

Lessons learned

The future challenges that will have to be overcome to secure a clean, healthy, productive and biologically diverse ocean have been identified. These include having the data and understanding, coupled with the development of new indicators underpinned by long-term monitoring, that will result in a future assessment of Scotland's seas describing the condition of Scotland's marine environment and the pressures it is subject to. However, having the data is only one of several steps that are required to deliver a full assessment such as SMA2020. During the process of producing SMA2020 there have been a number of lessons learned, specifically in the context of producing the assessment. These are presented below.

Review the relevant scale for assessments:

The scale at which to report continues to be debated whenever an assessment is being prepared, be it national or international. For an assessment such as SMA2020, there is an expectation that the scale of reporting will have a strong regional component, yet for topics including climate change, ocean acidification and cetaceans this may be neither appropriate nor possible, given the available data. A review and prioritisation of the gaps that need to be addressed at a regional scale should be undertaken to help inform development of the next SMA.

Refine current indicators and develop new indicators:

SMA2020 presents the outputs from new indicators as well as those that are tried and tested. However, there continues to be a need to refine the existing set on the basis of their ease of use, availability of data and relevance to the questions being asked. In addition, there is a need to develop new indicators, especially where the questions have changed or the relevance of a component in the ecosystem has increased.

Improve the methods for assessing pressure from activities:

The process for determining the pressures from human activities was structured and based around a tool (FeAST) developed in Scotland. However, a bespoke method needs to

be developed, linked to the framework provided by FeAST, to enable quantitative outputs and provide trends at an appropriate scale.

Scotland must continue to actively participate in national and international discussions:

There are, for example, legacy issues which should influence on-going discussion on monitoring programmes, including for persistent organic pollutants, while taking account of more recent contaminants including personal care products and pharmaceuticals. The SMA2020 has built on and benefited from the results of these wider collaborations.

Changing resource landscape: Since the publication of Scotland's Marine Atlas in 2011, new data have become available and additional programmes have been introduced. However, the scale or frequency of sampling of some existing monitoring programmes have been reduced. Unless addressed, this will continue to impact on the quality of future assessments. The developing Scottish Marine Science Strategy needs to take account of the changing landscape in identifying the priorities.

Style is critical: SMA2020 is an electronic product aimed at a broad audience of policy makers, decision-takers, specialists and the general public. The current SMA guidelines focus on technical aspects. The instructions to the authors of future assessments must be more definitive in terms of providing a style guide on how to write content for these audiences across a range of digital media.

Sourcing relevant images: Electronic delivery requires a greater number of relevant images, which it takes time to source. It may be useful to identify the most significant gaps, so such gaps have been filled in advance of the next SMA.

It always takes longer than you think:

SMA2020 has required the input of many people (more than 250). A thorough and valuable peer review, critical to the final output, also takes time.

