Convention on Biological Diversity

Steps and methodology for the development of an indicator, metrics and progress measurement tool on biodiversity and health

I. Background

1. In its decision 14/4, the Conference of the Parties to the Convention on Biological Diversity requested the Executive Secretary, subject to the availability of resources, inter alia, to develop integrated science-based indicators, metrics and progress measurements tools on biodiversity and health; and invited the World Health Organization, in collaboration, as appropriate, with other members of the Inter-Liaison Group on Biodiversity and Health, to support this work. Furthermore, in its decision 16/19, the Conference of the Parties requested the Executive Secretary, subject to the availability of resources, to complete this work, taking into account Section III of the Global Action Plan on Biodiversity and Health.[1]

This document outlines the steps taken towards this end.

II. Rationale and process for the compilation of information and development of a science-based indicator, metrics, and progress measurement tool

A. Considerations

2. The process to develop an indicator, metrics and progress measurement tool on biodiversity and health was informed by the following considerations:

(a) The need to monitor progress in addressing biodiversity and health interlinkages through the implementation of the Kunming-Montreal Global Biodiversity Framework (KMGBF)[2], and the role of the Global Action Plan on Biodiversity and Health as a platform to support the mainstreaming of these linkages into national policies, programs, projects and accounts;

(b) The importance of similar work undertaken by other multilateral agreements and relevant organizations, including the agreed list of KMGBF indicators, to capture the biodiversity and health interlinkages, in order to avoid duplication of efforts;

(c) The importance of developing globally applicable indicators and metrics, while allowing flexibility for national and local contexts;

[1] https://www.cbd.int/doc/decisions/cop-16/cop-16-dec-19-en.pdf

[2] https://www.cbd.int/doc/decisions/cop-15/cop-15-dec-04-en.pdf

(d) The need to take into account the reporting burden and the technical and financial constraints faced by Parties, in particular developing countries, in the development and use of indicators;

(e) The need for indicators to meet the following criteria[3]:

1. The data and metadata related to the indicator are publicly available;
2. The methodology underpinning the indicator is published in a peer-reviewed academic journal or has undergone scientific peer-review and has been validated for national use;
3. The data sources of the indicator are compiled and regularly updated, with a time lag of less than five years between updates, if possible;
4. There is an existing mechanism for maintaining the indicator methodology and/or data generation, including, for example, by an intergovernmental organization or a well-established scientific or research institution, providing nationally applicable guidance on the use of the indicator;
5. The indicator can detect trends relevant to the elements of the actions of the Global Action Plan on Biodiversity and Health;
6. Where possible, the indicator is aligned with existing intergovernmental processes and multilateral agreements.

B. Steps of the process

i. Compilation and assessment of information

3. Information was gathered through the following processes:

(i) call for submissions of information, through notification 2025-012[4];

(ii) compilation of existing indicators for monitoring biodiversity and health interlinkages, which focused primarily on indicators developed under multilateral processes and by intergovernmental organizations. This approach was adopted to ensure global relevance, comparability and to reflect indicators with which Parties are more likely to be familiar and that have previously been approved for international reporting and cooperation. While a wide range of indicators relevant to biodiversity and health have been developed by various initiatives, as well as by academic and other organizations, a comprehensive global compilation of such indicators was beyond the scope of this exercise and would have posed challenges in terms of feasibility, consistency and applicability across Parties. Therefore, the focus on multilateral processes was intended to balance methodological robustness, practical feasibility, and relevance for Parties' implementation and reporting needs.

(iii) an expert consultation with members of the former Inter-Liaison Group on Biodiversity and Health[5].

4. Among all information gathered through the processes mentioned above, indicators that satisfied the criteria provided in paragraph 2e above, were considered feasible and were added to the list of "existing indicators", presented in Annex I. This list is intended to demonstrate the substantive number of indicators that already exist and have been agreed upon, and can support the monitoring of biodiversity and health interlinkages.

[3] These criteria are largely in line with the criteria in Annex I, paragraph 2, of Dec 15/5 which were used to identify indicators for the monitoring framework for the Kunming-Montreal Global Biodiversity Framework.

