Annex 8. Item 6.3. – Chapter 4.7. 'Fallowing in Aquaculture'

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SECTION 4

DISEASE PREVENTION AND CONTROL

CHAPTER 4.7.

FALLOWING IN AQUACULTURE

Norway	**Category:** General **Proposed amended text:** not relevant **Rationale:** Norway in general supports the proposed changes to this Chapter. Nevertheless, some specific comments are provided below. **Supporting evidence:** not relevant

Article 4.7.1.

Introduction

~~Gaps in *aquaculture* production at the same location are commonly recognised to be of value in resting or restoring the local environment. As part of this strategy, *fallowing* can break re-*infection* cycles by removing loci of a *disease* from a farm. Consequently, *fallowing*~~

Fallowing is a ~~routine carried out as a regular~~ *disease* management measure in *aquaculture*, which is employed either: ~~as a best practice especially prior to the introduction of new populations of *aquatic animals* into a previously stocked used site,~~

1) voluntarily, prior to the introduction of certain new populations of *aquatic animals* into a previously stocked *aquaculture establishment* as part of a *biosecurity plan* constructed in accordance with Chapter 4.1., or

Norway	**Category**: addition **Proposed amended text** (or precise suggested deletion): 1) voluntarily or compulsory, prior to the introduction of certain new populations of *aquatic animals* into a previously stocked *aquaculture establishment* as part of a *biosecurity plan* constructed in accordance with Chapter 4.1., or **Rationale:** While some countries may not require compulsory fallowing to ensure adequate biosecurity within the aquaculture industry, many countries need compulsory fallowing as a routine measure to reduce infection pressure. Given the importance of fallowing as a biosecurity measure, it is important that this article doesn't inadvertently restrict competent authorities' ability to impose compulsory fallowing as a legal requirement when needed, in addition to its use as an emergency measure as mentioned in point 2). We therefore suggest the addition of "or compulsory". **Supporting evidence, if relevant:** not relevant

2) compulsorily, on the instructions of the *Competent Authority*, following an outbreak of a *disease* which is subject to emergency management measures as described in Chapter 4.11~~Y~~.

In the case of the voluntary *fallowing*, the objectives are to prevent transmission of *pathogenic agents* between successive production cycles and suppress *pathogenic agent infection* pressure.

In the case of compulsory *fallowing*, the objective is to eradicate a *pathogenic agent* from an *aquaculture establishment* or in the case of synchronous *fallowing*, from a group of epidemiologically connected *aquaculture establishments*.

Article 4.7.2.

Considerations for fallowing

Fallowing is used to provide a temporal break in the transmission of a *pathogenic agent* ~~transmission cycles~~ between successive cohorts of *susceptible species* or where relevant vector species ~~populations~~ of *aquatic animals*. It should be implemented taking the following factors into account ~~with consideration given to~~:

Norway	**Category:** deletion **Proposed amended text:** *Fallowing* is used to provide a ~~temporal~~ break in the transmission of a *pathogenic agent* ~~transmission cycles~~ between successive cohorts of *susceptible species* or where relevant vector species ~~populations~~ of *aquatic animals*. It should be implemented taking the following factors into account ~~with consideration given to~~:

	Rationale: Suggest deleting the word “temporal” as the word break is sufficient. **Supporting evidence:** not relevant

~~1) the objective of *fallowing* such as preventing transmission between sequential production cycles, suppression of *pathogenic agent infection* pressure, or to eradicate a *pathogenic agent* from an *aquaculture establishment*;~~

1~~2~~) the possible sources of *infection* at the *aquaculture establishment* ~~production site~~ such as farmed or wild populations of *susceptible species* ~~*aquatic animals*~~, *vectors*, fomites or *pathogenic agents* in the environment (e.g. water or sediment);

2~~3~~) characteristics of the relevant *pathogenic agent*, including its survival and stability outside the host and its infective period ~~whether the *pathogenic agent* is obligate or facultative~~;

~~4) for obligate *pathogenic agents*, the period that they may remain viable in the environment;~~

3~~5~~) the need for spatial coordination to synchronously fallow epidemiologically connected *aquaculture establishments*;

4) the type of *aquaculture* production system taking into account its design, extent and application of *biosecurity* measures;

5~~6~~) *aquaculture establishment(s)* should ~~when the infective period is not known, the farm may~~ be fallowed for a period of time, the length of which should be based on a *risk assessment*.

Article 4.7.3.

