Meeting Summary

Meeting of the Salmon Aquaculture Dialogue Steering Committee with Chilean Stakeholders
July 20-21, 2005
Puerto Montt, Chile

Synopsis

Members of the steering committee of the international Salmon Aquaculture Dialogue convened a two-day meeting with stakeholders of salmon aquaculture in Chile. The Salmon Dialogue's steering committee is composed of representatives from environmental NGOs, industry, and a research institution. A broad range of stakeholders from around the world are involved in the Salmon Aquaculture Dialogue, including producers and other members of the market chain, researchers, NGOs, government representatives, and investors. This meeting was a unique opportunity for a wide variety of Chilean stakeholders, including producers, environmental and social NGOs, labor union and syndicate representatives, researchers, and government representatives to discuss the social and environmental impacts of salmon farming in Chile. More than sixty interested Chilean stakeholders attended the meeting.

The main goals for this meeting were:
- To explain the evolving goals and objectives, approach, and progress of the Dialogue;
- To learn from Chilean stakeholders about the main salmon farming issues in Chile;
- To ask Chilean stakeholders how we could best address those issues in the international Dialogue; and,
- To increase participation of Chilean stakeholders in the Dialogue.

July 20, 2005

Introduction

The meeting began with a welcome from David Tecklin, WWF-Chile. Mr. Tecklin expressed that WWF Chile was happy to host the Salmon Aquaculture Dialogue steering committee and Chilean Stakeholders at this meeting on aquaculture. Aquaculture is a new area of work for the WWF Chile office.

Jason Clay, of WWF US and member of the steering committee of the Salmon Aquaculture Dialogue thanks WWF Chile and Katherine Bostick of WWF US for their work organizing the logistics of the meeting. He comments that it was very good to have such a diverse group in the room to discuss salmon aquaculture, especially given that it may be the first time this diversity of Chilean stakeholders of salmon aquaculture had gathered.

Mr. Clay reviewed the house rules for the meeting that were agreed upon by the steering committee:

- No cell phones—please turn off or silence your phone, pager, etc.

- We are using simultaneous translation. When speaking, use a microphone in order to allow for translation. Speak slowly and please keep comments and questions short in order to facilitate translation and to allow opportunity for everyone to participate.
- The media/press has not been invited. As has been the case at all previous Salmon Aquaculture Dialogue meetings, we are following Chatham house rules. Under these rules, any participant is free to speak with the press after the meeting or during breaks. Participants are free to use the information received through comments in the meeting, but the identity or affiliation of speakers cannot be shared. We have used these rules in order to allow everyone to speak freely without concern of being quoted.
- No discussion of prices or any other financial issues that could raise anti-trust concerns regarding collusion or price fixing is allowed.
- We will release a full summary of meeting discussion and meeting notes as well as a list of participants.

Mr. Clay also reviewed the contents of the packets handed out to participants. Each packet contained a copy of the agenda and a two-page description of the international Salmon Aquaculture Dialogue. It also contained a copy of the draft Goals and Objectives for the Salmon Aquaculture Dialogue as a whole. He announced that the steering committee had made one change to the agenda for the 11:15am session on the second day of the meeting. The Committee proposed that participants form break-out groups by issue areas (e.g. environmental impacts, labor issues) and that those groups would then report back to the full group to discuss how the issues identified can be incorporated by the Dialogue. All participants would participate in identifying themes for break-out groups, and then sign-up to participate in the one of their choosing. The steering committee would want to see a wide variety of stakeholder groups in each break-out group—meaning, for example, that the group discussing labor issues should include industry representatives, environmental NGOs, labor federation representatives, government representatives, etc.

Mr. Clay then opened up the floor for questions and comments before he began his presentation.

At this time, two participants expressed their concerns regarding the exclusion of the press from the meeting and the small amount of government participation.

Mr. Clay responded with assurance that the subject matter of the meeting and the issues raised were in no way closed to the press, and reiterated the house rules. He clarified that the concern was with specific comments being attributed to individuals, not with the publicizing of the issues. He also stressed that while government participation is critical, part of the Dialogue is the hope that the results will go beyond what government can achieve by itself.

Mr. Alex Trent, from SOTA and member of the steering committee of the Salmon Aquaculture Dialogue also emphasized that the results of the Dialogue process are public.

Mr. Tecklin of WWF Chile emphasized that a number of government representatives had been invited but that many had a regional meeting that conflicted and were unable to attend. However, some were present.

