ASC Public Consultation

Stakeholder Consultation Non-survey Feedback Report

Cleaner Fish

September – October 2023

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1. Summary of Feedback Methods

In addition to feedback received via online survey, ASC collected feedback in three other ways:

- Online public workshops and in-person targeted workshops with regional and international partners
- Direct one to one meetings and phone calls
- Emails with written feedback

This document collates feedback received outside of the online survey which can be reviewed in the dashboard on the ASC website.

Feedback Method	Individual Participants*	Stakeholders *
Workshops (GSI, CAB, General)	34	21
1:1 meetings and phone calls	3	1
Emailed feedback	1	1

2. Workshops

2.1 General Workshops

Workshop #1

Question	Respondent	Comment/Response
CF 9: Do you think ASC should allow cleaner fish reuse?		• The re-use of cleaner fish will bring bigger fish with higher feed need. Is this really in the benefit to the salmon farmer?
		• Yes, there is benefit to re-use, especially for wrasse (lumpsucker is debatable).
CF1: Do you think ASC should allow the use of wild caught cleaner fish?		• Disagrees with poll question • Means we are still taking from the wild and still able to hatch and raise Ballan Wrasse in the hatcheries

		• Do this with lumpfish as well, although use of lumpfish is supposed to be limited • We know BW are surviving (in hatcheries?) so this is a good way forward to improve. If not, then we are depleting local communities of BW. We know that genetics are local.
In terms of the farm supply of ballan wrasse, do you think it is at a level where it can supply the industry?		• The TWG conversations were in line with what you're saying. Everyone agreed that the gold standard would be to not have to catch them. • However, the industry believed that hatcheries were not yet in a position to supply everyone.
		• The reason for this is that there is too little sharing of information about methods of raising these fish. • Instead of focusing on lumpfish or other species being produced in lumpfish hatcheries, should focus on BW farming. If everyone starts doing it, we will gain the knowledge much easier/quicker than if only a few are doing this.
CF 2. Do you agree with the following: Access to feed should be available to cleaner fish daily and not withdrawn with the purpose of sea lice control? Everyone agrees		• Should we be more specific? Instead of saying they need feed which is obvious. We need a proper way of feeding. Since wrasse have a different way of feeding than lumpfish. So there should be different feeding plans per species. • Suggests looking into WAF box from Will Feeds. Seem to be favourable for the wrasse and work for lumpfish
		• Valid point. There are indicators for feeding plan and specifics could be included there. • Good to check WAF box technology
CF3: Do you agree with the following: the salmon site shall segregate cleaner fish in advance of any salmonid handling that requires removal of fish from the pens and for which the cleaner fish do not have a treatment need		• The fish welfare is what decides whether they should stay or be taken out. • If the catching is more stressful for the fish and causes more mortalities than obviously you shouldn't take them out. But if chemicals are bad, then you shouldn't take them out.

CF 10. Should ASC allow more than single reuse of cleaner fish?		• Debatable. One reuse is reasonable. Lumpfish grow and once they reach a certain size, they may present health issues. Once is a good reuse. Debate – Sebastiaan nearer to the topic.
		• Unsure but if the fish is in good health then it should be reused once. I went with precautionary answer.
		• Lumpfish should not be used more than once. They won't be useful after a certain size anyways. • But for wrasse, it is a complete different story. They grow for many years and keep cleaning the fish in the wild for parasites during many years. Therefore, this is a natural behavior for them, as long as they thrive. • In short, use as long as you can (as long as they are in a healthy situation). After one cycle of use in a salmon pen, assess if they are stressed or not. They may be lacking in shelter. Likely that a second generation of this wrasse would be more familiarized.
Is it true that their health depends on the health of the wrasse and that of the salmon population?		• Yes, as long as you put these wrasse on salmon farms that have the same or worse health level than where came from, then you could reuse them. • But if you need to put them in quarantine then you need to make the living conditions for these wrasse liveable. They need more than just shelter. They need a lot of space.
Would you limit the location? Would you put a limitation on how far away they can be re-used? Many questions around biosecurity and genetic introgression.		• As long environmental conditions are similar, you would find a bigger chance for the wrasse to thrive in the new site as well. So, their health situation needs to be taken into account. • But there shouldn't be a limitation on location. If the wrasse are placed in a location where there is no salmon, it would be better for them to be placed in a place where there is salmon. • Wrasse won't easily escape, even bigger wrasse. Even if if its X

