

Regulatory Challenges in the Salmon Industry Today

The salmonidae industry has shown a rapid and surprising recovery and this year it could even surpass the production of the pre-ISA period. What cannot wait is the regulatory framework aimed at protecting the environmental and sanitary assets in increasing productivity conditions. The authority has greatly advanced in regulatory and institutional matters, but there is still work to do in the scope of substantive issues.

In Chile, the salmonidae industry has gained an increasing economic, geopolitical and social relevance. It has not only had a strong impact in the southern region of the country, by opening development poles, creating jobs and promoting the activity of associated goods and services, but it has also become an increasingly important export product. As a matter of fact, within the fishing and aquaculture exports, which totalized US\$3,446 million by September 2012 – equivalent to 6% of the domestic total exports– the main product was the Atlantic Salmon (representing 31% of the total value), followed by the Rainbow Trout (20.2%) and the Pacific Salmon (12.4%). This shows the current relevance of aquaculture in the sectoral activity, since its contribution to the country's exports has been superior to that of the extractive fishing since 2000. In fact, salmon is the second best selling product abroad (the first one is copper), surpassing the different fruit varieties, cellulose and wine.

Even though the industry has enormously grown, overcoming some great difficulties, the institutional and regulatory framework is not on equal terms with its development and, in fact, it has not been able to consolidate yet. Although a Division of Aquaculture was recently created in the Undersecretary of Fishing (Subpesca), and there is a prolific (maybe even excessive) sectoral regulation, the state's efforts seem still insufficient to comply with its main objective, which is protecting the sanitary, environmental and other conditions which are necessary for the industry's long-term growth and sustainable development. We should remember that aquaculture uses a unique and essential good, which has to be shared by all stakeholders¹: water. Thus, and because of the sole fact that there are patrimonial and competence aspects at stake between the industry's

different actors, it is impossible that private companies organize themselves on their own, self-regulate and manage their own sector with a state vision.

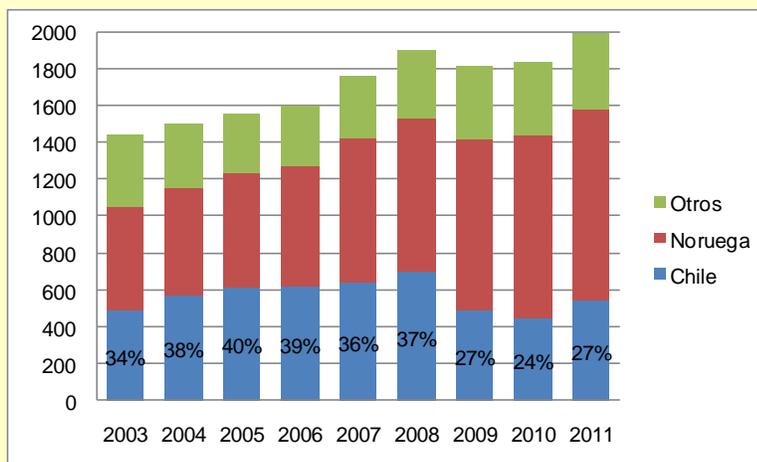
The ISA-virus crisis accelerated the adoption of emergency measures, but the regulation and implementation of the ongoing regulation has to be completed, and at the same time, it is urgent to make an institutional upgrading according to the conditions required to guide and manage the sector's destinies.

General Backgrounds

The salmon industry developed in Chile only 30 years ago, based on concessions with floating cages. The industry developed gradually, and new concession areas were required, which steadily increased the production levels. The granting of concessions was made with no greater concern for the capacity of the water body to bear an increasing production, since eventual sanitary or environmental risks derived from the system's overload were not foreseen. The Environmental Qualification Resolutions (RCA) started to be required only as of 1997, thus incorporating environmental variables to the granting of concessions.