Presentation from the Steering Committee and Discussion

Mr. Clay gave a short Powerpoint presentation on the international, multi-stakeholder Salmon Aquaculture Dialogue. The presentation is in an appendix to this meeting summary. Main points of the presentation were as follows:

- For WWF, this work on salmon follows 10 years of work on agriculture and commodity systems. We believe you need to make entire commodity systems more sustainable, and that this cannot be done by focusing on a whole range of impacts. Rather we need to focus on the most significant impacts and through this affect 60-70% of the issues that people are concerned with. This means that we need to come to agreement on what the key impacts are and what are acceptable levels of impact. I will share the list of impacts that the Dialogue has identified as global level impacts and will then look to meeting participants to determine if and how this fits with impacts specific to Chile.
- In agreeing on "acceptable levels" of impacts, WWF considers what a small percentage of the best producers are already doing and not just what is theoretically possible. Reasonable people are going to disagree on these levels. As the Salmon Dialogue, we have to determine if it makes sense to set up global principles and criteria or if they should be developed on a national level. Our approach is not prescriptive, but rather we aim to set targets. We want standards that measure impacts against a baseline by setting targets, in order to determine measurable results. There may be 100 different ways to reach the target and it should be our goal to promote innovative ways to reach targets. We should be setting performance based standards and allowing different producers to find ways to meet that standard. Additionally, we want to see a progressive move on performance over time.
- The History of the Salmon Aquaculture Dialogue: We have had four meetings to date. The first was in the United States, where we identified the main areas of impacts and listened to science-based presentations that often had conflicting views. There, the group also identified a number of potential research priorities. At the second and third meetings of the Dialogue in Norway and Canada, the group began to better define research priorities, began drafting goals and objectives for the Dialogue, and formed a steering committee. The fourth meeting, held in Belgium, focused on a report on environmental issues surrounding salmon feed, particularly the use of fishmeal and fishoil in feed. We are now here in Puerto Montt to find out how the Dialogue process can be relevant to the Chilean context.
- The approach of the Salmon Aquaculture Dialogue: Our goal is to shift the entire industry to become more sustainable from an environmental, social, and economic standpoint in a way that is achievable and measurable. All products, papers, etc. that come out of the Dialogue will be published on web sites and shared outside of this group. We believe transparency is critical and that we need to agree on goals and objectives as a basis for communication.
- To date, we have agreed upon six areas of key environmental impacts. These are feed, disease, escapes, chemical inputs, nutrient loading and carrying capacity, and benthic

impacts and siting. We have not yet begun to identify specific concerns related to social, economic, and labor impacts. These are much bigger issues in Chile than the rest of the world and we look to you to help identify them.

- Ultimately, we hope to develop simple, measurable standards to be used for investment screens, certification standards, future national regulations, and/or market outreach.
- In this meeting, the Steering committee aims to present the international Dialogue to Chilean stakeholders, learn how and if Chileans want to participate, identify key impacts of salmon aquaculture in Chile and determine if the Dialogue addresses them. Finally, we want to understand how the international Dialogue can work with Chileans to reduce the negative social and environmental impacts of salmon culture in Chile. We want to know how to make the dialogue more relevant to the important stakeholders.

Mr. Clay then passed the floor to the other members of the Salmon Aquaculture Dialogue steering committee who were present and each of them spoke briefly.

Mark Stevens, National Environmental Trust (NET)

- NET is in the early stages of a campaign with the goal of minimizing the social and environmental negative impacts of farmed salmon. We recognize that farmed salmon is here to stay, but we want it to be cleaner (from an environmental perspective) than it is now. Some people call salmon the blue revolution or a way to feed a starving planet while others call open net cage farming the dirtiest form of aquaculture. We are involved in the Dialogue because it is the best opportunity to sit around the table with all stakeholders. I look forward to hearing from all of you.

Alex Trent, Salmon of the Americas (SOTA):

- I am here to listen. SOTA has been involved since the beginning of the Dialogue. It strikes me that this is a very important process. Coming here to Chile has expanded the Dialogue further geographically as well as in terms of topics covered, as labor and social issues will be discussed here. Communication amongst stakeholders is key to reducing conflict. On the industry side, by eliminating unnecessary conflict we can then focus on producing good healthy food and NGOs can then have more time to focus on the needs of their stakeholders. We need to change emotion and rhetoric into science based communication. That is the goal of this dialogue. We want to get the best science that we can to tell us where we are right and wrong. We have already started to do this with the feed report. What is most difficult for those of us in the Dialogue is taking that science back to our stakeholders because sometimes it's not palatable to them. But we need to make sure that the science-based facts are what are communicated to retailers and ultimately to consumers.