		generation of salmon when they salmon is from 305 kilos. • Biosecurity needs to be taken into account. If you are coming from somewhere with an infected salmon/disease then of course, you should not move this wrasse.
CF4 Do you think it is realistic to develop and implement these monitoring programmes using the operational welfare indicators (OWI's) for cleaner fish? (everyone says yes) **How familiar is audience with these OWI?**		• Yes still realistic but we need to be asking ourselves: are we going to use these fish? Using cleaner fish will affect their welfare and there will be mortalities and there is no way to avoid this. • So we can use the proposed plan but we need to make sure we are doing it the right way. And as for long term improvement, this is a fair way forward. • Healthy fish not necessarily happy fish • Can use remote operated vehicles (?) to observe fish in the pens. You can see interactions between salmon and cleaner fish, if they are stressed or natural behavior. • Based on this and the knowledge from how a cleaner fish behaves in the wild, you could make a set of welfare observational indicators to help with this traffic light welfare proposal. If you put a feed block out and all fish rush to it at the same time, then you know it is not healthy behavior (likely starving etc.) supposed to be slow. And salmon also slow down when closer to cleaner fish.
		• Yes, our producers will continue to use cleaner fish (among other parasite control plans). Potentially not able to evaluate welfare just yet so call it Operational Health not Welfare Indicators. • Because a healthy cleaner fish is not necessarily a happier cleaner fish. Happiness not yet measurable. An unhealthy fish is likely an unhappy fish too. • We are much better at observing health indicators than welfare indicators for fish. We can do it for cattle, where we have developed systems over 20+ years to observe

		and use other metrics (I.e., blood samples). • We are not yet at the point in history to robustly evaluate welfare. We are evaluating health & welfare not only welfare (semantics). We still need to develop this line on farm.
CF 8. Do you consider that the timeline given to implement cleaner fish slaughter requirements is sufficient?		• Not a feasible timeline.
		• This is linked to the all species standard that we have already shared feedback on. • We don't understand why is there are different transition timelines for different species? Portraying responsible aquaculture and if you have the same label seems unfair. But for cleaner fish slaughter, anesthetic overdose?
		• We need to acknowledge and be realistic about the species that are not number 1 (salmon), technology not as advanced
Anesthetic overdose is allowed as CL are not for human consumption (already in the indicators). Practically, are there any concerns on this?		• Not for producers using CL. We would use electric stunning or anesthetic overdose. • Important not to confuse stunning with killing.
		• For stunning, lumpfish apparently tolerated stunning much more than wrasse or salmon. So higher voltage needed perhaps or overdose is better than stunning. But will require effort in sorting fish.
		• There is no species specifics on anesthetic overdose. It is allowed if you are not consuming them. • Noted the novima project: electric stunners…

Workshop #2

Any questions on presented content?		• Regarding minimum transport time of 4 hours – please explain the rationale

		• People would probably expect a maximum transport time. • TAG thought that
		Is approach to treatment covered off in the wider standard? [redacted]: yes. Cleaner fish and salmon: not covered
CF1		Allow use
CF2		Everyone agrees with this
CF3		Needs to be well done. There's a number of ways to segregate. Having a standard procedure good. Hides residing, time of treatment, other factors.
		Agrees with [redacted]. A lot more details to go into segregation, how long they should be restored,
		Agree with what they've said. How is this policed and cross-checked? [redacted]: Do you still remove them from cages – in Norway you have to, but not in Scotland (tarpaulin treatment). : better to leave them there [redacted]: what [redacted]said – based on what we've seen, more worried about removal of fish so segregation needed. For in pen treatments its less clear. Avoid additional stress. Echo the previous sentiments: if removed then segregated, maybe not needed if
CF9		[redacted]: difficult area to wade into. If you allowing reuse, what's the difference between 1 and 2 if you are doing risk assessments then why not allow more than 1.
		Echo [redacted]: risk assessment should allow you to reuse.
CF4		Traffic light system good but level should be set by themselves. Some level of what it should be as a baseline.

2.2 CAB workshops

Two workshops with CABs were conducted but they served a more informational purpose therefore no feedback or comments were received.

2.3 GSI Workshop

MS Teams Polls Results

Do you agree with the following: Access to feed should be available to cleaner fish daily and not withdrawn with the purpose of sea lice control?
Yes
Yes
Yes
Yes

Do you agree with the following: the salmon site shall segregate cleaner fish in advance of any salmonid handling that requires removal of fish from the pens and for which the cleaner fish do not have a treatment need.
Yes
Yes
Yes
Yes

Do you consider that the timeline given to implement cleaner fish slaughter requirements is sufficient?
No

Do you think ASC should allow cleaner fish reuse?
Yes
Yes
No
Yes

Do you think ASC should allow the use of wild caught cleaner fish?
Yes
No
Yes
No
No

Indicator 2.14a.16 f) to j) - Do you think it is realistic to develop and implement these monitoring programmes using the operational welfare indicators (OWI's) for cleaner fish?
Yes

Should ASC allow more than single reuse of cleaner fish?
Yes
Yes

3. One to One Meetings

Feedback# 1

Contact:

Company:

Background: Veterinarian working in the UK and Ireland. Previous experience working as a vet for fish and shrimp in Mexico.