[4] https://www.cbd.int/notifications/2025-012

[5] See Inter-Agency Liaison Group on Biodiversity and Health

5. For the purpose of this document, all indicators under the monitoring framework of the KMGBF were considered relevant and were therefore not added to the list.

6. The compilation showed that most existing indicators measure trends on biodiversity and/or health, while a more limited number are specifically designed to address or to adequately reflect the cross-cutting nature of the interlinkages between the two fields. Indicators focusing exclusively on single outcomes or narrow elements of these linkages were found to be useful for tracking trends in specific areas or fields (e.g, land-and-sea-use, species management, pollution, etc), but insufficient to capture the cross-sectoral nature of biodiversity-health interlinkages.

7. Concerning the inputs received from the submission of information and the expert consultation, several conceptually relevant indicators proposed through these processes could not be included, as they did not fully meet one or more of the agreed inclusion criteria. Their exclusion, therefore does not reflect a lack of relevance, but rather current methodological and data limitations. Only two of the inputs received were found to meet the criteria: the "Global One Health index for zoonoses", and the "number of cities applying the 3+30+300 principle". While most submissions did not identify indicators that are ready for use at the global and national scales and which directly address the biodiversity and health nexus, they highlighted important issues that may inform the future development of indicators as data availability and validation improve.

8. As a result of this analysis, most of the information provided through submissions and the expert consultation was incorporated into the development of a single novel composite indicator designed to comprehensively assess the mainstreaming of biodiversity and health interlinkages (see Annex I below), which was considered the most realistic first step towards strengthening the monitoring of the issue.

9. The indicator uses a progress measurement tool structured around a set of questions and response options, enabling systematic aggregation and disaggregation, assessment and comparison of responses across Parties in a transparent and reproducible manner. This approach is similar to that agreed by the Conference of the Parties when it adopted a set of binary indicators under the monitoring framework of the KMGBF, accompanied by questions to be addressed through the national reports when headline indicators could not be developed. A similar approach was used when developing indicators for the Gender Plan of Action. Applying this approach in the present context, provides a coherent and integrative means of capturing the multidimensional nature of biodiversity and health interlinkages while avoiding fragmentation across sector-specific metrics. By synthesizing information from diverse domains, the composite indicator enables a holistic assessment of progress, facilitates comparability across countries and processes, and supports more effective communication and decision-making at the science–policy interface.

ii. Development of a composite indicator on the mainstreaming of biodiversity and health interlinkages

10. On the basis of the above, an indicator to measure progress on the mainstreaming of biodiversity and health interlinkages was developed (Annex II) to address the existing gap. This indicator is intended to complement the set of existing indicators identified through this process (Annex I), which are more sector-specific, and is conceptually similar to the indicator developed under the Gender Plan of Action[6], which functions as a component indicator of the KMGBF.

11. The indicator is intended to serve as a practical tool for Parties and stakeholders to measure their progress towards the consideration of biodiversity and health interlinkages as per section C paragraph 7 (r) of the KMGBF in a comprehensive manner, and to track progress in the implementation of the Global Action Plan on Biodiversity and Health.

[6] Component indicator 23.CT.2 of the decision 15/5, for which a metadata sheet is available at https://gbf-indicators.org/metadata/other/23-1-C

12. The development of this indicator is based on the recognition that interlinkages between biodiversity and health operate across multiple spatial and temporal scales and sectors. These linkages are thus not confined to a single thematic area, but are embedded across diverse policy, institutional and operational contexts.

13. The novel composite indicator developed through this process relies, to the extent possible, on information that is already generated through national policy and reporting processes or could be easily gathered, rather than requiring the generation of new and highly specialized datasets. This approach was considered particularly appropriate at this stage of global awareness of the interlinkages of biodiversity and health, and in light of the need to ensure global relevance and applicability across diverse institutional capacities and monitoring infrastructures in different countries.

