandates and limited budgetary prioritization constrained longer-term uptake in some contexts.

While women's participation reached 45% in training activities, the absence of explicit gender mainstreaming limited gender-responsive outcomes.

Contributions to Impact and Sustainability

Signals of Impact: The project's expected long-term impact is enhanced conservation of biological diversity through improved transparency, information sharing and regulatory oversight of LMOs. By strengthening the functionality and use of the BCH, BCH-III contributed to more robust implementation of the Cartagena Protocol and improved global availability of reliable biosafety information. More complete and accessible BCH records support risk-informed decision-making by national authorities and improve international confidence in biosafety governance systems.

- **Governance-level integration:** In countries such as Türkiye, strengthened BCH procedures have been fully integrated into national biosafety systems, supporting more transparent compliance reporting and regulatory oversight of LMOs.
- **Procedural preconditions for impact:** The project has already generated signals of impact in several countries. For example, some national authorities reported that improved BCH data management facilitates more transparent communication of new regulations and supports reporting on compliance to the Protocol. In a few cases, strengthened BCH procedures were linked to broader improvements in national biosafety workflows, including clearer documentation of risk assessment and more systematic archiving of decisions. While these changes remain largely procedural at this stage, they represent important preconditions for longer-term environmental impact.
- **Durable global and regional assets:** The VLE remains operational beyond project as a digital public good for biosafety training, and the RA network continues to provide technical support — though both require secured funding to remain operational.

Sustainability was, overall, assessed at the Moderately Likely level. The continued availability of the VLE, the strengthened RA mechanism and the continued relevance of BCH obligations provide a solid foundation for sustained benefits.

- **Global and regional enablers:** the strengthened RA mechanism and the continued relevance of BCH obligations as well as VLE provide a solid foundation for sustained benefits.
- **Uneven national sustainability:** This remains contingent on political commitment, retention of trained staff and allocation of domestic resources. Likelihood of sustained benefits is

relatively strong where biosafety mandates are clearly anchored in law, dedicated staff positions exist and the governments allocate at least modest domestic resources.

In countries characterized by high staff turnover, weak institutional mandates or limited budgetary prioritization, there is a risk that capacity gains may gradually erode. These patterns highlight the importance of embedding BCH functions institutionally rather than relying primarily on individual expertise.

- **Pathways for sustainability:** Outcome-level monitoring, robust handover protocols during the staff transitions, stronger country ownership incentives; advanced support to national commitment could contribute to sustained improvements in biosafety transparency and, ultimately, to the conservation and sustainable use of biological diversity.

Lessons Learned

Lesson 1: A blended delivery model combining national, regional, and global platforms can substantially extend the reach and durability of capacity-building. BCH-III showed that combining in-country workshops with regional peer networks and the VLE creates reinforcing learning pathways that extend well beyond stand-alone national activities. This could be applied also in other global and regional capacity-building projects with multiple countries.

Lesson 2: Regional advisory networks are most effective when they are institutionalized early and embedded in clear accountability and sustainability arrangements. The RA system emerged as a critical success factor, providing consistent support, peer learning, and technical backstopping across regions. However, the evaluation shows that the system's full potential was realized only after clearer roles, certification, and sustainability planning were established. Future projects can benefit from defining institutional anchoring, performance expectations, and post-project continuity for such advisory mechanisms at design stage, rather than relying on gradual consolidation during implementation.

Lesson 3: Strong output delivery does not automatically translate into outcomes unless monitoring systems track institutional and behavioural change. While BCH-III delivered outputs at scale and often exceeded numerical targets, the evaluation found that monitoring was predominantly of outputs, with limited outcome-level indicators and inconsistent documentation of institutional uptake. This constrained the ability to assess the depth and durability of change, especially across different country contexts. Similar projects should invest early in outcome-oriented M&E frameworks—even for capacity-building interventions—to better capture learning, adaptation, and long-term effects.

Lesson 4: Country ownership is strongest where project activities align with existing legal mandates, budgetary commitments, and national policy priorities. BCH-III achieved deeper ownership and sustainability in countries with established biosafety legislation and institutional mandates, where BCH functions were integrated into national procedures and budgets. In countries lacking such foundations, participation often remained project-driven and weakened sustainability prospects. This highlights the importance of tailoring engagement strategies to national readiness and linking

capacity-building support to institutional incentives and policy frameworks.

"We carried out the first national workshop dedicated to decision-makers. That resulted in improved awareness on political level and strong support for the project implementation, as well as high interest for participation in the second and third workshop"- Online interviews with stakeholder in Barbados.

Lesson 5: Gender and human rights considerations are more effective when they move beyond participation to explicit analytical monitoring frameworks. Gender balance targets can however yield meaningful and measurable gender outcomes even when they are introduced without a formal gender strategy. While BCH-III contributed positively to equitable access to biosafety information and inclusive participation - consistent with human-rights principles such as transparency and non-discrimination - the absence of explicit indicators and analytical tools limited systematic reflection on differential impacts.

Future projects could strengthen learning and accountability by embedding gender and human-rights considerations more explicitly in design assumptions, monitoring indicators, and evaluation questions. Although BCH-III did not include a gender action plan at design stage, the application of a 50% gender participation target in trainings led to near parity in actual participation and strengthened women's technical roles in biosafety governance. Inclusive training formats and open-access digital tools lowered participation barriers for women. This suggests that simple, enforceable gender-responsive measures can generate tangible results, even in technically oriented capacity-building projects.

Long-lasting results over the phases

Although the evaluation covered BCH-III only, 92% of BCH-III countries participated in Phase I, allowing for a cross-phase perspective. The evaluation referenced earlier phases through secondary data and retrospective interviews.

BCH-III built directly on lessons, training materials and the Regional Advisers network from BCH I and II, representing a qualitative evolution from training-centric interventions toward system-level functionality and institutionalization.

The most durable long-term effects are evident at the global and regional level: sustained access to the VLE; improved BCH data quality and strengthened regional networks. These reflect cumulative investment across all three phases. In addition, interviewees during the TE mention a considerable improvement in women participation compared with previous phases, though this could not be formally verified as gender participation was not systematically measured in BCH I and II.

However, persistent challenges, including staff turnover, weak institutional anchoring and limited national financing, have recurred across all phases, underscoring the structural nature of these constraints.

This evaluation was undertaken by an independent evaluation specialist under the guidance of the Evaluation Office of UNEP.

The full Evaluation Report can be found online at: www.unenvironment.org/about-unenvironment/ evaluation
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