Voluntary fallowing

When assessing the potential benefits of recommending voluntary *fallowing*, the *Aquatic Animal Health Services* in a country should in addition to the considerations outlined in Article 4.7.2. take the following factors into account:

1) the level of *risk* a particular *pathogenic agent* poses to local *aquaculture* operations, and to other aquatic resources in the area;

2) the relevant socioeconomic conditions and ~~In order to promote improved health in *aquaculture*, the *Aquatic Animal Health Service* in a country may encourage the voluntary use of *fallowing* as a part of the *biosecurity plan* set out in Chapter 4.1. as a *biosecurity* measure for an individual *aquaculture establishment* or as a common *biosecurity* measure among all *aquaculture establishments* that are considered epidemiologically linked in a given area. a routine management strategy for many *diseases*. Account should be taken of When encouraging aquaculture operators to fallow their establishments, the *Competent Authority* should emphasise~~ the likely beneficial effects of *fallowing* in proportion to the economic costs involved.

~~The *Aquatic Animal Health Service* should also consider such factors as take into account the level of *risk* a particular *disease* poses to the local and national *aquaculture* operations, previous knowledge of the severity of a *disease(s)*, the infective period of the *disease* in question, and distribution of the *pathogenic agent(s)*, as well as the relevant socioeconomic conditions ,and when assessing the potential benefits pertaining to the general aquatic resources in the area. When the infective period is~~

~~not known, the farm may be fallowed for a period, the length of which should be based on a *risk assessment*.~~

Article 4.7.4.

Compulsory fallowing

Compulsory *fallowing* may be mandated by ~~required in accordance with the instructions of~~ the *Competent Authority* following an outbreak of an important *disease* which has been subject to the measures described in Chapters 4.10~~X~~. and 4.11~~Y~~. ~~However, where an official *stamping-out policy* is being carried out for a *disease* of concern, the *Aquatic Animal Health Service* should~~ The *Competent Authority* may require that an infected *aquaculture establishment*, and ~~all~~ other epidemiologically linked ~~relevant~~ *aquaculture establishments* in an officially declared ~~established~~ *infected zone*, are ~~be~~ subjected to a ~~required~~ period of *fallowing*~~, if necessary synchronised~~. The duration of the ~~this~~ *fallowing* period will be ~~carried out for a period of time which is~~ prescribed by the *Competent Authority*, following *risk assessment*. *Risk assessment* will also be used to determine if a ~~A~~ period of synchronous *fallowing* is ~~may be~~ required in epidemiologically linked ~~relevant~~ *aquaculture establishments* in the *infected zone* as well as the duration of such *fallowing* ~~should this be indicated by the *risk assessment*.~~

The *Competent Authority* should ensure compulsory *fallowing* is underpinned by legal provisions that set out the following details;

~~Article 4.7.52.~~

~~**Legal powers**~~

~~In the cases referred to in Article 4.7.1. where *fallowing* is may be a compulsory measure, prescribed by the *Competent Authority*, for instance in the establishment or restoration of a *disease free zone*, countries should establish a legal framework must be in place to: for the implementation of *fallowing* procedures in *aquaculture establishments*. Legal provisions could include:~~

1) ~~define defining the~~ conditions under which ~~*disease* circumstances when~~ *fallowing* or synchronised *fallowing* is required including specific implementation steps for each;

2) specific point at which *fallowing* should commence;

3) duration of the *fallowing* period;

4) conditions under which the re-introduction of *aquaculture* species will be permitted, once the *fallowing* period has been completed.

~~define defining mechanisms based on *risk assessment* where individual disease-specific measures may be determined, including when *fallowing* should commence *disinfection* and the length of the *fallowing* period prior to the re-introduction of *susceptible species*.;~~

~~3) following permission by the *Competent Authority* to restock with *susceptible species*, defining a period of *surveillance* and *diagnostic* to verify freedom from the specified *disease*.~~

Article 4.7.5~~6~~~~3~~.

Technical parameters for the implementation of a compulsory ~~statutory~~ fallowing plan

Taking into account the categories of *aquaculture* production systems referred to in Article 4.1.5., as well as the measures described in paragraph 5 of Article 4.10.7., *fallowing* of an *aquaculture establishment* ~~*Fallowing* of a farm~~ should ~~take paragraph 5 of Article 4.X.7. into account and~~ start immediately after the following actions are taken:

1) removal ~~destruction of~~ and biosecure disposal ~~of~~:

a) ~~removal of~~ all *susceptible species* of *aquatic animals* for the *disease* of concern; and

b~~2~~) ~~removal of~~ all species of *aquaculture* animals which are capable of acting as *vectors* of the *disease* of concern, if indicated by *risk assessment*; and

c~~3~~) ~~if appropriate, removal of~~ other species, if indicated by *risk assessment*; ~~and~~