Cleaner fish

1. Everyone would need training, not just information. From experience clients are asking training even for sales or finance people (example Turkish company who wanted to get their sales department trained on fish health and welfare so they would understand claims and would be able to feedback clients concerns to production).

4. Daily in hatchery.

5. CF use anesthesia as main culling method in hatcheries.

9. e) What happens when sites don't fallow (which is the most usual)? In that case annual review would be best .

12 and 13. Needs to be very clear what is expected in terms of procedures and written documents. The expectation is that clear evidence of compliance should be presented to the auditor.

14. 2 weeks is too short, at least 20 days or 3 weeks. Especially because lumpfish are now being fed agar blocks in the cages, LF adapt less well than wrasse to the blocks. Wrasse and LF blocks are different.

16. Reluctancy on the 4h mark, seems arbitrary (unless ASC is able to provide some reference). In Scotland at least 6h transfer, normal is 10h.

21. Where do the 6min/sec come from? Is it possible to get a reference? It should be clarified that the indicator only applies to wrasse.

22. A minimum time should be indicated, or otherwise there might be issues with swim bladder. More clarity needed seems there is some potential repetition with 21.

23. More clarity on accepted methods needed (maybe a footnote would suffice).

25. More clarity on who exactly.

2.14a.4.1 Mortality removal should be daily.

2.14a.13 Clarification on whereas moist feed and agar blocks are allowed.

2.14a.16 Sucker deformities shall be mentioned at least in guidance or footnote.

Table on water quality parameters: In the case of flow through systems, water flow should be at least risk assessed.

2.14b.1 For visual inspections cameras shall be accepted.

2.14c.1 Happy with timelines

2.14c.5 Spinal chord sectioning to ensure proper killing. This is use as a reassurance method when fish are killed by percussion , especially on site during moribund removal. It might be worth mentioning.

2.14c.8 Actual methods should be specified to know what is enough (maybe footnote).

2.16.6 This should be done by a recognized or accredited lab, or at least following a recommended technique that guarantees a certain quality level.

Feedback #2

Contact:

Company:

Other Participants at the meeting:

Cleaner fish PC replies

CF1: Farm and wild cleaner fish are important for [redacted] and they agree the use of both in a responsible way is okay. It was noted a clear reduction in other treatments, and sometimes no treatments are needed. It is very dependent of the location and availability the use of wild or farmed cleaner fish. In addition, it was noted that wild CF are more effective during summer, and farmed ones during winter. Norwegian food safety authority controls the wild stocks and declare annually the amounts permitted to caught. At the moment it is possible to maintain a stable delivery according needs.

CF2: Specific feed is used according to species, and they are fed every day. Feed registration in FishTalk.

CF3: According Norwegian Food Safety authority cleaner fish cannot be treated with the salmonids, because they are a different species, and treatments shall be specific according species. Cleaner fish are removed before treatments. Several

days are needed to remove the cleaner fish before treatments, but every time this is done.

CF9:_ CF10:_ Normally re-use at the same site i.e. move between cages at the same fish generation before performing the move it is done a risk assessment. Risk assessment dependent.

CF4:_ Cleaner fish welfare is assessed exactly the same way then salmon so it is possible to do it. All health and welfare data registered in FishTalk. No issues with the OWI's for CF.

CF8: Cleaner fish are removed from pens as possible before fish harvest (also legislated). Fish are euthanised using an overdose of anaesthesia at the farm and if some fish goes with the salmon to the processing plan the same will done there.

General questions/concerns

1- Fisherman training. How it will be performed, and control? Farm responsibility???
2- Annex 1 is not included at the CF draft. What is there?
3- Lumpfish in the wild can stay 12 hours outside water and 12 hours inside water. Why these 15 secs maximum outside the water permitted?
4- No concerns apart of the above to comply with the CF H&W draft indicators. Maybe a matter to put the papers on the right folders.