14. The composite indicator could be periodically reviewed, if necessary, as new biodiversity and health indicators mature and become available. This ensures that the indicator remains relevant, scientifically robust and responsive to evolving information and national capacities. It is expected that as novel indicators that capture the biodiversity and health interlinkages will be developed the number of questions in the progress measurement tool could decrease.

15. The indicator thus represents a pragmatic balance between scientific robustness, policy relevance, and operational feasibility. This indicator is intended to enable Parties to monitor trends and progress, while allowing for flexibility to reflect national circumstances, priorities and capacities.

Annex I

Compilation of existing indicators for monitoring of biodiversity and health interlinkages

(Document available here)

16. This compilation includes existing indicators from multilateral processes that may be useful for monitoring biodiversity and health interlinkages. For the purpose of this document, all indicators under the KMGBF were considered relevant and are therefore not listed separately here. The compilation also includes two relevant indicators proposed through submissions received in response to notification 2025-12.

17. It is worth noting that this should not be understood as an exhaustive list of existing indicators for monitoring biodiversity and health interlinkages, but rather as an indicative set of indicators that countries may draw upon, as appropriate.

Annex II

Composite indicator on the mainstreaming of biodiversity and health interlinkages

(Document available here)

18. The composite indicator[7] measures the extent to which Parties have mainstreamed biodiversity and health interlinkages at the national level. It is consistent with section C of the KMGBF and with the Global Action Plan on Biodiversity and Health, and fully aligned to reflect progress across the actions set out. The indicator tracks national efforts to mainstream biodiversity and health interlinkages across policies, programs and practices using a standardized scoring system adapted from the methodology developed for the indicator for the Gender Plan of Action. The composite indicator has the following elements: a progress measurement tool, potential data sources, and a scoring instrument.

I. Rationale

19. The integration of biodiversity and health considerations is central to achieving the goals and targets of the KMGBF. However, most existing biodiversity indicators lack direct coverage of health-related dimensions, and vice versa. While numerous indicators were identified through submissions and expert consultation, most lacked publicly accessible data and metadata and did not meet the necessary methodological transparency or peer-reviewed validation for inclusion. In many cases, indicators were conceptually irrelevant, too narrowly-focused, and/or operationally infeasible due to irregular or absent data or depended on irregular or non-existent national reporting mechanisms.

20. Despite the valuable input received during the consultation process, these contributions cannot overcome existing data and methodological gaps. Developing entirely new indicators was not considered at the risk of being premature, as the foundational data systems and cross-sectoral coordination mechanisms necessary for their application are still under development. For some areas, it was unclear whether the scientific state of the art could support the development of indicators, or whether future research was required. In addition, the Global Action Plan on Biodiversity and Health spans multiple thematic categories, and the development of a suite of novel indicators for each area would require additional research, technical work, and resources.

21. In this context, a single composite indicator to track progress on the mainstreaming of biodiversity and health interlinkages was considered the most pragmatic and scientifically sound approach to ensure usability by Parties. By focusing on policy and institutional capacity, the composite indicator enables Parties to understand their progress in integrating biodiversity and health linkages and strengthening their ability to use, mobilize, and further develop relevant information across different sectors of society and different levels of government.

22. The expert inputs from the consultation process, and the information gathered through the submissions, were extremely useful in guiding and framing the contents of the indicator on biodiversity and health, in particular in the design and content of the progress measurement tool, and the identification of data sources that are presented as an non-exhaustive list that could be used as a reference by Parties on a voluntary basis. It is expected that this approach establishes a framework that can be strengthened over time as data availability, technical capacity, and methodologies improve.

[7] Composite indicators are synthetic aggregation of single-purpose measures that allow tracking progress towards complex, multi-dimensional goals

23. The indicator is voluntary and has been designed to ensure methodological consistency with the indicator on the national implementation of the Gender Plan of Action. Parties may voluntarily report progress on the mainstreaming of biodiversity and health interlinkages in the relevant sections of their national reports using the indicator as a supporting tool.