Norway	**Category**: general **Proposed amended text**: Clarification of text needed **Rationale:** Point 1a) in this article refers to “all species of aquatic animals” while point 1b) refers to “all species of aquaculture animals”. Is the use of “aquatic animal” vs “aquaculture animal” in these two sentences intentional? If yes, why should there be aquatic animals in an aquaculture establishment other than aquaculture animals (except wild species that may enter open or semi-open systems and would be difficult to control)? Furthermore, “aquaculture animal” is not defined in the glossary, so it is at present not possible to ascertain what this really refers to. Please amend the text to enhance clarity. **Supporting evidence, if relevant**: not relevant

2~~4~~) removal of water in which infected stocks have been held, where feasible; and

3~~5~~) appropriate *disinfection* measures have been completed on equipment and other contaminated materials in accordance with Article 4.7.4., under the oversight of the *Competent Authority* ~~supervision of the *Aquatic Animal Health Services*. equipment and other materials contaminated or otherwise capable of harbouring *infection* have either been removed or subjected to *disinfection* to standards approved by the *Aquatic Animal Health Service*.~~

In addition to the considerations outlined in Article 4.7.2., the *Competent Authority* should consider that the duration~~The length~~ of the compulsory ~~statutory~~ *fallowing* period should be based on scientific evidence of the likelihood of ~~free~~ a *pathogenic agent* remaining infective ~~outside its aquaculture host(s)~~ in the local environment, at a level likely to cause an unacceptable risk of re-*infection* of the *aquaculture establishment*. ~~Account should be taken of~~ Factors to be considered include the extent of the *disease outbreak*, local distribution of *susceptible species* and possible *vectors* ~~availability of alternative hosts~~, the survival and infectivity characteristics of the *pathogenic agent* and the relevant ~~local~~ climatological, geographical and hydrographical conditions~~factors~~. ~~In addition, the level of *risk* to the local *aquaculture* industry and wider aquatic resources should be taken into consideration may be included. A scientifically based *risk assessment* approach should be used to determine the length of the *fallowing* period.~~

Article 4.7.6~~7~~4.

~~Instructions for disinfection~~ Disinfection prior to fallowing

Aquatic Animal Health Services ~~*Competent Authorities*~~ ~~Countries~~ establishing *fallowing* procedures should develop a detailed set of instructions for *disinfection* of *aquaculture establishments* prior to *fallowing* for approval by the *Competent Authority*. These instructions should be~~,~~ ~~where~~ appropriate for the type of production system and circumstances. This should be completed in accordance with Chapter 4.4. and in the case of~~or~~ compulsory *fallowing*, in accordance with Chapters 4.10~~X~~. and 4.11~~Y~~. ~~For this purpose, the instructions set out in Chapter 4.4. of the *Aquatic Code* and in Chapter 1.1.3. of the *Aquatic Manual* should be used as guidelines,~~ taking into account current scientific knowledge on the efficacy of the disinfectants~~treatments~~ for the *pathogenic agent* of concern.

Article 4.7.7~~8~~5.

Restocking after fallowing

An ~~No~~ *aquaculture establishment* that has been subject to~~under~~ compulsory *fallowing* should not be restocked until the compulsory *fallowing* period has been completed and permission from the *Competent Authority* has been received.

When restocking, care should be taken not to use stocks of *aquatic animals* that could ~~would~~ compromise the objectives of the *fallowing* procedure. To increase confidence in the effectiveness of the *fallowing* procedures, all farms subjected to compulsory *fallowing* should have a period of ~~high level~~ official *surveillance* after *susceptible species* have been restocked. The duration and intensity of the *surveillance* should be appropriate for the *disease* in question ~~of concern~~ and subject to the requirements set out in Chapter 1.4., and to the relevant disease-specific chapter in cases of *listed diseases* ~~local conditions~~.

CLEAN VERSION

CHAPTER 4.7.

FALLOWING IN AQUACULTURE

Article 4.7.1.

Introduction

Fallowing is a *disease* management measure in *aquaculture*, which is employed either:

1) voluntarily, prior to the introduction of certain new populations of *aquatic animals* into a previously stocked *aquaculture establishment* as part of a *biosecurity plan* constructed in accordance with Chapter 4.1., or

2) compulsorily, on the instructions of the *Competent Authority*, following an outbreak of a *disease* which is subject to emergency management measures as described in Chapter 4.11.

In the case of the voluntary *fallowing*, the objectives are to prevent transmission of *pathogenic agents* between successive production cycles and suppress *pathogenic agent infection* pressure.

In the case of compulsory *fallowing*, the objective is to eradicate a *pathogenic agent* from an *aquaculture establishment* or in the case of synchronous *fallowing*, from a group of epidemiologically connected *aquaculture establishments*.

Article 4.7.2.

