

Biomass Workshop Series 2020/21: REDII  
Implementation and Beyond

# Workshop 3: How to ensure that using biomass maintains and protects biodiversity

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## Executive Summary

This was the third workshop of a series held in quarter 4 of 2020 and quarter 1 of 2021, supported by the European Technology and Innovation Platform Bioenergy (ETIP Bioenergy), the International Energy Agency's Bioenergy Technology Collaboration Programme (IEA Bioenergy) and The Sustainable Biomass Program (SBP).

The workshop brought together 6 speakers and 133 participants from diverse backgrounds to discuss how biomass producers and the wider sector can contribute towards developing SBP's biodiversity objectives.

The presentations discussed a variety of topics including the role of biomass and forestry for EU's Biodiversity Strategy for 2030; the impacts of the wood pellet industry on biodiversity; the importance of interlinking national and local indicators for biodiversity; methodologies for monitoring and analysing biodiversity at various scales; the relevance of the High Conservation Value (HCV) approach for voluntary biodiversity commitments; and standards for sustainable biomass production and how these may adapt to different biodiversity and ecological needs.

The workshop stimulated debate over the responsibility for sustainable forest management, and what role the biomass producer should play in promoting and protecting biodiversity. This dialogue revealed both areas of consensus and disagreement amongst participants.

### Areas of consensus

Overall, consensus was reached regarding the importance of protecting forests, with participants recognising the diverse value that forests hold, and the need to find collaborative solutions in the biomass sector to preserve forest biodiversity. Participants overwhelmingly agreed that all forest users should be subject to biodiversity criteria. 87% of participants agreed that biomass should be subject to the same biodiversity criteria as other forest products, with participants believing that a specific criterion just for biomass producers would be complex to implement and monitor. The group largely agreed the need to take a risk-based approach to assessing and addressing biodiversity risks, focusing effort on the highest risks to species and/or habitats, with much support for the HCV approach.

The potential of harnessing data for biodiversity monitoring was a recurring theme in the presentation and discussion sections of the workshop. Various participants suggested that a data-driven approach would help standards such as SBP better incorporate their sustainability safeguards. Participants agreed that verifiable data is essential for monitoring progress and compliance with any biodiversity standard, but it was unclear who should be responsible for the collection and analysis of the primary data needed for monitoring and assessment. North America's NatureServe<sup>1</sup> network was discussed as an exemplar. Whilst not all regions have such datasets, it was felt that, through data collection, remote sensing and ecological computation modelling, data are increasingly becoming available. The point was made that,

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<sup>1</sup> <https://www.natureserve.org/>

whilst technology is making data increasingly available and useful for monitoring biodiversity, this potential was not yet being fully harnessed.

### **Areas where consensus was not reached**

Participants expressed conflicting points of view on various topics. Approximately 40% of participants believed that a biomass standard should, as a minimum, support a 'No harm' approach to biodiversity, with a further 40% believing forest owners should be expected to deliver benefits for biodiversity.

Participants were attentive to the importance of context for biodiversity issues. Diverse landscapes, geophysical conditions, production needs, and other factors, influence priorities for forest management and influence what are deemed to be appropriate biodiversity safeguards. Approximately 35% believed that a "local" approach to biodiversity criteria would be optimal, with 30% supporting a more high-level "general" (e.g. national, regional or landscape) approach to biodiversity requirements. Many felt biodiversity should be monitored at multiple scales, and could be accommodated within a high level "principles approach" to biodiversity requirements.

Appropriate forest residue removal and thinnings and their impacts for biodiversity (including how this should be addressed in relevant standards and criteria) was another theme for which there was a range of views.

### **Areas for further consideration**

There were a number of topics that would benefit from further consideration. SBP may like to consider, as part of its standards revision or otherwise, who should have responsibility for data collection and assessment.

A number of participants felt the emerging initiatives to 'monetise' biodiversity and carbon values of forests could create new incentives to protect forests, with consequences for biomass and harvesting practices. This could be a topic to monitor and further investigate.

# 1 Introduction, background and structure of the workshop

The impending implementation of REDII by Member States, and the recently launched review of REDII, have raised the profile of sustainable woody biomass in achieving climate goals. The Biomass Workshop Series 2020-21 invited key stakeholders to contribute to the dialogue on how we should define sustainable biomass, and to discuss what REDII implementation will look like in practice for the biomass industry.

