

# Definitions of BAT/BEP: Analysis

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## Introduction

### *The concept of BAT*

Best available technology (BAT) can be described as ‘an approach to pollution control (...) that is based on adopting the best technology, treatment techniques, or other means which are available, taking account of cost’.<sup>1</sup> The legal concept of BAT can be traced back to the 1970s, for example it appeared in U.S. environmental legislation at that time.<sup>2</sup> During the following decade, the concept started to acquire a more pertinent role. In EU law, the concept of BAT appeared in directives for air and water protection (e.g. 84/360/EEC and 86/280/EEC).<sup>3</sup> In the OSPAR Convention (adopted 1992), the application of best available technology, as well as the application of best environmental practice, are key obligations for preventing marine pollution from land-based sources.<sup>4</sup> In the updated Helsinki Convention of 1992, the prime obligation is that the Parties have to prevent land-based pollution by using best available technology and best environmental practice.<sup>5</sup>

The evolution of the BAT concept relates to the emergence of the precautionary principle in environmental policy.<sup>6</sup> The core of the precautionary principle is reflected in the Rio Declaration: ‘where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation’.<sup>7</sup> One method for applying the precautionary principle is to prescribe BAT (technique related precaution).<sup>8</sup> For example, in German environmental policy the

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<sup>1</sup> Chris Park and Michael Allaby, 'Best Available Technology', *A Dictionary of Environment and Conservation* (Oxford University Press 2017).

<sup>2</sup> Kimmo Silvo and others, 'Best available techniques (BAT) in the Finnish pulp and paper industry – a critical review' (2005) 15 *European Environment* 175.

<sup>3</sup> Council Directive 84/360/EEC of 28 June 1984 on the combating of air pollution from industrial plants [1984] OJ L188/20; Council Directive 86/280/EEC of 12 June 1986 on limit values and quality objectives for discharges of certain dangerous substances included in List I of the Annex to Directive 76/464/EEC [1986] OJ L181/16.

<sup>4</sup> André Nollkaemper, 'Legal implications of the obligation to apply the best available technology' (1993) 26 *Marine Pollution Bulletin* 236; Convention for the Protection of the Marine Environment of the North-East Atlantic (OSPAR Convention) (adopted on 22 September 1992, entered into force on 25 March 1998).

<sup>5</sup> *ibid* (Nollkaemper); Convention on the Protection of the Marine Environment of the Baltic Sea Area, 1992 (Helsinki Convention) (entered into force on 17 January 2000).

<sup>6</sup> *ibid* (Nollkaemper).

<sup>7</sup> *Report of the United Nations Conference on Environment and Development* (United Nations 2012).

<sup>8</sup> Simon Marr, *The Precautionary Principle in the Law of the Sea* (Interactive Factory 2003).

precautionary principle and BAT is closely linked – precaution has to be exercised when it has been determined what ‘best’ is. Another example of the linkage is that the precautionary principle is one of the criteria when determining BAT and BEP, according to the Helsinki Convention.<sup>9</sup> It has been stated that BAT is ‘(...) widely regarded as the most perfect application of the precautionary principle’.<sup>10</sup>

Today, the BAT concept is most pertinent in the EU Industrial Emissions Directive. BAT is an essential part of the permitting system established by the Directive.<sup>11</sup> Nevertheless, no particular technique or specified technology is actually prescribed. Instead, in the actual granting of a permit, BAT is a ‘general and basic guiding principle concerning specific requirements’.<sup>12</sup> The Commission adopts so called BAT conclusions and publishes these in BAT reference documents. In these documents, it is laid down what constitutes BAT, either regarding particular industrial activities or regarding cross-sectoral issues.<sup>13</sup> For example, BAT may be prescribed in the form of emission limit values.<sup>14</sup> Thus, the BAT concept is being made operational on a plant level, by the means of environmental permit conditions that take into account the information presented in the BAT reference documents.<sup>15</sup>