Chart 1

WORLD PRODUCTION OF SALMON AND TROUT (THOUSAND GROSS TONS AND % OF THE TOTAL)



Source: SalmonChile

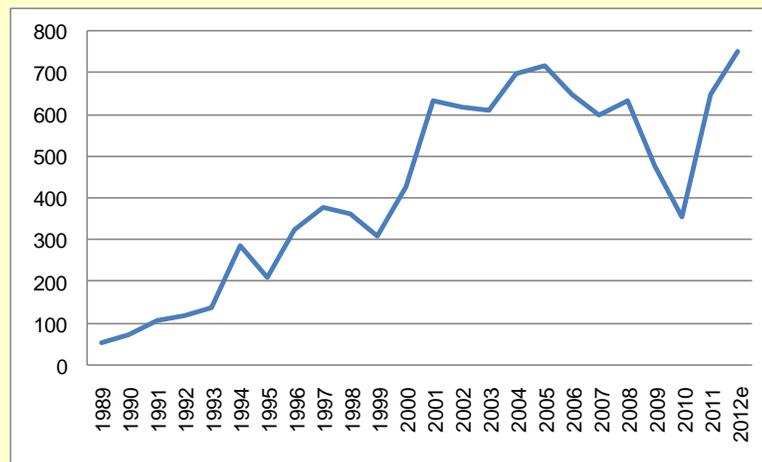
Towards the end of the past decade, the production of Chilean salmon and trout had substantially increased and became visible at international level; proof of this is that the USA introduced a claim against our country in 1999 for alleged dumping practices. The industry learnt from this experience, which resulted in more professionalization and competitiveness.

On the other hand, the regulation was slowly adjusted to the increasing aquaculture activity. The new requirements included greater distances between concessions in order to prevent spreading risks, and more control over the ova imports, but many of these measures were erroneously interpreted as entry barriers, which the parties concerned wished to impose on the new stakeholders.

Towards the end of 2006, when the industry already had a production over 600,000 tons, serious sanitary problems started to be evident. And the extreme sanitary weakness of the sea biomass triggered, in June 2007, the ISA-virus crisis. Dissemination was extremely rapid and extensive, partially due to a deficient regulation and the lack of adequate institutional framework. As a consequence, the industry was reduced by half; there were massive dismissals and the biomass stepped backwards several years. The eruption of the Chaitén Volcano, which forced to transfer the infected biomass, also contributed to the virus spreading.

Chart 2

SALMON HARVEST (THOUSAND TONS)



Source: Sernapesca

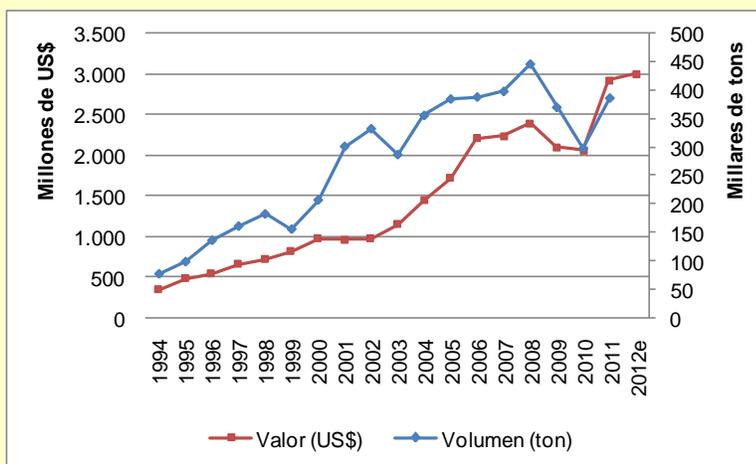
* Self-estimation. By September 2012, the harvest yielded 423 thousand tons.

In order to face the devastating effect of the crisis, the Salmon Committee was created on the following year (2008), which proposed several regulatory measures: it was recommended to fix greater distances between growing sites, but the authority preferred not to infringe the acquired rights and proposed, as a second option, to create “neighborhoods”. In them, each growing site is forced to sow and harvest in fixed periods, with simultaneous fallowings. Furthermore, *smolts* (small fish) have to come from safe sources, due to the risk of importing ova from non-certified

origins. An additional measure was to recognize that there were many concessions in shallow corridors and spaces, which demanded relocation.