The latest Global Biodiversity Outlook report asserts that UN members are set to fail all 20 Aichi Biodiversity Targets outlined in the Strategic Plan for Biodiversity 2011-2020<sup>2</sup>. Similarly, the EU Biodiversity Strategy for 2030<sup>3</sup> argues that, following a decade of insufficient progress, significant action must be taken if we are to put biodiversity on a path to recovery.

Despite biodiversity safeguards being integral to REDII and all voluntary certification schemes, questions remain whether these criteria are sufficient, and can be implemented effectively. 'How to ensure that using biomass maintains and protects biodiversity', the third workshop of the Biomass Workshop Series 2020-21, brought together diverse speakers and participants to discuss how those working directly or indirectly with biomass production can help the industry contribute towards the global biodiversity agenda.

The three hour workshop was structured as such:

1. Presentations from six speakers
2. Q&A with speakers
3. 25-minute breakout sessions, structured around 4 questions/statements
4. Discussion of outcomes from breakout sessions
5. Concluding remarks.

Throughout the workshop, participants were encouraged to interact with speakers and fellow attendees using the HowSpace platform. This allowed participants to pose questions to speakers, who were able to respond to these questions using the platform's comment box. A Q&A session allowed speakers to expand on previous answers, or respond to any other questions received via HowSpace.

The 25-minute breakout sessions were structured around the following four questions:

1. Should any standard/regulation in general on bioenergy require forest owners to...
  - A. Only avoid harming biodiversity
  - B. Deliver benefits
  - C. Other
2. Should biodiversity requirements for woody biomass feedstocks for energy be different to those for other forest products?
  - A. Yes, different/additional requirements

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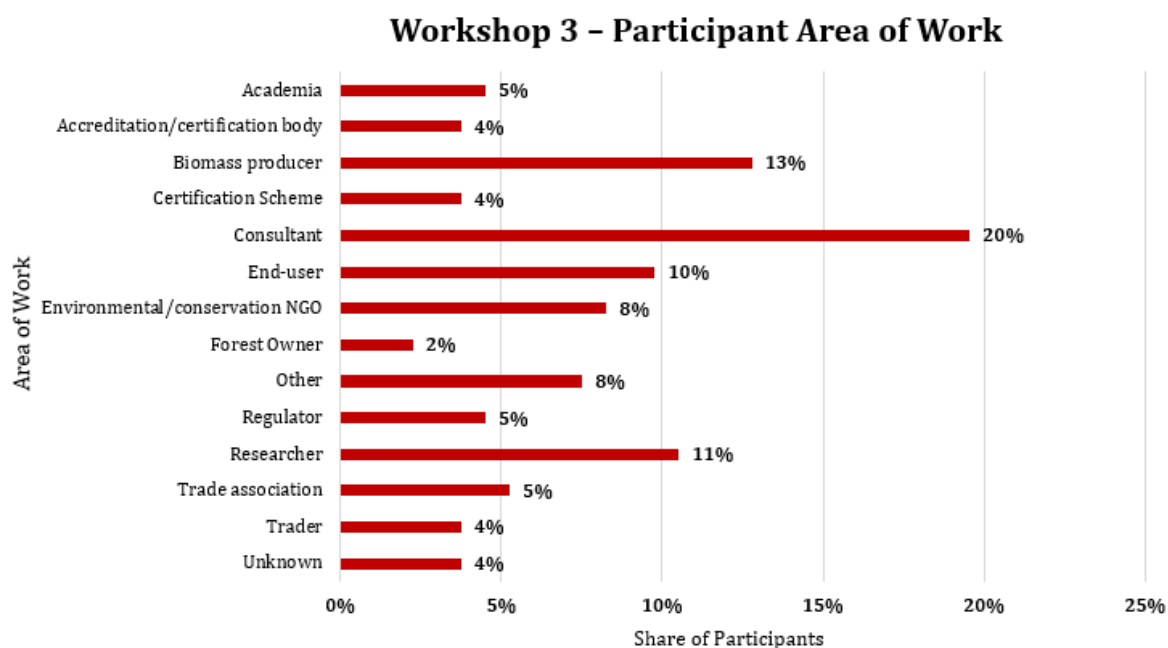
<sup>2</sup> <https://www.cbd.int/sp/>

<sup>3</sup> [https://ec.europa.eu/environment/strategy/biodiversity-strategy-2030\\_en](https://ec.europa.eu/environment/strategy/biodiversity-strategy-2030_en)

- B. No, same requirements
  - C. Other, please comment
3. When it comes to biodiversity standards and indicators: how to handle the trade-offs between capturing the complexity of biodiversity and the feasibility of implementation and monitoring?
  4. How could standards (such as SBP) better incorporate sustainability safeguards?