Jay Ritchlin, the David Suzuki Foundation and the Coastal Alliance for Aquaculture Reform

- The David Suzuki Foundation and the Coastal Alliance for Aquaculture Reform (CAAR) came into the issue of salmon aquaculture primarily because we have healthy wild salmon runs in British Columbia that we want to protect. At first aquaculture was seen as a way to take pressure off of the wild runs, but then became clear that salmon farming was having negative impact on wild populations. This concern led us to join the

Dialogue. It has not always been easy for us to be in this group. We have a very active and passionate group in CAAR. We also do not necessarily believe in one scientific answer, but that there is a point of potential agreement and there is a point where you have information that needs to be acted on. I am here to try to make our positions understood, to try to understand the positions of industry better, and try to agree on areas of research. We recognize that there are regional needs, and that individual places may have specific needs that cause some things to be more important than others. What happens in any part of the world has to be reflected here in the international Dialogue. This is an ongoing process of learning and sharing. Chile is very important to the industry, and any change in the sector globally must take into account the situation here.

Jason Clay, WWF-US:

- WWF began work on aquaculture 10 years ago with a focus on shrimp. We developed a multi-year project on shrimp with a consortium that included the World Bank, the Food and Agriculture Organization of the United Nations, and the Network for Aquaculture Centres in Asia Pacific. A lot of what I presented earlier on better management practices and the adoption of such practices came out of that process. Since then we have teamed up with the International Finance Corporation to convene multi-stakeholder meetings for different commodities including molluscs, tilapia, and catfish. We plan on convening others, including trout and seaweed, in the future. We believe there is a need for an international certification body. We chose to work on eleven species, almost all of which are produced primarily through aquaculture. We are also interested in the health of reduction fisheries. The aquaculture industry is the largest consumer of reduction fisheries and we want to help ensure that that use is sustainable. Aquaculture uses about 80% of global fish oil, and salmon alone uses half of that. Sustainability of these fisheries is also something that industry needs, or their costs will greatly increase. WWF is interested in keeping this dialogue going and helping find resources for research that is needed. We want to begin to try to get to reasonable standards that good performers can achieve and that are financially viable.

Mr. Clay then opened up the floor for clarification questions.

There was some discussion regarding the minimal amount of participation by Chileans to date and how the steering committee hoped this meeting would increase participation. The steering committee had been hoping to have this meeting for over 6 months but had scheduling difficulties and they recognized that Chilean participation is critical.

Participants also took this opportunity to bring up a variety of themes:

- Currently there are 3,500 aquaculture concessions and only 800 for artesanal fishermen, indicating that coastal areas are not equitably shared.
- There is government support for aquaculture expansion, but expansion and growth will in turn increase problems related to labor, coastal zone management, and the environment.
- Small-scale fishermen have noticed a reduction in wild species
- Citizens (small scale fishermen, farm laborers, other coastal zone users) have not had the opportunity to share their concerns with industry, government, etc.

- Divers expressed concerns about wild fish eating excrement of farmed salmon
- SalmonChile and the industry have not sat down to talk with the workers about the many concerns they have. The view was expressed that the region is dependent on salmon aquaculture, the government supports the industry, and the industry then exploits workers.
- Some participants claimed that use of illegal chemicals regularly happens.
- Some participants questioned whether Chilean production can or should be held to the same standards as northern countries, especially recognizing that many producers are transnational companies that meet higher standards in northern countries.
- Salmon aquaculture brings in considerable money to the country but it is not making its way to the people of the region—the X Region, where the salmon culture primarily occurs, has only moved from being the 7th poorest to the 6th poorest region in the country over the past 10 years.
- The problems of the industry are more political than technical.

There was some discussion of the nature of the Salmon Aquaculture Dialogue as a voluntary process that would have no regulatory consequences. An additional concern was related to the implementation of standards and certification as something that could only be effective if there was also integrated coastal management. Lastly there was a concern that participation in this Dialogue, especially if certification began, would eliminate the leverage needed to make more large-scale changes.