Key aspects of the indicator are the following:

24. Components measured: The indicator measures the extent to which Parties are mainstreaming biodiversity and health interlinkages into the implementation of the KMGBF, with progress assessed against the voluntary actions set out in the Global Action Plan on Biodiversity and Health.

25. Method: The indicator is based on a structured progress measurement tool as a questionnaire, composed of multiple-choice questions. Responses are aggregated per action (action index) and per category (thematic category index), and across all actions, to produce an overall final index value that enables measurement of progress over time. Questions are explicitly mapped to thematic categories to facilitate disaggregated reporting, allowing them to functionally be used as component indicators of the Global Action Plan.

26. Suitability: The indicator is suitable for providing information on progress towards paragraph 7 (r) of the KMGBF and implementation of the Global Action Plan on Biodiversity and Health. The indicator is expressed as an index value to reflect the extent to which biodiversity and health considerations are part of the national implementation.

27. The indicator gathers information through a progress measurement tool and is presented as an index value that ranges from 0 to 100%, where 0 represents no progress and 100% represents full national implementation of the Global Action Plan on Biodiversity and Health.

28. To help Parties in their reporting, some data sources have been identified during the development of the questionnaire and are suggested as voluntary sources of information to use, as needed, when responding to the questions on the progress measurement tool. This should not be considered an all-encompassing list, but rather an illustrative one. When more relevant or authoritative data sources are available to Parties, those sources should be used as part of the assessment.

II. Definition

29. The questions on the progress measurement tool are closely aligned with sections III.A and III.B of the Global Action Plan on Biodiversity and Health, ensuring that all key elements are addressed. The questions were developed using information submitted to the Secretariat through the submissions of information and the expert consultation and further refined by experts from the Group on Earth Observations Biodiversity Observation Network (GEO BON) and the Secretariat to ensure all elements of the actions are considered, as well as consistency in language and approach.

III. Methodology

30. The indicator is operationalized through a progress measurement tool in the form of a questionnaire with multiple-choice responses (sheet 2 of Annex II), and by the calculation of a composite scoring index through a scoring instrument (sheet 4 of Annex II).

31. The progress measurement tool consists of 156 questions to assess progress towards the specific actions in both sections III.A and III.B of the Global Action Plan on Biodiversity and Health. Some actions have more than one question associated with it to ensure coverage of the breadth of the scope of the action. Each question is to be answered via the selection of a category that reflects the level of progress made: *(a) Fully*; *(b) Partially*; *(c) Under development*; *(d) No*; *(e) Not applicable.*

32. The questionnaire is meant to be completed by a designated national focal point (e.g., CBD focal point, an additional national focal point that may have been nominated according to the Global Action Plan recommendations, or another relevant national focal point) from a government entity (e.g., ministry of environment, ministry of health or other relevant entity) who will coordinate inputs with other relevant government entities (e.g., ministries of agriculture, national statistics offices and other relevant agencies), indigenous peoples and local communities and stakeholders as relevant and based on national circumstances. Note that the Global Action Plan on Biodiversity and Health calls for the nomination of additional focal points (gender, youth) who may be involved in the assessment, if Parties so wish.

33. Responses are then used to generate a quantitative index through a process of three steps (see *IV. Computation*). Progress monitored through the mainstreaming of biodiversity and health interlinkages through this indicator can then be reported by countries voluntarily through their national reports.

IV. Computation

34. The indicator employs the same Likert scale as GBF indicator 23.CT.2[8], a measurement method widely used in social sciences. The progress measurement and tool and scoring instrument contain a four-point scale, with "No" being 0% and "Fully" being 100%. Questions identified as "Not applicable" are not used in scoring.

35. Indicator 23.CT.2 uses question-specific definitions of each point on the scale. Given the number of questions currently considered for this indicator, this was unfeasible, and the criteria were harmonized across the entire indicator so that the categories for scoring are defined as:

(a) **Fully (score of 100%)**: Select this option if the activity is fully implemented. Depending on the context, it should be evident and occur at different levels. For example, it may involve participation or input from multiple sectors and actors; have broad coverage (e.g., nationwide or spanning more than one sector or area); be formalized and likely to continue over time; have a dedicated budget allocation; be verifiable or easily identifiable.