Participants were invited to share the outcomes of the individual breakout groups, discussing areas of broad consensus or disagreement, and topics that required further research. This was followed by concluding remarks which drew together the key findings of the workshop.

In total 133 participants attended the workshop, representing a wide constituency of industries and interests. Approximately 34% of participants were from the biomass supply chain (forest owners, biomass producers, traders, end users). Researchers, members of academia, and NGO representatives constituted a further 25%. Regulators and representatives of certification schemes formed around 13% of participants. Consultants made up 20% (including SBP staff). See figure 1 for the full breakdown of participants.



**Figure 1: Participant area of Work, Workshop 3**

## 2 Presenters

Six presentations were given during the workshop. All presentations are available to view on YouTube, [here](#).

### **Dan Burgar Kuželički, DG AGRI**

Dan Burgar Kuželički works as a Policy Officer for the Directorate-General for Agriculture and Rural Development in the Environment, Forestry and Climate Change unit of the European Commission.

The speaker introduced the EU's Biodiversity Strategy for 2030, considering the importance of enhanced forest management to meeting these goals. Expanding the EU's forest area and enhancing its role for conservation and biodiversity is of high importance for the European Commission, as is the need for forest management plans that balance the delivery of goods and services with sustainability protections. Of the 46 criteria and indicators developed via the Forest Europe process, 9 are associated with biodiversity, although monitoring biodiversity remains a challenge. The EU has identified a recent increase in wood harvesting for biomass and seeks to understand the role biomass can play in achieving biodiversity objectives. As part of its new biodiversity agenda, the EU is currently researching the biodiversity risks of biomass, with findings due to be published at the end of 2021.

### **Dr. Gillian Petrokofsky, University of Oxford**

Dr. Gillian Petrokofsky is a Research associate at the Oxford Long-term Ecology Lab in the Department of Zoology at the University of Oxford. Her research focuses on supporting evidence-based decision making in forestry and land-use.

The speaker presented the findings of a study entitled 'Does pellet production in South-eastern USA harm biodiversity?'. The research consisted of a systematic evaluation of studies assessing the impacts of forest management for biomass and the extraction of wood and wood residues on terrestrial and freshwater species. 69% of the 211 studies analysed revealed no negative impacts on biodiversity. Of the 31% that did reveal negative impacts, land invertebrates were most frequently affected, yet different taxa were affected by different management practices in different ways. Negative impacts were most frequently reported in short-term studies, shortly after interventions. Given the dearth of long-term studies, and the difficulty of extrapolating short-term studies to landscape scale, the speaker suggested that more comprehensive research is required if policy decisions are to be informed by relevant research. A key challenge is how biodiversity measured at landscape level could be integrated into decision making for the sector.

[LINK TO PRESENTATION \(COMING SOON\)](#)

### **Vivian Kvist Johannsen, University of Copenhagen**

Vivian Kvist Johannsen is Senior Researcher and Head of the Division for Forest, Nature and Biomass at the University of Copenhagen. Her research focuses on the condition and

development of trees and forests, including the growth and quality of trees, vegetation dynamics, and the relationships between forests ecosystem services and functions.<sup>4</sup>

The speaker gave an overview of the indicators used for the reporting and monitoring a range of forest-criteria including forest resources and carbon cycles, forest health and vitality, forest productive functions, and biological diversity. She noted the changes in forest use across the world, changing technologies to harvest and monitor forests. The importance of deploying multiple indicators at multiple scales, integrating diverse data sources both in situ and remote, was emphasised. National reporting and certification frameworks can be useful assets for comparing sustainable forest management. Nonetheless, the speaker stressed the importance that sampling protocols and definitions remaining consistent, and the importance of transparent and reproducible data and research.

