

## **Guidelines and template for the review of the draft monitoring framework for the post-2020 global biodiversity framework**

### ***I. Background***

1. The second meeting of the Open-ended Working Group<sup>1</sup> on the Post-2020 Global Biodiversity Framework invited the Subsidiary Body on Scientific, Technical and Technological Advice at its twenty-fourth meeting to, among other things, carry out a scientific and technical review of the updated goals and targets, and related indicators and baselines, of the draft global biodiversity framework. Under agenda item 3 the Subsidiary Body will consider this issue.
2. Tables 1 and 2, presents a draft monitoring framework for the 2050 Goals and the 2030 targets respectively. These tables are being made available for the purposes of peer review. In both tables' interim formulations of the proposed 2050 goals and milestones and the 2030 targets are provided for context. Review comments are not being sought on these parts of the post-2020 global biodiversity framework at this time.
3. **Column A of the tables provides draft components of the goals and targets. Columns B and C of the tables provide draft monitoring elements and indicators to be used at the global level** to monitor progress in the implementation of the post-2020 global biodiversity framework. Further column D provides information on the period baseline data is available for the indicator and on the frequency that the indicator is updated where known. Review comments are being sought on columns A, B, C and D only.

### ***II. Submitting Comments***

1. To ensure that your comments are given due consideration, please send them by e-mail to [secretariat@cbd.int](mailto:secretariat@cbd.int), at your earliest convenience but **no later than 15 August 2020**
2. When submitting comments, please adhere to the following guidelines as much as possible:
  - a. Please provide all comments in writing and in an MS Word or similar document format using the table provided below.
  - b. Please provide full contact information for the individual/Government/organization submitting the comments.
  - c. Please avoid commenting on issues related to grammar, spelling, or punctuation, unless it affects the overall meaning of the text, as the document will be edited as the final draft is prepared.
  - d. To facilitate the revision process please be as specific as possible in your comments. In areas where you feel additional or alternative text or information is required, please suggest, if possible, what this text may look like or what should be included.
  - e. If you refer to additional sources of information, please include these with your comments when possible or provide a complete reference or hyperlink.

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<sup>1</sup> [CBD/WG2020/REC/2/1](https://www.cbd.int/wg2020/rec/2/1)

- f. Please focus your comments on columns A (components the draft goals and targets), B (monitoring elements), C (indicators) and D (indicator baseline year and frequency of updates) of tables 1 and 2.
  - g. **If you are suggestion the inclusion of additional indicators please provide information** on if the indicator is currently operational, the organization supporting its development, its baseline (i.e. the year data is first available) and how frequently the indicator is updated (i.e. monthly, yearly, every two years etc.).
  - h. All review comments will be posted on the webpage<sup>2</sup> for the post-2020 global biodiversity framework in the interests of transparency
3. Should you have any questions regarding the review process, please contact [secretariat@cbd.int](mailto:secretariat@cbd.int).

### **III. Template for Comments**

- 4. Please use the review template below when providing comments.
- 5. The complete draft of the monitoring framework has been released in a portable document format (PDF). For tables 1, 2 and 3 column letters and row numbers have been provided as well as page numbers. Please use these as a reference as illustrated in the table below. General comments can be included in the table by referring to Page 0 and Line 0.

### **TEMPLATE FOR COMMENTS**

| <b>Review comments on the draft monitoring framework for the post-2020 global biodiversity framework</b> |  |
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| <i>Contact information</i>   |  |
| <b>Surname:</b>  | Ishii-Eiteman, PhD.                        |
| <b>Given Name:</b>   | Marcia                                     |
| <b>Governmen t</b>   | NA   |
| <b>Title</b>   | Senior Scientist                           |
| <b>Organizatio n:</b>  | Pesticide Action Network International     |
| <b>Address:</b>  | C/o PANNA, 2029 University Ave., Suite 200 |
| <b>City:</b>   | Berkeley CA 94704                          |
| <b>Country:</b>  | USA  |
| <b>E-mail:</b>   | mie@panna.org                              |

<sup>2</sup> <https://www.cbd.int/conferences/post2020>

### ***General Comments***

On behalf of the Pesticide Action Network (PAN) International, I am pleased to submit the following comments.

PAN international is a global network of 600 organizations in 90 countries, with 5 regional centers in Africa, Asia & the Pacific, Europe, Latin America & the Caribbean and North America. Our members include peasant and family farmers, farmworkers, medical and public health professionals, scientists, representatives of sustainable agriculture, labor, environmental and consumer groups and social movements, and individuals concerned with the safety, sustainability, fairness, resilience and integrity of our food and farming systems.