Some industry representatives weighed in on discussion so far stating that the rapid growth of the salmon industry and the fact that they are a world leader took everyone by surprise, including the industry. They also noted that the negative impacts of the industry are not intentional, but are a byproduct.

Certification

Mr. Clay responded to a question regarding certification and if or why it is an end-goal for WWF and/or the Salmon Aquaculture Dialogue. He described WWF's experience with certification of Wisconsin potato growers. Certification was based on the total toxicity of chemicals used by the grower. Three years after implementation there was a 50% reduction in total toxicity pesticides used on potatoes for all farmers in the state, even though only a small percentage of farmers were certified. Previously, 35% of Wisconsin potato farmers had used the most toxic chemicals at least once a year. This program reduced that to 2%. There was wide acceptance of the approach and the information even from those producers who had no interest in being certified. He gave the example of cotton, where voluntary processes reduced toxicity of chemicals used by 50%, reduced fertilizer use by 25%, and reduced water use by 25%. Better soil organic matter management also caused farmers' profits to increase. Investing in social issues can also benefit companies. In Brazil, spending $200,000 on an adult literacy program in a community increased employee retention from less than 20% up to 80% within two years. They had lower costs and increased efficiency. The lesson is that certification isn't necessary for results. This can be encouraged by certification, but it is not the only way, nor is it one that Mr. Clay or WWF is

wedded to. He recognized that there are many certification programs out there and stated that he is not interested in creating a new one unless it is different.

Mr. Jay Ritchlin explained the way that needing to keep an ecological bottom line in front of the Dialogue has been both a good learning experience and a challenge. The foundation of a sustainable industry is a sustainable environment.

Strategies for Consensus Building

There was some question and discussion on how it is possible for stakeholders with divergent views to come together and overcome conflict. Mr. Clay stated that in his experience it takes many factors but is very possible. Among the factors he listed as contributing to overcoming conflict were time, sitting face-to-face, and developing clear goals and objectives for the groups, Further, laying out policies or procedures for how the group interacts, discusses the issues and how and what they work on is also necessary. He stated that a dialogue process such as this takes commitment from participants to attend meetings, listen, and translate others' ideas into the way you think. Critical to the process is agreement within the group on how to move forward—only by groups accepting a common approach will it work. Mr. Clay expressed that he wishes to use the realm of what is possible to move all producers to better practices, using market forces to send messages, showing increased profit or reduced investment risk, improving access to capital, and aligning the incentives to make sure all stake-holders benefit from moving in a better direction. He stated that demonstrating the business case for doing things better also helps groups with divergent views come together. With WWF's work on other commodities, it was found that agreement on major impacts is fairly quick, and the argument is on what an acceptable impact level would be and how that might vary from one region to another and how fast the transition needs to be. He stated that we cannot reasonably ask producers to do something in the short term that is not yet being done somewhere on the planet, but that through this process you can develop a better idea of what is reasonable in the short term and also look to what is reasonable in the long term.

There was some concern expressed by participants that salmon might be different in nature from agricultural commodities and different from shrimp aquaculture in that these other commodities are confined to specific places where there is not a common environment where other things are happening. With salmon however, there are interactions with fishing, coastal development, and generally the resource of ocean water.

Mr. Clay responded saying that areas of single use in agriculture are frequently areas that used to be multi-use. He gave the examples of soy in the Amazon and shrimp aquaculture in mangrove areas around the world. He recognized that the issue of a shared environment is a real one but stated that he did not think it was an intractable problem. Because of this issue, there is a need to think about the competing interests in the marine environment and what the competing societal goals and interests are. In both agriculture and aquaculture, it has become clear, that the areas that are highest in biodiversity are the areas that are usually the least productive from a mono-crop point of view. Mr. Clay gave the example of salmon, and that salmon production in biodiverse areas with wild salmon runs leads to disease transfer both ways between farmed and

wild salmon. Secondly, this brings up the issue of coastal zoning (e.g. siting net pens in the mouths of wild salmonid runs is bad for farmers and wildlife). Norway has already zoned coastal areas and has created protected areas and restrictions for distance of salmon farms from river mouths. Mr. Clay stated that every farming operation has areas of higher and lower productivity and there is evidence that stopping farming in the low or negative productivity areas often increases the profitability of the commercial operations and improves the ecological impact. He believes this may be the case in salmon aquaculture also because it has held true for every other commodity WWF has analyzed related to farming in areas of lower or marginal productivity. He stated that there is a need to make the financial case on this to salmon farmers and that more data on the implications of use and non use of certain areas will likely lead us to see that some locations do not make sense financially. This holds true in production of both oysters and shrimp. A salmon farming company that had many farms in a variety of areas could do this analysis.