[LINK TO PRESENTATION \(COMING SOON\)](#)

## **Healy Hamilton, NatureServe**

Healy Hamilton is Chief Scientist at NatureServe, a non-profit biodiversity information network focused on management and conservation of at-risk species and ecosystems. The organisation provides wildlife conservation-related data, tools, and services to private and government clients, partner organisations, and the public.<sup>5</sup>

The speaker introduced methodologies for biodiversity monitoring at the Species, Ecosystem, Landscape, and Regional levels. NatureServe data understands the presence/absence of species (reviewing of 80,000 taxa) and habitats/ecosystems, by combining observation data, monitoring data, ecological modelling, advances in computation, remote sensing to develop a suite of metrics that can help to understand the impacts of managed forests. Their data includes an assessment of the USA's 2200 most imperilled species, as well as fine spatial resolution maps for confirmed and predicted habitats. At the ecosystem level, the organisation has assessed 324 forested ecological systems, to determine the reduction in distribution, degradation, the disruption of biotic processes, and probability of ecosystem collapse in 100 years. Combining satellite imagery with models and on ground observations has proved an effective way to measure landscape condition and spatial patterns. Hence, existing data and modelling capacities provide great potential for the mapping of biodiversity at a variety of scales. It will be possible to combine these kinds of ecological data and computational modelling to create a dashboard to make real time assessments of biodiversity.

[LINK TO PRESENTATION \(COMING SOON\)](#)

## **Olivia Scholtz, HCV Network**

Olivia Scholtz is Senior Project Manager at the High Conservation Value Network. The HCV Network is a member-based organisation striving to protect at-risk forest areas and

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<sup>4</sup> [Vivian Kvist Johannsen - Section for Forest, Nature and Biomass \(ku.dk\)](#)

<sup>5</sup> <https://www.wm.edu/offices/iic/about/advisory-board/healy-hamilton.php>

communities by increasing the uptake and implementation of the High Conservation Value Approach.

Presentation Summary: The speaker introduced the concept of High Conservation Value (HCV) Approach, the three-step tool for identifying and conserving six<sup>6</sup> categories of environmental, social, and cultural values in commodity production landscapes. Species diversity, and ecosystems and habitats, constitute two of the six HCV categories. Over 20 sustainability certification standards utilise the HCV approach (including FSC, RSPO and Rainforest Alliance) and is widely used in due diligence procedures, sustainable sourcing, land use planning, and zero deforestation commitments and policy. It also overlaps with four criteria of the SBP standard, including Criteria 2.1 demanding that HCVs are identified, and risks addressed, and Criteria 2.5 on indigenous people and local communities. The approach combines a landscape screening, with management unit assessment, and balances probability of risk, and threat of occurrence, to identify high risk areas to focus on. This makes it particularly applicable for SBP when carrying out regional risk assessments and supply base evaluations. The approach can help biomass producers screen for high and low risk issues and areas. The speaker promoted HCV's approach for helping to understand how to influence change at a landscape level, though a consistent, efficient, and robust approach to identification and mitigation of forest-based risks, and through encouraging cooperation between stakeholders at landscape level.

[LINK TO PRESENTATION \(COMING SOON\)](#)

## **Adam Harrison, Chair of Working Group A**

Adam Harrison is a consultant with expertise in developing multi-stakeholder initiatives, sustainability, certification, international trade, development, and conservation. He is currently the Chair of SBP's Working Group A, responsible for developing Standards 1 and 2, covering feedstock compliance and verification of compliant feedstock.<sup>7</sup>

The speaker addressed the inclusion of biodiversity-related commitments in SBP Standards 1 and 2. The standard contains three main criteria which address biodiversity: Criterion 2.1, requiring that 'Features and species of outstanding or exception value are identified and produced'; Criterion 2.2, requiring that 'Ecosystem function is assessed and maintained'; and Criterion 2.4, requiring that 'Forest ecosystem health and vitality is maintained'. SBP Standards 1 and 2 are currently undergoing a revision process, including a sub-group for Natural Capital and Biodiversity. According to the speaker, several considerations for biodiversity have emerged, including suggestions to formalise the HCV approach and make sure that monitoring is embedded at the indicator level, to consolidate biodiversity across the standard, to use HCV screening within Supply Base Evaluation and Regional Risk Assessments, and to explore how the standard can go beyond just avoiding harm and deliver

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<sup>6</sup> Species diversity, landscape level eco systems, ecosystems and habitats, ecosystems services, community needs, cultural values

<sup>7</sup> [Working Group A | Sustainable Biomass Program \(sbp-cert.org\)](#)



benefits at landscape scale. The speaker is keen to look at whether/how the HCV screening tool might help SBP in undertaking supply base evaluations and regional risk assessments.