Pesticide Action Network fully endorses the Open Letter sent to the CBD recently by the CBD Alliance, the Women's Caucus and the Global Youth Biodiversity Network (GYBN).

In accord with that letter, and regarding this peer review process, we disagree with the CBD's current restrictions that allow comments only on monitoring elements, indicators and baseline data, as member states have not yet discussed, negotiated or agreed upon the goals, milestones and targets for the Post-2020 GBF. Therefore it makes little sense to develop indicators for goals and targets that themselves have not been agreed upon.

We join the CBD Alliance, Women's Caucus and Global Youth Biodiversity Network in insisting that the CBD allow continued public comment on goals, milestones and targets and postpone any discussion of monitoring elements, indicators and baseline data until after the former have been negotiated and agreed by member states.

Furthermore, we insist that the CBD take into account the realities, needs, priorities and constrained participation of rights holders, civil society as well as many governments of the global South, during the current COVID-19 pandemic. Notwithstanding the urgency in addressing today's biodiversity crises, any process of discussion and negotiation – whether virtual, online or hybrid – must in no way privilege better resourced governments and stakeholders (such as the private sector) over rights holders, directly impacted, marginalized or vulnerable communities and civil society. Should such inequitable privileging take place, the end result is almost certain to be a GBF that is more damaging than protective of global and local biodiversity.

PAN provides the following preliminary comments on Tables 1 and 2. That we are providing these comments on components, monitoring elements and indicators at this time does in no way indicate that we accept the goals, milestones and targets as given, approved or final.

### ***Specific Comments***

| T | P | C  | Ro | Comment |
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|---|---|------------------|-----------|--|
|   |   |                  |           | <b>TABLE 1: Interim formulation of 2050 goals, milestones, monitoring elements &amp; indicators</b>  |
| 1 | 2 | C                | 16        | Propose Simpson Index for crop and livestock biodiversity (can be utilized to measure crop species richness)   |
|   | 2 | C                | 16        | Propose Agrobiodiversity Index (Bioversity International. 2018. The Agrobiodiversity Index: Methodology Report v.1.0. Bioversity International, Rome, Italy). See indicators & data sources within.  |
|   | 2 | C                | 16        | FAO <a href="#">Tool for Agroecology Performance Evaluation</a> (TAPE) provides a comprehensive approach to measuring and assessing sustainability, with direct relevance to farmland biodiversity, ecosystem integrity and connectivity. For each of the 10 criteria in TAPE, 3-5 indicators are provided (termed indices). In addition, TAPE provides Core Performance Indicators, each of which are based on 5 dimensions representing relevant SDGs. Detailed methodology for each Core Performance Indicator is provided in the manual. |
|   | 2 | C                | 16        | The <a href="#">TEEB AgriFood framework</a> . Includes sustainability indicator sets, enabling measurement and valuation of ecosystem services relevant to food and farming systems.   |
|   | 2 | C                | 16        | EU Pollinator Monitoring Scheme – under development (Action 1 of the EU Pollinators Initiative). Once implemented it will ensure data on the status and trends of pollinator species, as well on pollination ecosystem service. Proposal to be published Sept 2020.  |
|   | 2 | C                | 16        | European Monitoring of Biodiversity in Agricultural Landscapes (EMBAL): in pilot phase (until Q2 2021), once implemented it will ensure data on the state of pollinator habitats ( <a href="#">links: report, survey manual</a> )  |
|   | 2 | C                | 16        | LUCAS (Land Use and Coverage Area frame Survey) – its grassland module will provide data on the state of grasslands, which are pollinator habitats of critical importance <a href="https://ec.europa.eu/eurostat/web/lucas">https://ec.europa.eu/eurostat/web/lucas</a>  |
|   | 2 | C                | 16        | INSIGNIA. Pollinator health. Provides data on pesticide concentrations in the environment, plant diversity, pesticide residues in bee pollen and their botanical source. Currently in year 1 of a 2-year pilot phase. <a href="https://www.insignia-bee.eu/">https://www.insignia-bee.eu/</a>  |
|   | 2 | C                | 16        | COLOSS CSI Pollen <a href="https://coloss.org/task-forces/c-s-i-pollen/">https://coloss.org/task-forces/c-s-i-pollen/</a> produces an international inventory of pollen diversity linked to land use, as proxy for honeybee colony vitality.   |
|   | 3 | B                | --        | Trends in pesticide reduction;<br>Trends in bans of neonicotinoid use including as seed coatings (now known to harm bird reproduction and pollinator spp)  |
|   | 3 | C                | 29        | Include insects & amphibians (not only birds & mammals)  |
|   | 3 | B<br>C           | 34+       | Trends in pollinator health: Measure of wild pollinator visitation to crops, as described in Vaissière, B., Frietas, B., Gemmill-Herren, B. 2011. Protocol to detect and assess pollination deficits in crops: a handbook for its use. FAO, Rome.  |
|   | 3 | C                | 34-<br>35 | Add Pollinator Indices noted above; Soil Biodiversity Indices as noted below   |
|   | 4 | C                | 36        | Add Pollinator Indices, including for example: EU Pollinator Monitoring Scheme – under development (Action 1 of the EU Pollinators Initiative). Once implemented it will ensure data on the status and trends of pollinator species, as well on pollination ecosystem service. Proposal to be published Sept 2020.   |