(b) **Partially (score of 66.67%):** Select this option if the activity is fully implemented but meets some, but not all, of the parameters. For example, it may: involve only a limited number of sectors or actors; cover a narrower scope (e.g., local level, single sector, or specific area); be informal or temporary, with limited likelihood of continuation; have minimal or no dedicated budget allocation; be more difficult to verify or only partially documented.

(c) **Under development (score of 33.33%):** Select this option if the activity is in progress, but has not been fully implemented. For example, it may: be in the planning or early implementation phase; involve initial consultations or limited participation from sectors and actors; have a draft framework, pilot, or strategy in place but not fully formalized; have potential funding identified, though not yet allocated or operational; show early evidence or commitments, but with limited concrete results so far. In this case, the action may (i) indicate intent and movement toward implementation, but it is not yet fully operational or sustained; (ii) demonstrate progress but falls short of meeting the full set of parameters and being fully implemented. Which parameters apply will depend on the question asked. These parameters should be interpreted in the context of each specific question. Not all of them will apply in every case, but some may be particularly relevant depending on the question asked. This category differs from "Partially" in that it denotes work towards the mainstreaming of biodiversity and health that is ongoing and not currently part of standard procedures.

[8] https://gbf-indicators.org/metadata/other/23-1-C

(d) **No (score of 0%):** Select this option if no activity has been taken. When work to implement an action is planned but has not been initiated, use this answer rather than "Under development".

(e) **Not applicable:** Select this option if the question is not relevant to national circumstances.

36. Each group of questions corresponds to a thematic category of actions outlined in the Global Action Plan on Biodiversity and Health, which is, at the same time, aligned with the KMGBF targets. Since all questions are deemed equally important, no weights are applied in the calculations.

37. The three steps to calculate the index value are (see Figure 1):

(a) **Step 1.** Assign numerical values to categorical responses. Categorical values for each answer correspond to: (a) Fully = 100%; (b) Partially = 66.67%; (c) Under development = 33.33%; (d) No = 0%.

(b) **Step 2.** Scale the numerical value with reference to the maximum score achievable for each question using the formula:

i. **Raw value =** numerical value given by the categorical response in step 1

ii. **Maximum achievable score** = maximum value possible for each answer provided (i.e., Fully = 100%)

iii. **Scaled value** = Raw value / Maximum achievable score

(c) **Step 3.** Calculate the final index by averaging all the questions to provide a score for an action, then averaging all actions to provide a score for a category, then all categories to obtain a country-level score. The final index, once multiplied by a hundred, represents the percentage of achievement for the country. All intermediate scores can also be interpreted as percentages of completion. As the questions, actions, and categories are equally weighted, each component contributes proportionately to the average score. While equal weighting promotes methodological simplicity, transparency, and comparability across actions, it does not differentiate between actions that may vary in transformative significance, scope and/or cost to implement. The index should therefore be interpreted as a measure of overall implementation progress rather than a reflection of relative policy impact or effectiveness. Parties may decide to report the percentage of achievement for each section (III.A and III.B) or for each thematic category of the Global Action Plan on Biodiversity and Health.

Thematic Categories	Actions	Proposed questions	Answer (from user)	Score (numerical value)	Action index (question average)	Thematic category index	Proportion applicable
1	(a)	1	Partially	66,67%	66,67%	80,00%	83,33%
		2	Under development	33,33%			
		3	Fully	100,00%			
	(b)	1	Not applicable		100,00%		
		2	Fully	100,00%			
		3	Fully	100,00%			
2	(a)	1	No	0,00%	25,00%	48,15%	100,00%
		2	Under development	33,33%			
		3	Under development	33,33%			
		4	Under development	33,33%			
	(b)	1	Partially	66,67%	88,89%		
		2	Fully	100,00%			
		3	Fully	100,00%			
	(c)	1	Partially	66,67%	33,33%		
		2	No	0,00%			
3	(a)	1	Fully	100,00%	100,00%	100,00%	100,00%
		2	Fully	100,00%			
		3	Fully	100,00%			
		4	Fully	100,00%			
			FINAL INDEX			76,05%	