[LINK TO PRESENTATION](#)

### 3 Conclusions

‘Workshop 3 – How to ensure that using biomass maintains and protects biodiversity’, stimulated debate over the responsibility for sustainable forest management, and potential ways to promote and protect biodiversity in the bioenergy sector. The discussion revealed various areas of consensus and disagreement, and highlighted topics for future consideration.

Participants showed broad consensus on the need to protect forestry, acknowledging the need to find collaborative solutions to preserve forest biodiversity. There was consensus that biodiversity requirements should be the same for woody biomass feedstocks as for other products, with participants fearing it would be too challenging to implement and monitor biomass-specific requirements. Participants agreed on the importance of data for monitoring biodiversity progress but agreed that its potential had not yet been fully harnessed by those working in the biomass industry.

There were diverging opinions on who should be responsible for data collection, although the idea of a centralised organisation for data collection and assessment was generally supported. Participants were divided as to whether standards for bioenergy should ask forest owners to deliver benefits or only avoid harming diversity. The scale at which relevant criteria should be applicable was equally divisive. The extent of forest residue removal, and the appropriate use of thinnings, were also topics with strong views but no clear consensus.

Biodiversity understanding and best practice is well established but in development, with ongoing improvements in metrics, assessments and reporting. The group was unclear who should have responsibility for biodiversity data collection and assessment, and this could be a topic for SBP to consider in the future.

Finally, there is emerging activity from banks and others to ‘monetise’ the biodiversity and carbon values of forests, with potentially significant impacts for forest harvesting. SBP may like to monitor this and consider the potential of market-based incentives for driving biodiversity practices.

[LINK TO PRESENTATION \(COMING SOON\)](#)

## 4 Summary of discussions which led to the conclusions

### Areas of consensus

#### ‘Do no harm’ to biodiversity

A key theme brought out in all discussions was that biodiversity is important and complex, and that best practice and understanding are well established, albeit still in development.

Across the workshop, participants showed broad consensus on the need to protect forests, that as a minimum, SBP standard should be based on a principle of 'doing no harm' to biodiversity. Participants from diverse industries, with varying relations to biomass production, acknowledged the different forms of biodiversity value that the forest holds and the need to find collaborative solutions to preserve habitats and forest biodiversity. There was less consensus on going beyond the 'do no harm' principle (see below).

### **Biodiversity requirements should be the same for woody biomass feedstocks as for other forest products**

The overwhelming majority of participants shared the belief that sustainability criteria for biodiversity should be applied evenly and universally, irrespective of forest product. Asked whether biodiversity requirements for woody biomass feedstocks for energy should be different from those for other forest products, 87% of participants responded 'No'.

One of the common reasons cited in support of a common biodiversity requirement for all forest products (including biomass), were the difficulties in determining the final use of forest material at the moment of harvesting. Participants argued that it is important to protect the forest and biodiversity regardless of what is coming out of it. One attendee declaring that "the forest is blind to the end use of the product extracted".

For some, the idea of evaluating biomass sustainability differently to other forest products is an ongoing concern, with one participant claiming that "from a biodiversity perspective... the bioenergy producer is often held to a much higher standard than are others who extract fibres from the forests for other uses".

There was a repeated theme that it would be challenging for Biomass Producers (BPs) to comply with additional biodiversity requirements when BPs are not typically the landowner, and BPs often do not typically take harvesting decisions.

### **Data is important, it is improving and increasingly available, but not yet fully harnessed**

A common theme of the presentations was the importance of data for the effective monitoring and assessment of biodiversity and forest health, and that best practice and understanding is established but still developing. There was no consensus on precisely which biodiversity values to collect data for, or which metrics/indicators to use, though there was a general agreement that these were often context specific and dependent on local environmental conditions and regulations. Nevertheless, good practice exists, and in many regions different forms of data exist which can be useful to inform a regional risk assessment of biodiversity. There was some consensus that data is increasingly available and useful for monitoring biodiversity, but that this potential was not yet being fully harnessed.

Several of the presenters and participants referred to highly developed datasets, informed by direct data collection, remote monitoring and computational modelling advancement. A key challenge for biomass producers seems to be getting access to this data. In North America, the NatureServe network has considerable data that could help SPB's biomass producers and

landowners undertake biodiversity assessments. This in turn raised the question of who should have responsibility for collecting this data in other locations – whether the local/national government, SBP, forest owners, or others. For other regions and jurisdictions, even though these technologies and techniques exist, the data is yet to be collected.