Feedback # 3

1. Do you think ASC should allow the use of wild caught cleaner fish?

No. Even though it is tempting to use wild fish as there are not enough farmed cleaner fish on the market, a series of risks follow this decision: With the risk of escapees at the farm it is not justified to catch wild wrasse in England, deploying them in Scotland and not expecting them to crossbreed thus changing the genetic baseline in the population. With the risk of depleting an entire population of local wrasse not knowing what the impact is on the local ecosystem it is not justified to only use the wild caught fish that have been living for years to only be used for 1, maximum production 2 cycles (very unlikely as wild caught wrasse have difficulties adapting to the new environment. Wild caught wrasse are prone to have pathogens and viruses on/in their body that might pose a risk for outbreaks either on the wrasse itself or, even worse, on the salmon. There is some evidence that wild caught wrasse are probably performing worse than "tame" farmed wrasse. Neither do they have better welfare than farmed wrasse as the process of catching, storing, transporting, deploying and accommodating in the salmon environment brings a lot of stress with it. Costs connected with long-distance transport (Sweden-Sør Trøndelag) are of high impact and won't do the wrasse any good in terms of welfare.

3. Do you agree with the following: Access to feed should be available to cleaner fish daily and not withdrawn with the purpose of sea lice control?

Yes. Although the term cleaner fish is too broad of a term as we are speaking of different species with completely different needs. A lumpfish requires their feed to be closer to the surface as they prefer this depth. Wrasse also have different needs, goldsinny will not easily get out of their refuge if it's too exposed and the feedstation is too far away from the safety of the shelters, maximum 2 meters. Ballan wrasse and corkwing wrasse are not as bound to the refugees as the goldsinny and can be observed more comfortable with the salmon. Depths of feeding stations should be from 3-15m for wrasse and several stations amid the refugees will ensure all fish have the opportunity to satisfy their needs. Sea lice do not provide the nutritional profile needed by all cleaner fish species to support a healthy, natural food profile that reflects the diet in the wild

5. Do you agree with the following: the Unit of Certification (UoC) shall segregate cleaner fish from salmon in advance of any salmonid handling that requires removal of fish from the pens and for which the cleaner fish do not have a treatment need.

Yes. The law in Norway states that all cleaner fish need to be removed from the pen prior to any handling event that does not include the cleaner fish. This is due to “no animal shall undergo a treatment if it is not susceptible for the reason why the treatment happens in the first place (such as salmon lice treatment)”. The law in Scotland states that “Where possible, cleaner fish should be removed from the crowd or prevented from participating in the crowd prior to any salmon operation, such as thermolicing, hydrolicing, bath treatments or wellboat treatments.” It must also be said that the cleaner fish shall be segregated in the most gentle way possible to avoid unintended loss/mortalities.

7. Indicator 2.14a.16 f) to j) - Do you think it is realistic to develop and implement these monitoring programmes using the operational welfare indicators (OWI’s) for cleaner fish? 8 Yes But it needs saying that the fish health welfare management system should also lay out in detail how the UoC plans to improve from the previous cycles when it comes to mortality and welfare, or lack of, where "j - traffic light" comes into place. But what are the consequences if red?

9. Indicator 2.14b- Is it realistic to develop and implement the "Cleaner Fish Handling Management Plan"?

10. Yes It is crucial to have such a plan in place, how else should these sorts of things be improved without a concrete plan? It is only realistic if a concrete plan is made and can be followed up:

2.14b.1i: could the farmers not abuse this as an excuse to starve the cf species for 2 days so "they eat more lice"? I know for a fact that this has been done and perhaps is still being done at farms when given the opportunity. Better with max 1 day starvation or give concrete examples for when they could starve them for 2 days.

2.14b.1o: post handling - I miss a duration period here. What shall be concluded as post-handling period? 24h, 1w, 2w, 1m? 2.14b.2: if not mentioned elsewhere, this should be done 1w prior to handling as it will take time to segregate these fish from the salmon without crowding.

11. Do you consider that the timeline given to implement cleaner fish slaughter requirements is sufficient?

No If it means becoming effective in 2025, then the answer is no. This is still 1,5 years away and yearly many millions of cleaner fish end up at the slaughterhouse without a waterproof plan to segregate them before this happens.

13. Do you think ASC should allow cleaner fish reuse? Yes see answer pt 15)

15. Should ASC allow more than single reuse of cleaner fish?

Yes why only once? It does make sense for lumpfish as they 99% certain are too big after a whole production cycle to eat any sea lice, but for wrasse it is a different picture, especially if they are farmed wrasse who start out small and throughout the production cycle they are getting larger and thus they could be further used with 2nd year salmon for as long as they remain healthy and perform no risk towards salmon in form of disease or eye-picking. It would be very wasteful to cull them just because they have lived through 2 production cycles. Indicator 2.14c.12 already ensures whether wrasse can be reused or not.