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|  | 4 | C | 36 | Lichen Biodiversity Index (LBI-bf), Freshwater Biodiversity Index (FBI-bf), and Soil Biodiversity Index (SBI-bf). In <a href="#">Battiston et al. 2014</a> .<br><a href="https://www.researchgate.net/publication/261850439_Biodiversity_indices_for_the_assessment_of_air_water_and_soil_quality_of_the_Biodiversity_Friend_certification_in_temperate_areas">https://www.researchgate.net/publication/261850439_Biodiversity_indices_for_the_assessment_of_air_water_and_soil_quality_of_the_Biodiversity_Friend_certification_in_temperate_areas</a>  |
|  | 4 | C | 36 | Additional Soil Biodiversity Spp Indices:<br>a) See examples provided in <a href="#">Wagg et al. in PNAS</a> ,<br><a href="https://www.pnas.org/content/111/14/5266">https://www.pnas.org/content/111/14/5266</a><br>b) National soil monitoring examples from 6 countries and a soil diversity index based on the Dutch Soil Quality Index are provided in <a href="#">Breure et al.</a><br><a href="https://www.google.com/url?sa=t&amp;rct=j&amp;q=&amp;esrc=s&amp;source=web&amp;cd=&amp;cad=rja&amp;uact=8&amp;ved=2ahUKEwi3r86AvpbrAhUNvp4KHW2vCMEQFjAEegQIAxAB&amp;url=http%3A%2F%2Fwww.fao.org%2Ffileadmin%2Ftemplates%2Fsoilbiodiversity%2FDownloadable_files%2F8.Breure.pdf&amp;usg=AOvVaw25Riqjr94EiWcoXecyQPZD">https://www.google.com/url?sa=t&amp;rct=j&amp;q=&amp;esrc=s&amp;source=web&amp;cd=&amp;cad=rja&amp;uact=8&amp;ved=2ahUKEwi3r86AvpbrAhUNvp4KHW2vCMEQFjAEegQIAxAB&amp;url=http%3A%2F%2Fwww.fao.org%2Ffileadmin%2Ftemplates%2Fsoilbiodiversity%2FDownloadable_files%2F8.Breure.pdf&amp;usg=AOvVaw25Riqjr94EiWcoXecyQPZD</a> |
|  | 4 | C | 36 | Develop and add Natural Enemy/Beneficial Species Index.  |
|  | 4 | C | 38 | Number of plant and animal genetic resources for food and agriculture maintained and cultivated <i>in situ</i> (e.g. in farmers' fields). As an indicator, this information is quite important and represents a data gap that needs to be addressed.   |
|  | 4 | C | 39 | Add "and seeds"  |
|  | 4 | C | 48 | TEEB ( <a href="#">The Economics of Ecosystems and Biodiversity assessment framework</a> ) provides methodology to assess how a system or area contributes to stocks and flows of critical ecosystem services. <a href="http://teebweb.org/agrifood/">http://teebweb.org/agrifood/</a>   |
|  | 4 | B | 48 | <b>Trends in areas treated with pesticides associated with harm to pollinators, natural enemies and beneficial soil organisms</b> that provide ecosystem services (pollination, natural pest control, provision of clean water and provision of healthy soil biology (creating soil high in organic matter, sequestering carbon and maintaining communities of beneficial soil bacteria)   |
|  | 4 | C | 48 | Indicators: <b>Area treated, toxicity, load and frequency of application of pesticides</b> , including but not limited to neonicotinoids and neonicotinoid-coated seeds, associated with harm to pollinators, natural enemies and soil organisms that provide ecosystem services of pollination, natural pest control, provision of clean water and maintenance of healthy soil biology respectively.<br><br><i>For more details, see indicators provided further below for Target 6.2 of Table 1, Reduction of pollution from pesticides, including explanation of why reliance on any single metric is insufficient.</i>   |
|  | 5 | C | 51 | LUCAS (Land Use and Coverage Area frame Survey) – its grassland module will provide data on the state of grasslands, which are pollinator habitats of critical importance<br><a href="https://ec.europa.eu/eurostat/web/lucas">https://ec.europa.eu/eurostat/web/lucas</a>   |
|  | 5 | C | 51 | European Monitoring of Biodiversity in Agricultural Landscapes (EMBAL): in pilot phase (until Q2 2021), once implemented it will ensure data on the state of pollinator habitats (links: <a href="#">report</a> , <a href="#">survey manual</a> )  |
|  | 5 | C | 54 | Relying on the Red List is not sufficient or appropriate. In large part only pollinating birds and mammals have been recorded on Red Lists, but these are not significant pollinators and do not adequately reflect pollinator population health, activity or contribution to biodiversity or ecosystem services.  |
|  | 5 | C | 54 | Add Pollinator Indices For example: EU Pollinator Monitoring Scheme – under development (Action 1 of the EU Pollinators Initiative). Once implemented it will ensure data on the status and trends of pollinator species, as well on pollination ecosystem service. Proposal to be published Sept 2020.  |