Salmon Aquaculture in Chile and Moving a Dialogue Forward

Discussion then shifted back to a focus on salmon culture in Chile and the composition of stakeholders in the room.

Participants brought up the following themes as ones that could or should be addressed by the Salmon Dialogue or at the table that day or the next:

- The treatment of pregnant laborers
- The responsibility of companies in environmental remediation
- Royalties for water use as was done with copper
- The role of subcontractors in labor and the agencies that do subcontracting
- Potential moratorium on expansion of salmon farms
- The impact of escapes and the related responsibilities of producing companies, also in regards to shoreline pollution and disagreement over extent of impacts
- Hostility that unionized workers face (on farm, in processing plant, in salmon feed plants, etc.)
- The role of collective organizing
- Whether labor rights violations and other social (and environmental) problems are systematic or whether they are outlying problems with a few companies, individuals, or locations.
- The desire for indigenous groups and the government to be active participants in any Dialogue on salmon

Mr. Clay spoke for the steering committee recognizing that all of the issues that had been brought up were important ones. He noted that to succeed in a meeting like this everyone needs to listen and hear many viewpoints. A first step is to determine where stakeholders agree and where they disagree, which will help to inform us all as to what data we need to move forward. He stated that this is not an immediate process, and that it will take 2-4 years, open dialogue, and some research. The steering committee recognized that they had not yet addressed social issues in the Dialogue. Mr. Clay mentioned that the steering committee is aware that use of contracting companies is increasing across many fields, and that it has large impacts on worker benefits, job

security, and wages. They recognized that issues surrounding labor issues specific to women have not been addressed by the Dialogue but need to be, especially in the context of processing plants.

Several participants stated that the meeting was a first step and that we cannot be pessimistic about a process that has not yet started. All those present had made some effort to dialogue by showing up at the meeting. Additionally, they stated that they saw the international Salmon Dialogue as being open to including themes that had not yet been addressed by the Dialogue, such as social and labor issues. Salmon culture is a new industry that grew extremely rapidly, but the industry has taken some steps on both environmental and labor issues and can continue to improve.

There was some discussion on labor issues. A study is being conducted by the Direccion de Trabajo with the Universidad de los Lagos related to the compliance levels of the industry to labor laws. There was also mention that there have been few opportunities to discuss these issues as a group with workers, industry, researchers, and government, and that the lack of such opportunities has been a constraint.

Mr. Clay closed the session by asking all participants to think about what they feel are the two or three impact areas that the group should discuss the next day. He suggested that for a part of the day tomorrow, participants would split into small groups to discuss these areas. There was some debate about whether it was best to split into groups, with several participants speaking out on each viewpoint. It was argued that social and environmental issues could not be discussed separately, and it was agreed that it was not easy to separate them completely. The steering committee felt that small groups were necessary to move through the agenda and have time to discuss each of the areas of impact (social, labor, environmental, etc.) and recognized that there would be some overlap due to difficulties separating the issues. The committee also emphasized that the small groups should include representatives from various stakeholder groups.

The meeting was adjourned for the day and participants gathered at a reception.

July 21, 2005

Chilean Stakeholder Presentations

The meeting began on the morning of July 21 with presentations from three Chileans who had been involved with the Salmon Aquaculture Dialogue at the international level: Rodrigo Infante of SalmonChile, Dr. Alejandro Buschmann of Universidad de Los Lagos, and Rodrigo Pizarro of Fundación Terram.

Mr. Rodrigo Infante, SalmonChile: I open first with the idea that in fact we are facing a new process, and water is one of the most important resources we have. Salmon aquaculture in Chile has experienced enormous economic growth, and salmon exports are important to the region and the industry has also generated employment. There has been enormous immigration of people into the Tenth Region, or coming back here to the areas with farms from the cities. There is also

a characteristic of the industry, which is the added value that we give the country. Fishmeal for example, is very important, and our industry adds value to this. For every ton of fishmeal, we add a value of 1,400 dollars. Seventy percent of exports are now with added value. Whatever happens in the 10th region with aquaculture has a direct effect on Chile because it is a large region.