17. Do you consider the proposed indicators adequate?

No.

12-13: how will this be followed up? one thing to put down a rule, next to implement follow-up

14: good to implement an acclimation period of 2 weeks. If no shelters in hatchery are used then these should be used in the acclimation period as to accustom the fish where they can seek refuge in the pens.

15.h: which table? Should different species be considered as one?

16: shouldn't there be a max value here?

21: lumpsuckers are not a part of this so should cleaner fish not just be wrasse?

2.14a.0: more and more proof comes that lumpfish are not suitable for the warmer waters as is the case in Scotland, only during wintertime for a short period they are suitable. Recent studies indicate that lumpfish completely stop eating lice when they reach sexual maturation and are from then on pointless to have in the pens as they will most likely compete with the salmon for salmon feed.

2.14a.9: It is crucial for regular follow ups, especially two weeks after deployment to establish cleaner fish condition before it potentially deteriorates any further --> UoC staff or actual health team?

2.14a.14: Feeding stations adapted to species used (lumpfish (close to surface) contra wrasse (different depths close to refugee))

2.14a.15.5: Hides/shelters/refugees must also be as little deteriorating as possible for sustainable environmental reasons (plastic pollution)

2.14a.15.6: The shelters must accommodate for the salmon to naturally seek out these stations and the cleaner fish must feel safe within them to actually perform their cleaner abilities.

2.14a.18: the term cleaner fish is too loose, how will ASC know what species is being used and how long this species will be in the pen, unless more details are supplied? or who will follow this up ?

2.14a.19: survival rates at the end of the cycle for the different species of cleaner fish is too long of a period, would be better with monthly or quarterly reporting as it is known that condition of cf species can deteriorate quickly.

2.14b.2: if not mentioned elsewhere, this should be done 1w prior to handling as it will take time to segregate these fish from the salmon without crowding.

2.14c.1: Lumpsuckers are known to tolerate higher stunning levels(p.38-40) than salmonids and wrasse and even though they can still be electrically stunned, the requirements are significantly different from salmonid stunning. 2.14c.13: why only "the cleaner fish destined for reuse"? Few slaughterhouses are equipped to cull/segregate cleaner fish, lumpfish are especially hard due to their irregular shape and varying sizes. The wellboats have the same problem with their dewaterer and also in the pens it is hard enough to segregate them. What solution should be implemented here to increase the amount of captured fish?

2.14c.10: this will promote the farmers to just put them together with the salmon and slaughter them. We should promote the farmers to reuse them to their best ability. The goal should be as little mortality as possible, perhaps the same as salmon. atm it's >50%... Lumpfish and Ballan wrasse are a good source for EAA (essential amino acids) and have the right FA (fatty acids) to fill the daily required amount of EPA+DHA, this shouldn't go to waste. Or use it as an attractant to fish feed such as Nofimas project with King Crabs and lumpfish attractant..

2.16.19: There should also be included "antiparasitic treatments" as these might be used when e.g. lumpfish are full of Caligus elongatus.

2.16.21: Very good! But lack the following: The UoC shall take preventive measures and evaluations in order to prevent the same occuring disease outbreaks in the future.

19 Is there any topic missing from those covered by the proposed indicators?

● Evaluation of last (two) production cycle(s) on where the weaknesses were and how the UoC will improve these and evaluate how and what to improve on to increase better welfare and survival rates for cleaner fish

● Predation on cleaner fish within and outside the pen ○ Cod and other fish (sometimes also larger predators such as seals) are often present around the pens to eat excessive feed falling through the nets. These fish will not hesitate to eat a wrasse poking halfways (see picture 1 down below) through the net/escaping the pen into the open waters where they normally are not present (ref: personal rov observations).

● Minimum & maximum sizes for all species depending also on mesh size of the net to avoid wrasse to escape or get stuck in the net as it almost fits through. ○ In Norway: As of now all wrasse have a minimum allowed size for use in fish farms, but only Ballan wrasse has a maximum size. ○ In Scotland: All wrasse have both a minimum and maximum size for use in fish farms. ○ Both these regulations are based on minimum size where fish most likely won't escape the pens, without taking specifics into consideration and maximum size due to maturation in the wild, not taking into consideration whether it's a male or female that has been caught, males often are smaller thus a larger proportion of males than females can be selected.

● capped ages ○ Unsure what size fish are at different ages but selectively catching the wrasse based on size will remove fish from the same age-group from the local pool increasing the difficulty for the population to re-establish the lost individuals. ○ Large knowledge gap here.