Figure 1. Mockup of the three steps needed for calculating the index value, with an illustrative example for Country A, with a simplified set of hypothetical questions covering 3 thematic categories and 6 actions. This figure is adapted from the description of indicator 23.CT.2. Each question is scored out of its maximum possible value of 100%, and questions scored as "Not applicable" are not counted. As the items are unweighted, the scores can be averaged for each thematic category or action of the plan, allowing the calculation of finer-scale indices as required. The "traffic light" color classes for scores are explained in Figure 2.

V. Interpretation

38. The indicator is designed to be reported as a single figure (final index). However, a more detailed interpretation can provide valuable insights. For example, there are four alternative interpretations provided for the indicator, and these are shown below using an illustrative example for Country A. This simplified example comprises 19 hypothetical questions covering 3 thematic categories and 6 actions. All results are provided using the scoring instrument for this indicator.

(a) Country A has an index of 68.52% regarding progress on the mainstreaming of biodiversity and health interlinkages at the national level (Figure 1). This is obtained by averaging all scaled answers provided in Figure 1. Country A reported on 18 questions applicable to their national circumstances (Figure 1), out of 19 possible questions, and only answered questions are used in scoring.

(b) With an index value above 66%, Country A is making good progress towards the mainstreaming of biodiversity and health interlinkages at the national level (**Figure 2**).

Index smaller than 33%	Further progress needed
Index between 33 and 66%	Moderate progress
Index greater than 66%	Good progress

Figure 2. Representation of traffic light classes for each equally spaced interval of the percentage scale of the index. These are used for (and taken from) indicator 23.CT.2.

(c) Country A is showing varying progress within the thematic categories of the Global Action Plan on Biodiversity and Health (Figure 3). It is making good progress in implementing actions covered under category 1 (index of 80%) and category 3 (index of 100%), while making moderate progress in category 2 (index of 48%). These indices were calculated by averaging all scaled answers provided for each thematic category.