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|  | 5 | C | 54 | As a measure of pollinator visitation to crops, see Vaissière, B., Frietas, B., Gemmill-Herren, B. 2011. Protocol to detect and assess pollination deficits in crops: a handbook for its use. FAO, Rome  |
|  | 5 | B |    | Trends in air contaminants   |
|  | 5 | C | 55 | <p>Decrease in frequency of use/area exposed to toxic air contaminants (TAC); see the TAC list provided by the <a href="https://oehha.ca.gov/air/toxic-air-contaminants">California Office of Environmental Health Hazard Assessment; https://oehha.ca.gov/air/toxic-air-contaminants.</a>)</p> <p>The CA Air Resources Board and CA Department of Pesticide Regulation have established an Air Monitoring Network to sample ambient air for multiple pesticides in multiple communities on a regular schedule:</p> <p><a href="https://www.cdpr.ca.gov/docs/emon/airinit/air_network.htm">https://www.cdpr.ca.gov/docs/emon/airinit/air_network.htm</a> Data are available from 2011 to the present (most recent update in 2019).</p>   |
|  | 5 | C | 55 | <p>Additional data on toxic air pollutants are compiled by the U.S. National Parks Service. This program includes data on persistent organic pollutants (POPs), which are indicative of long-range transport of air contaminants.</p> <p><a href="https://www.nps.gov/im/ngpn/air-quality.htm">https://www.nps.gov/im/ngpn/air-quality.htm</a></p> <p>Relatedly, the Western Airborne Contaminants Assessment Project (WACAP) collected data from 2002-2008. The project was launched to determine the risk from airborne contaminants to ecosystems and food webs in western national parks. This six-year long project inventoried airborne contaminants in national parks by sampling air, snow, water, sediment, lichen, conifer needles, and fish. Samples were analyzed to establish the concentrations and biological effects of airborne contaminants. Atmospheric transport patterns were also assessed to identify potential sources of contaminants. The assessment methodology is relevant to monitoring trends in regulation of air quality (Target B.1) <a href="https://www.nps.gov/articles/wacap.htm">https://www.nps.gov/articles/wacap.htm</a></p>  |
|  | 5 | B | 59 | Trends in contamination of aquatic ecosystems, surface and groundwater   |
|  | 5 | C | 59 | Levels of pesticides exceeding the US EPA or EU MCL (Maximum Contamination Level) for drinking water   |
|  | 5 | C | 59 | <p>Indicator: Frequency/area of agrochemical contaminants appearing in surface water. The US Geological Survey (USGS) collects and analyzes chemical, physical, and biological properties of water, sediment and tissue samples from across the nation.</p> <p><a href="https://waterdata.usgs.gov/nwis/qw">https://waterdata.usgs.gov/nwis/qw</a></p> <p>The USGS also collects data on agricultural contaminants specifically, including nutrients and pesticides: <a href="https://www.usgs.gov/mission-areas/water-resources/science/agricultural-contaminants?qt-science_center_objects=0#qt-science_center_objects">https://www.usgs.gov/mission-areas/water-resources/science/agricultural-contaminants?qt-science_center_objects=0#qt-science_center_objects</a></p> <p>More information on USGS <a href="https://www.usgs.gov/mission-areas/water-resources/science/agricultural-contaminants?qt-science_center_objects=0#qt-science_center_objects">data and measurement tools</a> to assess the presence of agricultural contaminants in water available here:</p> <p><a href="https://www.usgs.gov/mission-areas/water-resources/science/agricultural-contaminants?qt-science_center_objects=0#qt-science_center_objects">https://www.usgs.gov/mission-areas/water-resources/science/agricultural-contaminants?qt-science_center_objects=0#qt-science_center_objects</a></p> |
|  | 5 | C | 59 | Reduction and elimination of use of known groundwater contaminants (since contaminants take a long time to reach groundwater, the indicator is not “presence of groundwater contaminants” but rather “reduction in and elimination of use” of such contaminants.   |
|  | 5 | C | 59 | <p>The <a href="https://pesticerisk.org/about">Pesticide Risk Tool</a> assesses pesticide products for impacts on aquatic ecosystems (as well as birds, earthworms, small mammals, pollinators and human health).</p> <p>Managed by the IPM Institute of North America, with support from the Integrated Plant Protection Center of Oregon State University, US EPA, USDA-NRCS.</p> <p><a href="https://pesticerisk.org/about">https://pesticerisk.org/about</a></p>   |