● Sexual maturation of cleaner fish inside the pens ○ Lumpfish will be able to grow large inside the pens living on the different feed sources available as they are opportunistic and have a large variety of diet. This is negative both for their delicing ability as that reduces when they reach a certain weight and the gain is outweighed by the cost of catching these small snacks, but also the lumpfish can reach sexual maturation when they reach around 150-200g of weight which easily happens within the first year inside commercial cages and with that their welfare decreases and they are less likely to pick lice of salmon when in this stage.

● Overwintering details? ○ Wrasse are known to take it more slowly when winter sets in and often retract to deeper waters where the temperature is more stable, this will also be the case inside the cages but only until the net prevents them from going further down. They are then stuck on the bottom and will not try and seek shelter in the hides that hang from 0-10/15m depth but rather "lay" on the net bottom and thus become more exposed to fin erosion and with that decreased welfare. ○ ASC should give clear guidance on how to avoid this or at least minimize the risk of it happening.

● Should ASC not also tell what good husbandry is? Which requirements, etc... ○ Or at least refer to where farmers can obtain this information/knowledge? such as e.g. the Norwegian "rensefiskskolen". Picture 1: Goldsinny through mesh-sizes - Research project of Manu Sistiaga

4. Emailed feedback

Feedback # 1

CF1: No,

The salmon industry overfished several cleaner fish populations by the sheer magnitude of their use. Lumpfish can all be hatchery raised at this point, while some wrasse species wild caught are still used but industry is moving away from them.

CF2: Yes

CF3: Yes

CF4: Yes

CF.8: No. We are unaware of any use of cleaner fish by any industry outside of salmon and sea trout. Outside of salmon and trout, these transition windows are excessive for either the main farmed fish or any cleaner fish that might use.

CF.9: Yes

CF. 10: Yes

Feedback #2

W.r.t Cleaner Fish

ASC should include circularity in their requirements and consider the most sensible usage of cleaner fish if they cannot be used for human consumption.

Additionally at least the same animal welfare requirements as for other species should be applied for cleaner fish.

Feedback #3

Q #	Question	Answer
1	Do you think ASC should allow the use of wild caught cleaner fish?	No
2	If not, please explain why.	The continuous demand for wild caught cleaner fish and wild caught brood stock puts pressure on wild populations. Also, too little is known about these populations to know the full impact the fisheries have on the wild cleaner fish populations. Wild caught cleaner fish fisheries have no legislative management – we have very little information of the state of the wild stocks.
3	Do you agree with the following: Access to feed should be available to cleaner fish daily and not withdrawn with the purpose of sea lice control?	No
4	If not, please explain why.	The requirement needs to ensure 'access to adequate feed and nutrition', In order to avoid any restriction in feed supply that is detrimental to welfare. There should be a feeding schedule

		which results in good welfare and health outcomes
5	Do you agree with the following: the Unit of Certification (UoC) shall segregate cleaner fish from salmon in advance of any salmonid handling that requires removal of fish from the pens and for which the cleaner fish do not have a treatment need.	No
6	If not, please explain why.	We agree that UoC shall segregate cleaner fish from salmon in advance of salmonid handling that requires removal of fish from pens for which cleaner fish do not have a treatment needed. Moreover, we think that this requirement needs to be expanded to include handling and other activities inside pens that threaten the welfare of cleaner fish, for instance, maintenance operations.
7	Indicator 2.14a.16 f) to j) - Do you think it is realistic to develop and implement these monitoring programmes using the operational welfare indicators (OWI's) for cleaner fish?	Yes
8	If not, please specify the challenges.	
9	Indicator 2.14b- Is it realistic to develop and implement the "Cleaner Fish Handling Management Plan"?	Yes
10	If not, please specify the challenges.	
11	Do you consider that the timeline given to implement cleaner fish slaughter requirements is sufficient?	Yes
12	If not, please explain why.	
13	Do you think ASC should allow cleaner fish reuse?	No
14	If not, please explain why.	There are several welfare issues related to the use of cleaner fish such as high mortality and injury risks and cleaner fish can be subject of aggression. It is unlikely that cleaner fish live naturally amongst high stocking densities of the fish which they clean of parasites, and this is likely to lead to stress in the cleaner fish and the risk that they suffer aggression. The reuse of each individual will increase the probability that they suffer in salmon pens.
15	Should ASC allow more than single reuse of cleaner fish?	No
16	If yes, please explain why.	There are several welfare issues related to the use of cleaner fish such as high mortality and injury risks and cleaner fish can be subject of aggression. The reuse of each individual will increase the probability to suffer in salmon pens.