Chart 3

SALMON AND TROUT EXPORTS



Source: SalmonChile

The authority, conscious of the great externality within the aquaculture activity –since the behavior of some has an impact on the sanitary and environmental condition of others- started to undertake a series of actions tending basically to compensate for the deficiencies in regulation matters and concession planning. Among them, several measures were taken (over 40), many of them concerning procedure improvements, and some sectoral laws were enacted. Anyhow, the crucial factor was the implementation of a new productive model focused on the activity's sustainability, which allowed not only controlling the crisis, but also recovering the industry. This model, which is permanently subject to adjustments, improvements and reviews, included the redesign of the areas where aquaculture takes place –with the creation of macrozones, neighborhoods and corridors- sanitary regulations and programs, improvements in the procedures and greater powers to Subpesca and the National Fishing Service (Sernapesca). Since then, the main objective has been to protect the environmental and sanitary patrimony, thus allowing the activity's sustained development.

There is also a series of ongoing improvements that are being dealt with in the bill modifying the General Fishing and Aquaculture Law. If its definite approval comes through, these changes will enable to improve: (i) data delivery and collection; (ii) transfer process of the aquaculture concessions (among others, leaving the Concession Register in the hands of Subpesca); (iii) research, by creating the Aquaculture Scientific Technical

Committees as consulting and advising organisms on relevant scientific matters (environmental, sanitary and physical planning) for managing the aquaculture activity; (iv) transparency, by defining the delivery of false or incomplete information as an infraction and applying the corresponding sanctions; (v) control, by creating new branches of Sernapesca which strengthen the institution's work; and (vi) the productive development possibilities of the XII Region, by allowing to undertake aquaculture activities in maritime zones that are part of National Parks. These measures point in the right direction, but they do not necessarily solve the substantive issues.

The Pending Challenges

In spite of the progress achieved, there are still several pending regulations and programs which are needed to protect the sanitary asset which took so much for the country to get some years ago. It should be remembered that, recently, the National Director of Sernapesca expressed his concern for the parasite loads increase in salmons and the mortality rates increase in the sector. This deserves to advance faster in some issues, more so when the recovery of the industry has been faster than expected, generating a production increase which could entail greater environmental and sanitary risks.

In the more immediate subjects, we find the promulgation of the farming density regulation, which is on the edge of being published and seeks to prevent the occurrence of new sanitary or environmental crisis, due to an overload in the number of fish that a water body can bear. Essentially, the measure aims at defining the number of fish sown in terms of the environmental performance (INFAⁱⁱ), sanitary performance (loss of species) and productive performance (sea sowing schedule). Information has come out which talks about incentives at growing site and neighborhood levels, rewarding (or punishing) the individual and collective performance with higher (or lower) maximum sowing capacities. The proposed system would allow adjusting the admissible densities in terms of biosafety levels or risk score, which would be reflected upon load capacities that would vary over time and between neighborhoods and sites.

It should be noted that this density regulation has been expected for a long time, but it does not solve the overproduction issue in the short term, which is what puts the sanitary and environmental patrimony at risk. As a matter of fact, the regulation does not directly deal with the problematic generated by a biomass excess in the sea, it is rather a reactive system when changes in the biosafety levels occur. Instead, other countries regulate the number of fish by geographical area; however, Chile lacks legal powers to do so.

Another work front is the improvement of the sanitary regulation (RESA), which seeks to improve its application and better define the convenience of

taking sanitary measures, besides dealing with specimens' transport issues, net washing and fish sowing at growing sites, among others. One of the most important measures will be to establish a risk score to define next cycle's sea sowing, based on losses or sanitary performance of the ongoing cycle, which have immediate effect on the production levels. Furthermore, the quorum standard is going to be adjusted to make agreements in the neighborhoods, a necessary measure to facilitate commitments in common interest matters which enable better sanitary performances.

Concerning the planning of concessions, the process still looks slow and difficult. The distances between concessions have not been increased, and although corridors have been defined (sanitary fireguards) relocation has not been put into practice. Currently, the X and XI regions have no more space left, since concessions were previously granted without considering sustainability criteria. It is quite clear that areas fit for aquaculture have a limited capacity for the concessions' simultaneous operation, which calls for avoiding overloads. Thus, the priority is to make a planning of existing concessions, and approximately 270 concessions should be relocated. Today, this proceeding takes close to 5 years, a term which needs to be reduced. The concessions' exchange flexibility is also a crucial factor in this process, which requires greater transparency and information, and streamlining the promulgation of missing regulations.