Responding to Question 3, ‘How to handle the trade-offs between capturing the complexity of biodiversity and the feasibility of implementation and monitoring?’, one participant claimed that “finding the balance must be data based”. Others felt the HCV approach offered a balanced risk-based approach.

Responding to Question 4, ‘How could standards (such as SBP) better incorporate sustainability safeguards?’, there was some support for an approach that prioritised the risks with biggest impacts. One participant suggested that a “data driven approach” would help SBP to “focus on important safeguards, like no conversion of forests, which could be very well monitored and implemented”.

More than one respondent expressed frustration that sometimes the arguments that are made against bioenergy are more based on emotion and less on data. There was agreement amongst some participants that “we have a long way to go to take advantage of data and tools that already exist for this purpose”.

## Areas where consensus was not reached

### Forest owners should deliver biodiversity benefits

No consensus was reached for Question 1, asking whether standards for bioenergy should ask forest owners to deliver benefits or only avoid harming diversity. 42% believed a ‘No Harm’ principle was sufficient, whilst 38% of respondents believed that forest owners should go beyond no harm and ‘Deliver benefits’, whilst 21% responded ‘Other’.

It was felt that a ‘no harm’ principle was generally accepted as the baseline expectation. One participant believed that standards should “require to avoid harm” and “encourage to deliver benefits”, with another saying they should “always avoid” but “deliver benefits where possible”, with several regarding the “delivery additional benefits” as a “nice to have” outcome. However, some believed that the delivery of benefits should be included within the Standard, with one participant expressing the hope that “the standard could identify some basic benefits that can be expected to be delivered”.

Some suggested that for some regions it is easier to demonstrate benefits, so standards should take account of local conditions, with the expectations for a forest owner being context specific. One respondent suggested that for areas with particularly vulnerable species or habitats, benefits may be particularly appropriate and relatively easy to demonstrate. Another cited geophysical conditions, suggesting that the biodiversity targets and expectations for forest owners in barren or low-quality land should be different to those in lush forest areas.

Another participant brought into question the scale of the criteria, and how this may impact a standard’s expectations, suggesting that most European forest owners are “too small” to deliver ecosystem benefits.

One breakout group briefly discussed the role of regulation and certification in ensuring no harm, but for incentives to go beyond and deliver benefit.

The group was unable to reconcile a 'no harm' approach with global biodiversity goals (e.g. SDGs) to improve biodiversity.

### **Appropriate metrics/indicators and safeguards for biodiversity**

A theme repeatedly made across the discussion was that there was little standardisation in the definitions, metrics, indicators, and safeguards for biodiversity values. This was explained by the wide ecological differences between different forests, ecosystems, and habitats. As noted above, it was felt many of these metrics and safeguards needed to be determined locally.

The HCV approach was felt to be pragmatic by many participants. This three-step process included identification of critical issues, establishing appropriate metrics and management practices to address the risks, and then monitoring those indicators to ensure that the management practices are avoiding the identified risks.

One breakout group felt that general SFM requirements were appropriate rather than biomass only biodiversity requirements, because there were so many different uses of forestry.

### **Appropriate scale for undertaking biodiversity assessments, and for setting biodiversity requirements**

Asked whether a general or local approach for criteria on biodiversity would be preferred, participants had contrasting opinions on the preferred scale of implementation. 35% of respondents supported a 'Local'<sup>8</sup> approach, whilst 30% supported a 'General' approach, with a further 35% choosing 'Other'.

This question, and the resulting discussion, saw some consensus that biodiversity is context specific, making it challenging to set very clear 'general' requirements. However, the discussion seemed to reach a level of support for an approach to biodiversity that set out a globally described framework (e.g. a principles approach) with freedom to comply with locally defined indicators.

One presenter pointed out that multiple scales and multiple indicators are needed to monitor and assess species and habitats, but that multiple data sources (in-situ, remote sensing etc) should be integrated. It was pointed out that national and international reporting standards provide a summary of relevant indicators for sustainable forest management.

One participant suggested that criteria should be general but "the indicator level should be suitable for a more local approach". The need for balance was mentioned by one participant

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<sup>8</sup> It is worth noting that there was some discrepancy over the meaning of 'local', with one participant suggesting that the term could refer to "national, sub-national, or perhaps ecosystem-specific" scales of implementation depending on the context.

who stated how “Addressing biodiversity only on local scale loses sight of the broader natural view, but local auditing seems very important to mitigate risks and monitor effects”.