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|   | 5      | C | 59 | Pesticides exceeding levels of concern for aquatic organisms in surface water (US EPA).  |
|   | 5      | C | 59 | Frequency of use/area treated with <b>Highly Hazardous Pesticides</b> . The 2019 updated list of HHPs is provided <a href="https://issuu.com/pan-uk/docs/highly_hazardous_pesticides_march?e=28041656/62901883">here</a> . It delineates methodologies for measuring presence and persistence of biodiversity-harming pesticides in water, sediment and soil. The PAN HHP list is based on classifications by recognised authorities and synthesizes information from WHO, US EPA, the EU Commission and the Pesticide Property Database. <a href="https://issuu.com/pan-uk/docs/highly_hazardous_pesticides_march?e=28041656/62901883">https://issuu.com/pan-uk/docs/highly_hazardous_pesticides_march?e=28041656/62901883</a>  |
|   | 6      | C | 65 | Food from biodiversity: See relevant indicators in the Agrobiodiversity Index (Bioversity International. 2018. The Agrobiodiversity Index: Methodology Report v.1.0. Bioversity International, Rome, Italy )   |
|   |        |   |    |  |
|   |        |   |    | <b>TABLE 2: Interim formulation of 2030 targets, components, monitoring elements &amp; indicators</b>  |
| 2 | 1<br>5 |   |    | The following proposed components, monitoring elements and indicators are in regards to <b>Target 6</b> : “By 2030, reduce pollution from all sources... to levels not harmful to biodiversity and ecosystem functions and human health.”  |
|   | 1<br>5 | A | 86 | Please note that the word “pesticides” refers to insecticides, herbicides, fungicides, miticides, rodenticides and all other biocides. It is <i>not</i> synonymous with “insecticides” as implied here and in the following rows which incorrectly distinguish “herbicides” from “pesticides”. Herbicides are one among many types of pesticides.  |
|   | 1<br>5 | A | 86 | <i>Component 6.2 for Target 6 should be replaced with these components (sub-targets):</i> <ul style="list-style-type: none"> <li>• Phase-out of chemical pesticides (e.g. herbicides, insecticides, fungicides etc.)</li> <li>• Phase-in of organic and agroecological practices replacing chemical-intensive production</li> <li>• Full phase out of highly hazardous pesticides by 2030</li> </ul>   |
|   | 1<br>5 | B | 86 | Monitoring elements for Target 6 (in line with revised components noted above) <ul style="list-style-type: none"> <li>• Trends towards phasing out chemical herbicides use and associated harm</li> <li>• Trends towards phasing out chemical insecticides use and associated harm</li> <li>• Trends towards phasing out chemical fungicides use and associated harm</li> <li>• Trends towards phasing out other biocides use and associated harm</li> <li>• Trends towards phasing in organic and agroecological practices</li> <li>• Trends in reducing the <b>toxicity of pesticides</b> used, with respect to: biodiversity, sensitive species, terrestrial (above &amp; below ground) and aquatic ecosystem health, ecosystem services (e.g. pollination, natural pest control, provision of clean drinking water and beneficial soil communities, etc.) and human health</li> <li>• Trends in reduction of <b>pesticide load, treatment area taking into account routes of environmental dispersion, and frequency</b> (as explained further below, it is insufficient to monitor trends in just one category – monitoring “volume” alone for example does not indicate whether progress in reducing threats to biodiversity are being achieved, because a lower volume could accompany a higher toxicity of chemical. <b>Therefore trends across multiple categories must be monitored simultaneously using multiple metrics, and results assessed together.</b>)</li> <li>• Trends in pesticide sales and import data as proxy where pesticide use data are unavailable</li> </ul> |
|   | 1<br>5 | B | 86 | Monitoring element 6.2 as currently written should be revised. The term “excess” in “monitoring element” (as well as in the “goal”) should be deleted as inaccurate and  |