Considerations for fallowing

Fallowing is used to provide a temporal break in the transmission of a *pathogenic agent* between successive cohorts of *susceptible species* or where relevant, vector species, of *aquatic animals*. It should be implemented taking the following factors into account:

1) the possible sources of *infection* at the *aquaculture establishment* such as farmed or wild populations of *susceptible species*, *vectors*, fomites or *pathogenic agents* in the environment (e.g. water or sediment);

2) characteristics of the relevant *pathogenic agent*, including its survival and stability outside the host and its infective period;

3) the need for spatial coordination to synchronously fallow epidemiologically connected *aquaculture establishments*;

4) the type of *aquaculture* production system taking into account its design, extent and application of *biosecurity* measures;

5) *aquaculture establishment(s)* should be fallowed for a period of time, the length of which should be based on a *risk assessment*.

Article 4.7.3.

Voluntary fallowing

When assessing the potential benefits of recommending voluntary *fallowing*, the *Aquatic Animal Health Services* in a country should, in addition to the considerations outlined in Article 4.7.2., take the following factors into account:

1) the level of *risk* a particular *pathogenic agent* poses to local *aquaculture* operations, and to other aquatic resources in the area;

2) the relevant socioeconomic conditions and the likely beneficial effects of *fallowing* in proportion to the economic costs involved.

Article 4.7.4.

Compulsory fallowing

Compulsory *fallowing* may be mandated by the *Competent Authority* following an outbreak of an important *disease* which has been subject to the measures described in Chapters 4.10. and 4.11. The *Competent Authority* may require that an infected *aquaculture establishment*, and other epidemiologically linked *aquaculture establishments* in an officially declared *infected zone*, are subjected to a period of *fallowing*. The duration of the *fallowing* period will be prescribed by the *Competent Authority*, following *risk assessment*. *Risk assessment* will also be used to determine if a period of synchronous *fallowing* is required in epidemiologically linked *aquaculture establishments* in the *infected zone* as well as the duration of such *fallowing*.

The *Competent Authority* should ensure compulsory *fallowing* is underpinned by legal provisions that set out the following details;

1) conditions under which *fallowing* or synchronised *fallowing* is required including specific implementation steps for each;

2) specific point at which *fallowing* should commence;

3) duration of the *fallowing* period;

4) conditions under which the re-introduction of *aquaculture* species will be permitted, once the *fallowing* period has been completed.

Article 4.7.5.

Technical parameters for the implementation of a compulsory fallowing plan

Taking into account the categories of *aquaculture* production systems referred to in Article 4.1.5., as well as the measures described in paragraph 5 of Article 4.10.7., *fallowing* of an a*quaculture establishmen*t should start immediately after the following actions are taken:

1) removal and biosecure disposal of:

   a) all *susceptible species* of *aquatic animals* for the *disease* of concern; and

   b) all species of *aquaculture* animals which are capable of acting as *vectors* of the *disease* of concern, if indicated by *risk assessment*; and

   c) other species, if indicated by *risk assessment*;

2) removal of water in which infected stocks have been held, where feasible; and

3) appropriate *disinfection* measures have been completed on equipment and other contaminated materials in accordance with Article 4.7.4., under the oversight of the *Competent Authority.*

In addition to the considerations outlined in Article 4.7.2., the *Competent Authority* should consider that the duration of the compulsory *fallowing* period should be based on scientific evidence of the likelihood of a *pathogenic agent* remaining infective in the local environment, at a level likely to cause an unacceptable risk of re-*infection* of the *aquaculture establishment*. Factors to be considered include the extent of the *disease outbreak*, local distribution of *susceptible species* and possible *vectors,*the survival and infectivity characteristics of the *pathogenic agent,* and the relevant climatological, geographical and hydrographical conditions.

Article 4.7.6.

Disinfection prior to fallowing

Aquatic Animal Health Services establishing *fallowing* procedures should develop a detailed set of instructions for *disinfection* of *aquaculture establishments* prior to *fallowing* for approval by the *Competent Authority*. These instructions should be appropriate for the type of production system and circumstances. Disinfection should be completed in accordance with Chapter 4.4. and in the case of compulsory *fallowing*, in accordance with Chapters 4.10. and 4.11., taking into account current scientific knowledge on the efficacy of the disinfectants for the *pathogenic agent* of concern.

Article 4.7.7.

Restocking after fallowing

An *aquaculture establishment* that has been subject to compulsory *fallowing* should not be restocked until the compulsory *fallowing* period has been completed and permission from the *Competent Authority* has been received.

When restocking, care should be taken not to use stocks of *aquatic animals* that could compromise the objectives of the *fallowing* procedure. All farms subjected to compulsory *fallowing* should have a period of official *surveillance* after *susceptible species* have been restocked. The duration and intensity of the *surveillance* should be appropriate for the *disease* in question and subject to the requirements set out in Chapter 1.4., and to the relevant disease-specific chapter in cases of *listed diseases*.