17	Do you consider the proposed indicators adequate?	No
18	If not, please explain why.	Record keeping of suppliers' mortality and deformity reduction programs should be inspected and the data systematically assessed by Aquaculture Stewardship Council with a view to introducing mortality thresholds. 2.16.12 Additionally, the UoC should not use antimicrobials listed as Critically Important Antimicrobials for Human Medicine by the World Health Organisation on a repeat basis. 2.14b.1 o). Additionally, time for normal appetite to return should be monitored. 2.16.8 - 10 The meaning of 'every UoC using antiparasitic treatments except for salmonids' is unclear Monitoring of water quality parameters in RAS systems should be continual with alarmed systems.
19	Is there any topic missing from those covered by the proposed indicators?	Cleaner fish should not be used in aquaculture. We do not support the introduction of welfare standards for cleaner fish without also introducing requirements to take preventive measures such as pen design, lice skirts, fallow periods, salmon numbers, salmon density and site location. ASC should foresee the phasing out of the use of cleaner fish and a future ban. Instances of cleaner fish stocking and the number of cleaner fish stocked should be recorded and these records should be inspected by ASC alongside the mortality reduction program. Please see Compassion in World Farming resources related to the welfare and environmental issues related to the use of cleaner fish here: https://www.compassioninfoodbusiness.com/media/7444184/cleaner-fish-welfare.pdf https://www.compassioninfoodbusiness.com/media/7440981/sea-lice-management.pdf

Feedback # 4

1. Do you think ASC should allow the use of wild caught cleaner fish?

   No

2. Do you agree with the following: access to feed should be available to cleaner fish daily and not withdrawn with the purpose of sea lice control?

No

If not, please explain why.

The indicator needs to ensure 'access to adequate feed and nutrition'. Feed 'withdrawal' normally refers to the complete withdrawal of feed, while the indicator needs to ensure there is not a restriction in feed supply that is detrimental to welfare. There should be a continual feeding schedule which results in good welfare and health outcomes.

3. Do you agree with the following: the Unit of Certification (UoC) shall segregate cleaner fish from salmon in advance of any salmonid handling that requires removal of fish from the pens and for which the cleaner fish do not have a treatment need.

No

If not, please explain why.

Threats to welfare from routine salmonid handling and management procedures are not restricted to instances requiring removal of fish from the pens. For example, net cleaning procedures can cause cleaner fish mortalities. This indicator needs to be expanded to include handling and other activities inside pens that threaten the welfare of cleaner fish.

4. For Indicator 2.14a. 16 f) to j), do you think it is realistic to develop and implement these monitoring programmes using the operational welfare indicators (OWI's) for cleaner fish?

Yes

5. For Indicator 2.14b, is it realistic to develop and implement the "Cleaner Fish Handling Management Plan"?

No

If not, please explain why.

It is feasible to develop and implement the "Cleaner Fish Handling Management Plan". Most of its content is appropriate for ASC's standard.

However, it is not appropriate to define a single maximum fasting duration for all cleaner fish. Ballan wrasse do not have a stomach and they require continuous feeding which and the standard should not allow restricting or withdrawing their feed.

6. Do you consider the timeline proposed to implement cleaner fish slaughter requirements is sufficient?

Yes

7. Do you think ASC should allow cleaner fish reuse?

No

8. Should ASC allow more than single reuse of cleaner fish?

No

9. Do you consider the proposed indicators adequate?

No

If not, please explain why.

Record keeping of suppliers' mortality and deformity reduction programs should be inspected and the data systematically assessed by Aquaculture Stewardship Council with a view to introducing mortality thresholds.

2.16.12 Additionally, the UoC should not use antimicrobials listed as Critically Important Antimicrobials for Human Medicine by the World Health Organisation on a repeat basis.

2.14b.1 o). Additionally, time for normal appetite to return should be monitored.

2.16.8 - 10 The meaning of 'every UoC using antiparasitic treatments except for salmonids' is unclear

Monitoring of water quality parameters in RAS systems should be continual with alarmed systems.

10. Is there any topic missing from those covered by the proposed indicators?

Cleaner fish should not be used in aquaculture. We do not support the introduction of welfare standards for cleaner fish without also introducing requirements to take preventive measures such as pen design, lice skirts, fallow periods, and site location. ASC should foresee the phasing out of the use of cleaner fish and a future ban.

Instances of cleaner fish stocking and the number of cleaner fish stocked should be recorded and these records should be inspected by ASC alongside the mortality reduction program.