### *The concept of BEP*

In the OSPAR Convention, BEP is defined as ‘the application of the most appropriate combination of environmental control measures and strategies’.<sup>16</sup> Compared to BAT, best environmental practice (BEP) seems to be a more uncertain and fragmented concept. The name of the concept varies, for example ‘best management practice’ (BMP) is also used.<sup>17</sup> BEP has received little critical assessment from the social sciences, nevertheless the concept is widespread

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<sup>9</sup> Per Mickwitz, *Implementation of key environmental principles : experiences from the protection of the Baltic Sea* (Copenhagen : Nordic Council of Ministers Nordiska ministerrådet Stockholm : Fritze distributör 1998), 142.

<sup>10</sup> *ibid* (n 4 Nollkaemper).

<sup>11</sup> Directive 2010/75/EU of the European Parliament and of the Council of 24 November 2010 on industrial emissions (integrated pollution prevention and control) [2010] OJ L 334/17.

<sup>12</sup> Kimmo Silvo and others, 'Best available techniques (BAT) in the Finnish pulp and paper industry – a critical review' (2005) 15 *European Environment* 175.

<sup>13</sup> David Langlet and Said Mahmoudi, *EU environmental law and policy* (First edition, Oxford University Press 2016) 197.

<sup>14</sup> European Commission, 'Summary of Directive 2010/75/EU on industrial emissions (integrated pollution prevention and control)' <<http://ec.europa.eu/environment/industry/stationary/ied/legislation.htm>> accessed 5 June 2018.

<sup>15</sup> Kimmo Silvo and others, 'Best available techniques (BAT) in the Finnish pulp and paper industry – a critical review' (2005) 15 *European Environment* 175.

<sup>16</sup> OSPAR Convention Appendix 1.

<sup>17</sup> Thomas G. Measham, Gail J. Kelly and F. Patrick Smith, 'Best Management Practice for Complex Problems: a Case Study of Defining BMP for Dryland Salinity' (2007) 45 *Geographical Research* 262.

and plays an important role in environmental regulation.<sup>18</sup> As with BAT, BEP stems from environmental legislation in the 1970s. For example, in the 1972 U.S. Federal Water Pollution Control Act, BMPs is used as a mean to control pollution.<sup>19</sup>

Today, the different concepts of BEP may be divided into two categories – regulatory and learning. The first category has been described as practices that are determined by regulatory agencies ‘(...) to be the most effective, practicable (...) means of preventing or reducing the amount of pollution generated by nonpoint sources (...)’. Later on, the concept has also been used to meet criteria specified for point-source pollution. The latter category (learning) involves extension and adoption of practices recommended (but not necessarily required) by Government agencies and research organizations, for example the production of ‘how to’ guides. In this category the focus is on sharing information and promoting learning.<sup>20</sup>

### **Research Task**

In the process of developing HELCOM guidelines on Best Available Techniques (BAT) and Best Environmental Practice (BEP) for aquaculture in the Baltic Sea region, Sweden has accepted to take lead by delivering a ‘compilation of national Aquaculture BAT/BEP definitions including relevant definitions from international and EU law’.<sup>21</sup> Thus, the aim of this study is to compile definitions of BAT/BEP that could be of relevance to aquaculture. The Swedish Board of Agriculture has the main responsibility for this task, but the work is carried out in collaboration with the Swedish Agency for Marine and Water Management and the Department of Law, University of Gothenburg. In addition to the output requested by HELCOM, the aim is to carry out an analysis of the definitions found. Such an analysis has been requested by the Swedish agencies mentioned.