There was some discussion on whether biodiversity assessments should be undertaken at a field or forest management unit (FMU) level, or whether a landscape, regional or national level was more appropriate. One breakout group discussed the IUCN, and how it operates a three-tier system to a) monitor general impacts, b) monitor specific high-risk impacts on a landscape scale, and c) conduct very specific/detailed assessment on a FMU level. In considering how progress against biodiversity criteria may be monitored at various scales, the breakout group questioned whether “such an approach might also work for SBP”.

### **The biodiversity impacts of residue removal and thinnings are unclear**

A difference of views was expressed on the impacts of forest residue removal and thinnings, particularly for biodiversity, and how this should be addressed in SBP’s standards.

This discussion emerged from the European Commission’s claim for the need to minimise the use of whole trees for bioenergy. One participant commented that “whole tree harvesting itself does not necessarily result in either positive or negative outcomes”, another argued that “the generic limiting or minimising use of trees” was not contextually specific enough, particularly in relation to the residue removal of the use of thinnings. Similarly, one participant questioned whether this EU definition of whole tree included the use of pre-commercial thinnings as part of forest maintenance. Another raised a concern that forests harvested for biomass may be more likely to remove residues essential for biodiversity. This led to a short discussion, with one participant stating that ‘quality of residue that remains is all important, not quantity removed’.

One participant was critical of the idea of a “single system which covers all types of production globally by specifying how much residue you should leave behind”, as the impacts/benefits are often context specific. In this regard, the participant questioned whether the SBP standard should incorporate more ‘outcome-based’ indicators, not just process indicators.

Asked whether the pressure to remove residues from forests would require additional safeguards for the biomass sector, one participant weighed up the “benefits of removing residues from a forest fire point of view”. Given the rise in forest fires in Australia and North America in recent years, they wondered whether the active removal of residues would be conducive to improve forest health, biodiversity protection and carbon sequestration.

Views from different local contexts were expressed on the removal of thinnings and forest residues. One participant drew attention to long-rotation forestry in Sweden, noting how harsh climatic conditions heightened the importance of late thinning for end quality. Meanwhile, a South-eastern USA forest owner cited how uncertainty about the acceptability of thinnings by some pellet producers had resulted in an abundance of thinnings in the region, with no end destination, and which in the future could reduce planting patterns in the future (impacting on forest sequestration).

## **Areas for Future Consideration**

### **Responsibility for data collection and assessment**

There was consensus amongst participants that trusted, verifiable data was essential for any biodiversity standard. However, it was unclear who should be responsible for the collection and analysis of this data.

Although land-level data is vital, one participant was keen to assert that “we wouldn’t expect the land-owner to collect this information”. Rather, they argued that “Biomass producers or forest services would be the entities collecting this information”. Nonetheless, the argument was also made that biomass producers should not be responsible for this, with one participant pushing for a solution that “does not put a lot of pressure on the biomass producer itself”.

Many participants had positive opinions on NatureServe’s role as a centralised organisation for data collection and monitoring. Two participants questioned whether an equivalent biodiversity observation database could be used for risk identification in Regional Risk Assessments. Given that NatureServe currently only covers North America, one participant outlined the need in Europe for “something similar, something which is centralised...Where there can be a sharing of resources needed to set this up”.

Alternatively, one breakout group concluded “that the best is when there is some national level inventory and framework available”, suggesting that biodiversity monitoring could be operated nationally. Another breakout group discussed SBP’s capacity for data collection for biodiversity monitoring, questioning whether “there may be a role here for SBP regarding data and verification”.

### **The potential of market-based incentives for biodiversity**

Following on from the discussion on whether biodiversity standards should deliver benefits or simply ‘no harm’, participants discussed potential ways to incentivise positive behaviour from forest owners and producers. Given the need to encourage forest owners to go beyond existing practice (“outside of their comfort zone”) to improve biodiversity protection, one participant asked whether it is “possible for market-based solutions to provide incentives to forest owners who go above and beyond in their practices”.

Similarly, the “potential for trading platforms” was highlighted by one breakout group. Another participant acknowledged that it is “hard to divorce market potential of income with cultural practices in the short term”, but wondered how emerging markets to “monetise” biodiversity and carbon will change perceptions of forest value, and how that may change harvesting behaviours. The participant anticipated that payments from banks and financial institutions for forest protection would be of increasing importance in coming years.