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|        |   |           | <p>unscientific (“excess” implies there is an appropriate level of pesticide use with respect to biodiversity, ecosystem and human health, whereas that has nowhere ever been established). Furthermore, “pollution” as a term is imprecise.</p> <p>The revised monitoring element should read: “Trends in reducing <b>pesticide load, treatment area, frequency of application and toxicity</b> with respect to: biodiversity, sensitive species, terrestrial (above &amp; below ground) and aquatic ecosystem health, ecosystem services (e.g. pollination, natural pest control, provision of clean drinking water and beneficial soil communities, etc.) and human health.” - <i>as noted and with additions above. Alternatively, for ease of understanding, would be better to separate into several monitoring elements as described above.</i></p>   |
| 1<br>5 | B | 86-<br>88 | <p>As Row 87 currently specifies herbicides (which are a type of pesticide as explained above), then Row 86 would more precisely refer to “Insecticides” rather than the all-inclusive term “pesticides”. This will enable the disaggregation of data by type of pesticide (herbicide, insecticide, fungicide, etc.), which we agree is helpful in getting more accurate baseline data.</p> <p>However, we recommend that the list of monitoring elements currently provided in Rows 86-88 (which are vague and insufficient) be replaced with the monitoring elements and indicators provided below which are more precise and useful.</p>  |
| 1<br>5 | C | 86        | <p>Indicators used to measure progress towards phaseout of chemical pesticides AND reduction in pesticide toxicity and hazard should include a <b>combination</b> of the following metrics, because single metrics fail to capture actual hazard or harm.</p> <p>The explanation is provided here, with recommended indicators provided immediately following.</p> <ul style="list-style-type: none"> <li>• <i>Area treated with pesticides</i>; easily measured but note that measuring “area treated” <i>alone</i> fails to take into account changes in planted area of crops and may appear to show reductions in pesticide use when, in reality, it is the total planted area that has decreased.</li> <li>• <i>Reduction of toxicity of pesticides used, singly and/or in combination, and their hazard</i> e.g. to biodiversity, terrestrial – above and below-ground - and aquatic ecosystem health, ecosystem services including pollination, natural pest control, etc. and sensitive species. (This is an important indicator but note that evaluating toxicity of a single ingredient <i>alone</i> is insufficient if, on the other hand, pesticide load, area treated and treatment dose or frequency increase, and/or if pesticides are applied in mixtures, thereby potentially creating synergistic effects, while intensifying or extensifying exposure.)</li> <li>• <i>Treatment Frequency</i> (cf <a href="https://ec.europa.eu/food/sites/food/files/plant/docs/pesticides_sup_nap_fra-ecophyto-2_en.pdf">France EcoPhyto Plan II</a>) – an important indicator but note that measuring “number of times treated” <i>alone</i> does not detail what dose of an active substance has been applied or its toxicity. See <a href="https://ec.europa.eu/food/sites/food/files/plant/docs/pesticides_sup_nap_fra-ecophyto-2_en.pdf">https://ec.europa.eu/food/sites/food/files/plant/docs/pesticides_sup_nap_fra-ecophyto-2_en.pdf</a></li> <li>• <i>Pesticide Load</i> (cf <a href="https://www.sciencedirect.com/science/article/abs/pii/S0264837717306002">Denmark’s approach</a>), see <a href="https://www.sciencedirect.com/science/article/abs/pii/S0264837717306002">https://www.sciencedirect.com/science/article/abs/pii/S0264837717306002</a></li> <li>• <i>Pesticide use in sensitive sites and public areas</i> (included in the European Union’s <a href="https://ec.europa.eu/info/strategy/priorities-2019-2024/european-green-">Biodiversity Strategy for 2030</a>; see <a href="https://ec.europa.eu/info/strategy/priorities-2019-2024/european-green-">https://ec.europa.eu/info/strategy/priorities-2019-2024/european-green-</a></li> </ul> |