### **Method and Material**

The material was planned to be gathered by using two methods, a) a survey by the mean of a questionnaire and b) desk-based research (secondary research). For the survey, a questionnaire was developed by the Swedish Board of Agriculture and sent out to be answered by HELCOM State Parties. By the time of the writing of this analysis (early June 2018), no material had yet been received. The desk-based research was mainly carried out trough searching for relevant material by using online search engines. As a result, the websites of national public agencies, and

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<sup>18</sup> *ibid.*

<sup>19</sup> *ibid.*

<sup>20</sup> *ibid.*

<sup>21</sup> HELCOM, *First meeting of HELCOM FISH Correspondence Group concerning a draft document on BAT/BEP descriptions for sustainable aquaculture in the Baltic Sea region (CG Aquaculture 1-2017)* (HELCOM 2017).

the website of the Food and Agriculture Organization (FAO), have been the main sources. When examining previous studies and scholarly literature, little material of relevance for the compilation was found. An exception was a study published in 2016 by the Danish Environmental Protection Agency, *Comparison of legal regulation and technology level requirements, for aquaculture facilities producing rainbow trout in freshwater, in selected European countries*.<sup>22</sup> However, for the background section (above) and the analysis (below) different scholarly journals have been used as sources.

The selection of countries to be studied by desk-based research was suggested by the Swedish Board of Agriculture. Initially, these were Sweden, Canada, England, Scotland, Ireland, Iceland and Norway. No explicit legal definitions of BAT or BEP were found for Iceland and Norway. Consequently, information on these countries are not included in the compilation. Later on, Finland, Denmark, Germany and Estonia were added to the group of countries to be studied by the desk-based research method. The result of the desk-based research is presented as separate country-specific Excel-sheets.

The study has been limited by several factors. The timeframe for the study has been rather short (three weeks). Furthermore, the lack of language competence has limited the sources to those in the English or the Swedish language. Moreover, the author's (my) legal competence is limited to international law, EU law and the Swedish legal system. When lacking thorough knowledge of the national jurisdictions studied, there is a risk that relevant information has been overlooked. Finally, this study will only allow conclusions of rather ground character. Inherent in the concept of BAT is a wide margin of discretion (see below). Consequently, the national formulations of BAT, which are the objects of the study, says very little on what requirements that are actually imposed on the grounds of BAT. To reach a deeper understanding of national BAT/BEP provisions, the influence of these provisions, how these are applied practically etc., extensive studies of the national environmental legislation and related case law is required. The timeframe and the prerequisites of this study has not allowed this. Thus, even though the analysis has a comparative ambition, it will not be possible to draw any conclusions on the actual level of convergence in the application of BAT/BEP among the countries studied. Instead, this analysis will be of rather general and brief character.

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<sup>22</sup> Jesper Heldbo and Stefan Meyer, *Comparison of legal regulation and technology level requirements, for aquaculture facilities producing rainbow trout in freshwater, in selected European countries* (Environmental Protection Agency 2016).

## **Analysis**

### *General characteristics and features*

The BAT concept has in most countries been named ‘best available technology’ or ‘best available techniques’. This was used in seven out of nine countries. One exception is Sweden, where the formulation ‘best possible technique’ is used. Regarding the origin of the BAT definitions, it is clear that the Industrial Emissions Directive (IED) has had an impact in several European countries (England, Scotland and Ireland). The definitions of BAT in these countries clearly, almost word by word, correspond with the definition set out in the IED.

The concept of BEP were only found in two countries, Canada and Finland. In Finland it is called ‘best environmental practice’, while in Canada ‘best management practices plan’. There may be several reasons for the few findings of BEP definitions. In comparison with the BAT concept, BAT seems to have a more pertinent role in permitting processes as a condition in permits. Thus, there may be a need to have a more clearly defined concept of BAT than BEP. Moreover, the concepts of BEPs can often be characterized as ‘learning’ concepts rather than ‘regulatory’ concepts (see above). ‘Learning’ concepts may be published or developed internally within an industry sector. Consequently, the use of official sources such as regulatory bodies, which have been the main sources for this study, may have contributed to the few findings of BEP definitions.