After all, planning is a key issue for the sustainability of the salmonidae industry's activity and its solution does not seem easy. Incentives must be created so that concession owners search for spaces to relocate, and thus increase distances in order to prevent disease spreading. Still worse, it is not clear what will happen as of April 2015 when the restrictions for new concessions are lifted. Additionally, there is a matter of great relevance which has not been solved yet, which is the lack of scientific information and knowledge to deal with the different subjects mentioned above, in a more efficient and accurate way. While science and research for building indicators and guiding the environmental, sanitary and geographical regulations based on technical criteria are not available, it will be hard to achieve the sustainability goals set forth. Probably, only time and data assembling will allow relying on the necessary information for this purpose.

Another relevant issue is the forfeiture clause for non-compliance by the concessions. With the current legislation, owners could lose their licenses for non-use, which would force to put into operation more than 300 concessions in the following two years. This clause does not only inhibit the necessary following of the sites –which reduces the disease spreading risk– but it also means to overload zones which are already saturated. Until now, this issue has been dealt with by way of incorporating the non-used concessions in the management plans, but a more definite solution is required.

On the other hand, a series of regulations have been agreed, but they have not been implemented. In addition to the concessions' relocalization processes, maximum densities by species and changes to the RESA, the promulgation of a regulation for bidding new spaces, the regulation of assembling points and experimental farming, specific SRS sanitary program, among others, are still pending. The authority's role is irreplaceable in the creation of these policies, since self-regulation has been complex and not very effective, as a result of a series of interest conflicts among the industry's own stakeholders.

Finally, in relation to the institutional framework there is much work ahead. The capacity of Subpesca and Sernapesca to develop the regulatory and policy framework and to control the activity is quite limited today. In this context, it is necessary to strengthen the institutional framework so that, based on technical grounds and without sectoral pressures, the development of aquaculture in the country can be promoted. Likewise, it is necessary to strengthen the monitoring role of the authority, with objective criteria and adequate procedures which have been missing until now, in order to play an efficient role without arbitrary acts.

Conclusions

The salmonidae industry has shown a rapid and surprising recovery and this year it could even surpass the production of the pre-ISA period. So much so that we have observed an important price reduction in the international markets, also fostered by a greater production in Norway, our main competitor. The economical adjustment will finally be solved by the market's own action. However, what cannot wait is the regulatory framework aimed at protecting the environmental and sanitary assets in increasing productivity conditions. We have already noted some incipient sanitary problems – such as Caligus or SRS-which compels to deal with the still pending matters.

The authority has greatly advanced in regulatory and institutional matters, but there is still work to do in the scope of substantive issues. These include: (i) new geographical planning of the concessions: it is necessary to increase distances, create incentives to relocalize farming sites and look for new fitted areas, different from the existing ones which are already saturated; (ii) definition of the system's maximum load capacity from the sanitary and environmental point of view: it might need a legal modification and above all, it requires to generate more knowledge and research. Additionally, there is the need to carry forward the density regulation and to implement others which have been already approved; and (iii) to strengthen the aquaculture institutional framework and the monitoring capacity of the sector.

In brief...

SALMON INDUSTRY:

- In Chile, the salmonidae industry has gained an increasing economic, geopolitical and social relevance. However, the institutional and regulatory framework is not on equal terms with this development and, in fact, it still has not been able to consolidate. Although the ISA-virus crisis accelerated the adoption of emergency measures, there is still work to do.
- Among the most immediate aspects, there is the promulgation of the farming density regulation and the improvement of the sanitary regulation (RESA). Additionally, there is the need to implement regulations already approved, give a definite solution to forfeiture for non-compliance of the concessions and generate greater scientific information and knowledge for a better management and administration of the sector.
- There are also some substantive issues which need to be dealt with as soon as possible: the concessions' new geographical planning, the definition of the system's maximum load capacity from the sanitary and environmental point of view, and the strengthening of the aquaculture institutional framework and the monitoring capacity.

ⁱ Activities such as fishing, tourism, maritime transport, etc.

ⁱⁱ Aquaculture Sanitary and Environmental Reports