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|        |   |    |  | <a href="#">deal/actions-being-taken-eu/eu-biodiversity-strategy-2030_en</a> )  |
|        |   |    |  | <b>The following series of indicators are to be used together to provide a more complete and accurate assessment of progress towards Target 6.2:</b>  |
| 1<br>5 | C | 86 |  | <ul style="list-style-type: none"> <li>• “Area treated” with pesticides, broken down by:             <ul style="list-style-type: none"> <li>○ Type: insecticides, herbicides, fungicides, other biocides</li> <li>○ pesticides with high aquatic toxicity</li> <li>○ pesticides with high toxicity for beneficial organisms including bees                   <ul style="list-style-type: none"> <li>▪ Disaggregate data on neonicotinoids</li> <li>▪ Include area planted to seeds treated with neonicotinoids</li> </ul> </li> <li>○ pesticides prone to leaching into water, volatilization or aerial drift</li> <li>○ Refer to Commission Implementing Regulation (EU) No 485/2013 of 24 May 2013</li> <li>○ pesticides with high toxicity for birds, fish, amphibians, mammals</li> </ul> </li> </ul>   |
| 1<br>5 | C | 86 |  | <ul style="list-style-type: none"> <li>• Treatment Frequency (cf <a href="#">France EcoPhyto Plan II</a>) broken down by             <ul style="list-style-type: none"> <li>○ Type: insecticides, herbicides, fungicides, other biocides</li> <li>○ pesticides with high aquatic toxicity</li> <li>○ pesticides with high toxicity for beneficial organisms including bees</li> <li>○ pesticides with high toxicity for birds, fish, amphibians and mammals</li> <li>○ pesticides prone to leaching into water, volatilization or aerial drift</li> </ul> </li> </ul>   |
| 1<br>5 | C | 86 |  | <ul style="list-style-type: none"> <li>• Volume/weight of pesticides applied broken down by             <ul style="list-style-type: none"> <li>○ Type: insecticides, herbicides, fungicides, other biocides</li> <li>○ pesticides with high aquatic toxicity</li> <li>○ pesticides with high toxicity for beneficial organisms including bees</li> <li>○ pesticides with high toxicity for birds, fish, amphibians and mammals</li> <li>○ pesticides prone to leaching into water, volatilization or aerial drift</li> </ul> </li> </ul> <p><i>Note that “weight” <b>alone</b> is an insufficient and misleading metric, since pesticides are becoming increasingly toxic, meaning that a much smaller amount of chemical is now required to do the same job (modern neonicotinoids are 10,000 times more potent than DDT).</i></p>   |
| 1<br>5 | C | 86 |  | <p>Indicators to measure reduction in use of highly hazardous pesticides (HHPs)*</p> <ul style="list-style-type: none"> <li>○ Number of HHPs in use</li> <li>○ Area treated with HHPs</li> <li>○ Treatment Frequency</li> <li>○ Volume/weight</li> <li>○ # reported incidences of volatilization, aerial drift or contamination of water</li> </ul> <p>References to identify HHPs:</p> <ul style="list-style-type: none"> <li>• PAN Updated List of HHPs (2019): <a href="https://issuu.com/pan-uk/docs/highly_hazardous_pesticides_-march?e=28041656/62901883">https://issuu.com/pan-uk/docs/highly_hazardous_pesticides_-march?e=28041656/62901883</a></li> <li>• UNEP on HHPs: <a href="https://www.unenvironment.org/explore-topics/chemicals-waste/what-we-do/emerging-issues/highly-hazardous-pesticides-hhps">https://www.unenvironment.org/explore-topics/chemicals-waste/what-we-do/emerging-issues/highly-hazardous-pesticides-hhps</a></li> </ul> |