The definitions of BAT/BEP that were found are in most cases generally applicably, relevant to many different types of activities. The exceptions are the findings for Canada, Estonia and Denmark, which is specifically relatable to aquaculture. Specific technical standard requirements, established in a statute or a statutory instrument, were only found for Denmark.

### *BAT*

Regarding the formulation of the BAT definitions, some common features can be noted. Almost all definitions that were found touches upon the technical aspect. For example, ‘available techniques’ is stated in some definitions to be those techniques that ‘are developed on a scale which allows implementation in the relevant industrial sector’. In Estonia, it is mentioned as ‘technical acceptability’. In Sweden, the technical aspect has been addressed in the way that the technology must be available, not only at an experimental stage, and that it should be commercially available and used at a facility. It does not have to be a facility located in Sweden but a facility in an open market economy, driven without financial support.

Another element that is present in almost all definitions is the financial aspect. It has been defined in different ways, such as the technique should be economically viable, that costs and advantages should be taken into account, the technique should be economically feasible, or economically reasonable.

Taking into account, not only the technical availability, but also the economical availability, is significant for the BAT concept. The consideration of ‘economic availability’ in the determination of BAT, indicates that what constitutes BAT cannot be objectively determined. Instead, BAT is determined by weighing different interests and factors against each other. This imply that as costs increase, there comes a point at which the principle cannot, on cost-benefit criteria, be applied further in the sense of reductions in discharges. The exact location of this point is not fully objectively assessable.<sup>23</sup> Thus, the definitions of BAT that has been found in this study brings a wide margin of discretion when it comes to deciding whether a certain technology is affordable or not. Regarding the definition of BAT in an international context, it has been stated that ‘the higher the degree of detail in the definitions, the less discretion left to states to decide unilaterally what, in their view, constitutes the best available technology. This step may directly lead to reductions of discharges’.<sup>24</sup>

### *BEP*

BEP definitions were only found in Canada and Finland. Comparing the two definitions, the Finnish definition is brief and general while the Canadian is rather comprehensive. The Canadian definition is specifically applicable to finfish aquaculture and requires finfish farmers to prepare and implement a ‘best management practices plan’ to meet certain objectives, such as waste standards, continual reduction of waste discharge and management to preclude spillage etc.

As seen above, the financial aspect is essential in the definitions of BAT. This factor is also touched upon in the Finnish BEP definition, by including the term ‘cost-efficient combination’. However, it is not included in the Canadian definition of BEP.

Considering the two categories of BEPs (see above), the Canadian definition may be characterized as a ‘regulatory’ BEP since it is established in a statue and clearly states: ‘an operator *must* [emphasize added] implement a Best Management Practices Plan (...)’. The Finnish definition may also be considered as ‘regulatory’. It is included in a statue and states: ‘In order to prevent pollution appropriate and cost-efficient combinations of means *shall* [emphasize added] be used (...)’.

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<sup>23</sup> *ibid* (n 4 Nollkaemper).

<sup>24</sup> *ibid* (n 4 Nollkaemper).

## **Table of Authorities**

### *Regional seas conventions*

- Convention for the Protection of the Marine Environment of the North-East Atlantic (OSPAR Convention) (adopted on 22 September 1992, entered into force on 25 March 1998)
- Convention on the Protection of the Marine Environment of the Baltic Sea Area, 1992 (Helsinki Convention) (entered into force on 17 January 2000).

### *European Union law*

- Council Directive 84/360/EEC of 28 June 1984 on the combating of air pollution from industrial plants [1984] OJ L188/20
- Council Directive 86/280/EEC of 12 June 1986 on limit values and quality objectives for discharges of certain dangerous substances included in List I of the Annex to Directive 76/464/EEC [1986] OJ L181/16
- Directive 2010/75/EU of the European Parliament and of the Council of 24 November 2010 on industrial emissions (integrated pollution prevention and control) [2010] OJ L 334/17

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