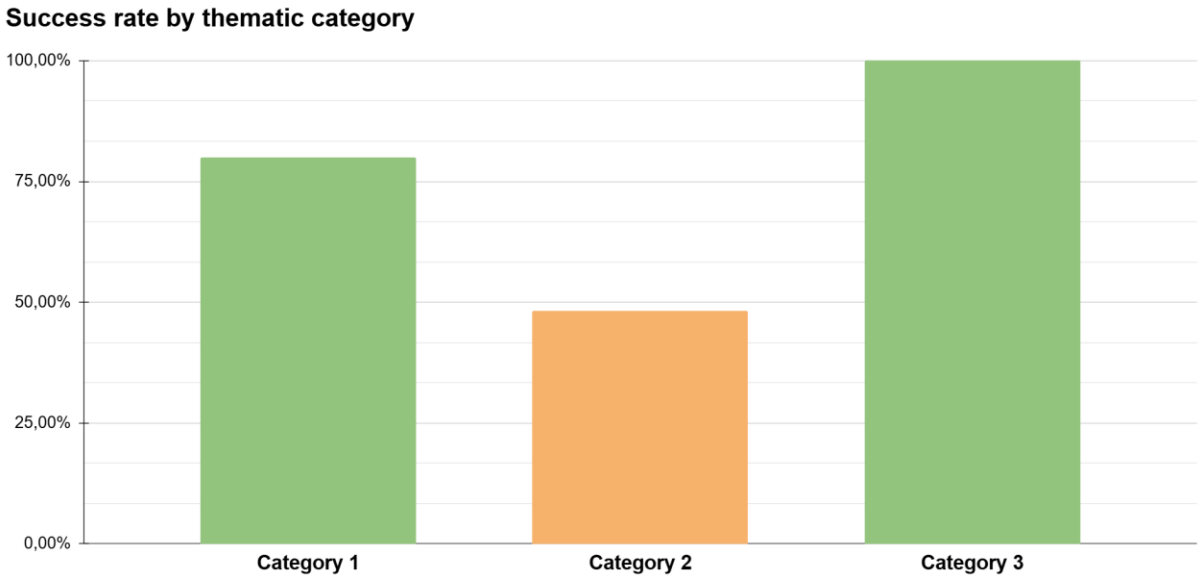

Figure 3. Bar chart illustrating progress made towards national implementation of each thematic category of the plan, generated from the mockup data presented in Figure 1. This figure is adapted from the fact sheet of indicator 23.CT.2. Indices for each of the three expected outcomes are shown using the same color code as the traffic light ranges in Figure 2.

(d) When disaggregating the index by actions of the Global Action Plan on Biodiversity and Health (Figure 4), we find that Country A is making good progress in four actions, while showing moderate progress in one, and needing further progress in another. This figure is obtained by averaging all scaled answers provided for each action.

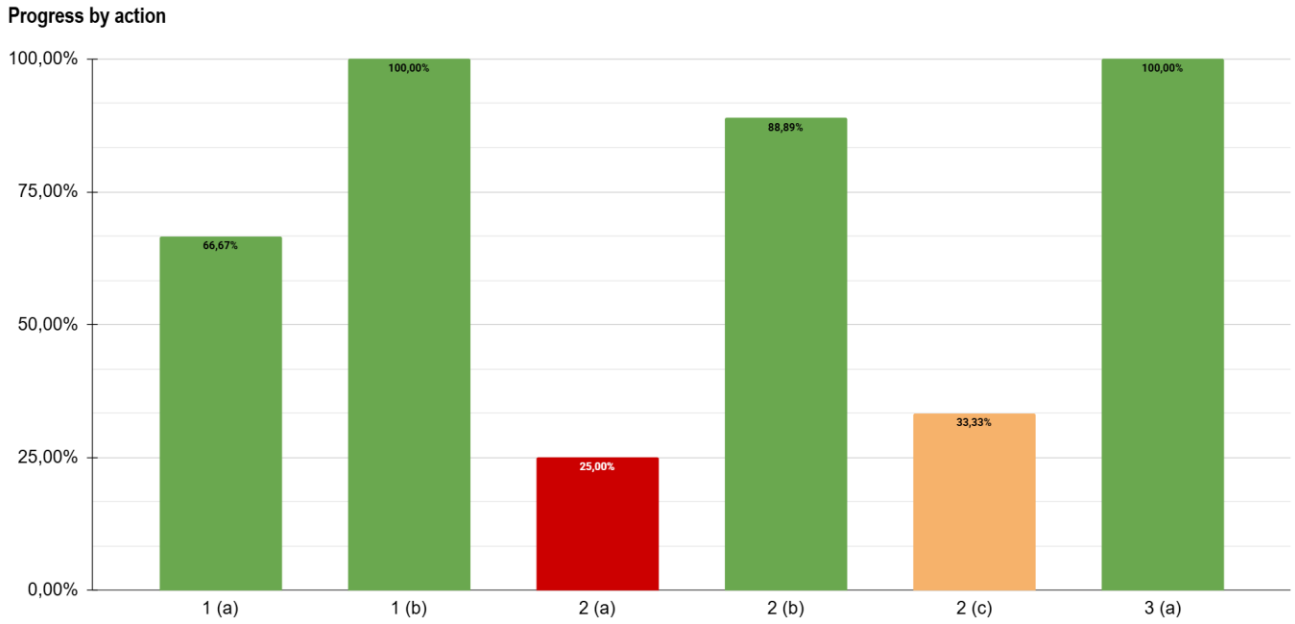

Figure 4. Bar chart illustrating progress made towards national implementation of each action of the plan, generated from the mockup data presented in Figure 1. This figure is adapted from the fact sheet of indicator 23.CT.2. Each thematic category (numbers on the x-axis) has a different set of actions (letters in parentheses). When disaggregated by actions, this reporting allows countries to identify general actions under section III.A or specific actions under section III.B where specific progress can be made. Each index is color-coded as per Figure 2.