|        |   |           |  |   |
|--------|---|-----------|--|---|
|        |   |           |  | <ul style="list-style-type: none"> <li>• UNEP/SAICM page on HHPs:<br/><a href="http://www.saicm.org/EmergingPolicyIssues/Highlynbsp;Hazardousnbsp;Pesticides/tabid/5479/language/en-US/Default.aspx">http://www.saicm.org/EmergingPolicyIssues/Highlynbsp;Hazardousnbsp;Pesticides/tabid/5479/language/en-US/Default.aspx</a></li> <li>• Consider also impacts on aquatic algae, aquatic invertebrates, fish (chronic), small mammals, avian (acute &amp; reproductive); beneficials (earthworms, pollinators, natural enemies). See examples in Jepson et al, 2020:<br/><a href="https://www.thelancet.com/journals/lanplh/article/PIIS2542-5196(19)30266-9/fulltext">https://www.thelancet.com/journals/lanplh/article/PIIS2542-5196(19)30266-9/fulltext</a></li> </ul>   |
| 1<br>5 | C | 86        |  | <p>Indicators for measuring reduction in <i>Pesticide Load</i> (Danish approach)</p> <ul style="list-style-type: none"> <li>• Denmark uses three sub-indicators for human health, ecotoxicology and environmental fate.</li> <li>• These can be tailored to focus more on biodiversity;</li> <li>• More data is needed for this, as it is not readily available in many countries.</li> </ul>   |
| 1<br>5 | C | 86        |  | <p><i>Propose use of pesticide sales and import data as a useful proxy indicator.</i></p> <p>Note that according to EU law on pesticide statistics (regulation 1185/2009) it is foreseen that Member States send use statistics AND sale statistics to European Commission each year. Sale numbers are collected by Eurostat and presented <a href="#">here</a>, but member states may need to collect these statistics from farmers directly and data gaps need to be addressed. In addition, significant data gaps exist regarding illegal sales and import of pesticides; anecdotal and case study data exist but data gaps at national, regional and global levels will also need to be addressed.</p>  |
| 1<br>5 | C | 81-<br>86 |  | <p>The US Geological Survey (USGS) collects data on agricultural contaminants, including <i>nutrients and pesticides</i>: <a href="https://www.usgs.gov/mission-areas/water-resources/science/agricultural-contaminants?qt-science_center_objects=0#qt-science_center_objects">https://www.usgs.gov/mission-areas/water-resources/science/agricultural-contaminants?qt-science_center_objects=0#qt-science_center_objects</a></p> <p>From the USGS website: "The <a href="#">US Geological Survey's Pesticide National Synthesis project</a> provides estimates of agricultural pesticide use in the conterminous United States for numerous pesticides. The tables report agricultural pesticide use at the county level and are based on farm surveys of pesticide use and estimates of harvested crop acres. The maps show agricultural pesticide use on a finer scale and are created by allocating the county-level estimates to agricultural land within each county. A graph accompanies each map and shows annual national use by major crop for the mapped pesticide for each year. <b>These pesticide-use estimates are suitable for evaluating national and regional patterns and trends of annual pesticide use.</b> "<a href="https://water.usgs.gov/nawqa/pnsp/usage/maps/">https://water.usgs.gov/nawqa/pnsp/usage/maps/</a></p> <p>Note: These use estimates can be helpful in assessing progress towards desired targets when used, <b>not alone, but in combination with</b> the other indicators identified above (area, toxicity, load, frequency, etc.).</p> |
| 1<br>5 | C | 86        |  | <p>Indicators to measure progress towards full phase-in of organic and agroecological production replacing pesticide-intensive agriculture should include:</p> <ul style="list-style-type: none"> <li>• Land area (hectares per crop or percentages) under organic, agroecological or pesticide-free production.</li> <li>• Land area devoted to pollinator-friendly habitat for forage and nesting, and habitat encouraging populations of natural enemies and other beneficial</li> </ul>   |

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|--|--|--|--|--|
|  |  |  |  | <p>organisms</p> <ul style="list-style-type: none"> <li>• Land area in transition from conventional systems to agroecology, i.e. increased agricultural and wild animal and plant diversity, use of vegetation covers, increased complexity of crop rotations, increased soil organic matter, etc.</li> <li>• These data would be useful although data gaps will need to be filled.</li> </ul> |
|  |  |  |  | Additional rows can be added to this table by selecting “Table” followed by “insert” and “rows below”  |
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*Comments should be sent by e-mail to [secretariat@cbd.int](mailto:secretariat@cbd.int) no later than 15 August 2020.*