11. Do you have any other general comments on the proposed indicators that you were unable to make in previous sections?

    Proofreading points:

    2.14a.15.6. This is about refuges, not refugees. To be clear it should be 2 sentences. 'The UoC shall not locate hides and refuges in close contact with the cages' sides. They shall be in a location that facilitates salmon and cleaner fish interaction.'

    OIE to be updated to WOAH throughout.

Feedback #5

Requirements for cleaner fish reared in salmonid cages: suggest to replace cage with pen.

2.14a.5: Culling of cleanerfish is described in different terms in this document. [redacted] suggest to stick to one term- fi. culled in a humane way. Stunn and killed might be used in the harvest section if preferred.
2.14a.xx: X are conditioning the cleanerfish, but important to keep this list open as not all hatcheries will condition to all listed factors.
2.14b.1: X only monitor oxygen and temparture during handling processes of cleanerfish in seawater in the hatcheries. Suggest to remove pH from this list.
2.14b.xx: X see the need for specification here, suggest a formulation like: ..., allow for a total transport time from hatchery to deployment for a minimum of 4 hours.

2.14a.xx: This is the goal, but some times there will be deviations to this. Important that this indicator is not prohibitting a longer supply chain.

2.14a.xx: In X we do not have specifications of the speed. This will be hard to follow up on. X suggest to take out specification of speed.

2.14a.xx: X suggest rephrasing to culled in a humane way(same as later in the document)

2.14a.xx: In X Norway the limit is 1 km, and we do not see any win by an increase to 5 km. In several areas it will be hard to source cleanerfish locally if a 5 km zone in general is demanded and then cleanerfish willl have to be sourced from more distant areas and this point will collide with 2.14a.xx sourced from the shortest possible supply chain. X strongly suggest to replace 5 with 1 km.

2.14a.5: Suggest rephrasing to The UoC shall collect moribund finfish daily and cull them in a humane way.
2.14a.xx: Risk assessment is carried out, but in many cases small batches are deployed over a period of time and Mow will not risk-assess all of these separately. The list of factors that need to be considered is too long and detailed. X suggest this point 2.14a.xx is rephrased to: The UOC must carry out a pre- deployment risk

assessment before deploying a new cleanerfish species (wild- caught wrasse, farmed ballen wrasse or lumpfish) in to a salmon site.

2.14a.xx: X is of the opinion that "at all times" is not realistic or desiraeable in the pens and recommend to rephrase to "daily access to feed". X specifies: Important that this does not involve growth as it does in salmon. This will be very hard/ not possible to achieve.

2.13.6: In X Norway it is necessary to use moist pellet for wild- caught broodfish in the hatcheries. The ingredients will be cooked. This fish will not be deployed with salmon.

2.14a.16: c. There is no do demand to list up potential predators for salmon. X suggest that this is taken out.

f. X suggest to follow the same parameters as for salmon here.

g. In X there is an internal procedure that requires morphological scoring every third month. The demands for CF must not be stricter than for salmon. X strongly suggest that this is changed to every 3 months also for cleanerfish.

h. X strongly recommend to rephrase to register behaviour when it is abnormal

j. This is not implemented today and is very labour- demanding. X Norway use red for when the authoroties will be notified. X strongly recommend a modifcation of this.

2.14a.18: Survival rates at the end of the cycle must include all fish culled during the salmon cycle. If we want to secure good fish welfare and control of the cleanerfish inventory, which are expected from us, we have to realize that timing in the pen is more important than time in the pen. Culling= control of population. X strongly recommend to rephrase to "survival rates including controlled culled during production cycle".

Parameters / Culture System

Cleanerfish is not reared in freshwater at any times, X suggest to remove this column.

Turbidity measurement is not required or done for salmon in sea in all X`s business units. X strongly recommend to change to "risk- assessed" in flow- through.

X recommend a change to monthly measurements of CO2.

Measurement of pH is not a requirement for salmon, X recommend to take it out.

X recommend to change to risk- assessed. Ammonia is not relevant in flow-through in our cleanerfish sites.

2.16.12: There is limited access to speicies- specific data for treatment of cleanerfish. It is a possibilty that one might need to use data from other species. X suggest to rephrase.

2.14b.1: g. In X the cleanerfish health is followed up by monthly visits from fish health personell looking after both salmon and cleanerfish. A two week requiremnet both for the fitnesss and health prior to treatment will be almost impossilble to meet. X strongly recommend to remove this indicator from the standard.

i. Repated form earlier: X strongly recommend to follow the regulations from the Norewgian food authorities which is 30 seconds.
j. X Norway risk assessment for starving cleanerfish is 3 days or 72 hours. X strongly recommend 72 hours or that we follow standard for salmon.