There is extensive regulation in effect today related to the environment, labor, etc. and it is being applied and supervised. We see ourselves as an innovative industry. In terms of the environment, the industry has undergone many voluntary acts to mitigate and minimize environmental impacts. We have worked with Fundación Chile on clean production and certification. We have done a great deal of environmental surveillance and we have a great amount of information from 1989 onwards. We will continue to monitor the health of the environment. A few weeks ago we held a seminar on innovation at Universidad de Los Lagos that showed innovative technologies. Industry has important horizons related to external and internal auditing to make sure our work is supported by SQF programs so customers abroad recognize the work we are doing. And we know there are still things missing. A number of issues are pending with industry, including vaccine application and reduction in antibiotic use, research into polyculture to have a more closed nutrient cycle, and the replacement of fish oil and meal in feed which will protect industry from meal/oil price fluctuations. Also in process or pending is dialogue with local communities to improve knowledge about what the industry is doing and to move jointly towards the same goal.

Dr. Alejandro Buschmann, Universidad de los Lagos: I would like to speak from an academic viewpoint and how I see the development in the region in reference to salmon aquaculture. We see that there is a great deal of diversification, yet we depend greatly on only one product. I passed around a graph, which is part of a paper that will be published soon. On it you can see I have plotted the number of scientific publications on salmon aquaculture from Chile and other countries against their respective fish production. Chile is the only country that produces massive amounts of salmon with very little research. Chileans have only 2.2% of the published material on salmon. This shows that we didn't use or require science and technology to develop salmon aquaculture in Chile. We do not currently develop salmon aquaculture technology in this country, and if we want to be a first class producer, we cannot keep it this way. We cannot, unfortunately, import or export innovation from one country to another and cannot rely only on technology from other countries.

To date, Chile has not invested in science and technology, which it must do for this to be a sustainable industry in the future. Additionally, we do not have excellent information or data here. There isn't a constituent mass of researchers that are supported by the aquaculture industry today, so there is an enormous disparity. When looking at environmental performance, what do we benchmark it with? What does the Undersecretary of Fisheries use as a benchmark? How can the government effectively regulate without good data? The industry has much information but it is not public. This puts us in a hazardous position. Ignorance could be causing us to say that there are problems when there are really not. Or alternately, we could create major environmental problems by farming when we are ignorant. It is possible that the effects that are causing the deterioration of the shoreline could be causing strong modifications in the water masses in the southern channels in Chile. This is going to have important impacts on what will happen in the future.

Mr. Rodrigo Pizarro, Fundación Terram: On behalf of Terram, thank you to the Dialogue for the opportunity to speak. This is an important and valuable process which is important to the development of a sustainable industry. We have needed the help of our international colleagues to get this dialogue to happen, now it is our job to make this work. We are all here voluntarily, so it is particularly important to recognize industry and others being here. We are not opposed to industry and economic development based on salmon aquaculture. We recognize the economic benefits of industry. However this is not enough. The success of industry brings with it responsibility. If industry expects to be globally important it must recognize the role of other players.

There are four main areas where all stakeholders should be involved. The first is environmental impact. Industry is beginning to understand that environment is a problem. There are environmental impacts including nutrients, chemicals, antibiotic use, escapes, etc. where the industry has made some progress. For example, they have reduced use of malachite green and addressed environmental impacts that relate to costs to the companies. But more is needed. The second area is that of labor. The industry is not doing as well from a labor perspective. The salmon industry is not complying with the laws, and it may in fact be going backwards. The labor ministry has said that the industry is not complying. This is an issue we must discuss. The natural incentive to reduce these problems is not as obvious as for some environmental issues, although I think that there is still evidence that this would help. Studies show increased injury and turnover, and reducing this would reduce costs. Terram is committed to international agreements for labor compliance based on export markets

The third area is that of land use in the 10^{th} and 11^{th} regions. The industry has to recognize that it is expanding and determining the land use of the 10^{th} and 11^{th} regions in the future and this is a huge responsibility. We don't have information on all the environmental impacts as Dr. Buschmann said. Where, how many, and how we locate farms are critical questions. Certification alone can't resolve this. Actions of regulation can't, in the short term, resolve this siting problem either. Even though individual farms impacts are decreasing, the cumulative impacts are not being addressed. Tourism, small scale fishing, and other economic activities are threatened by and threaten salmon aquaculture. This is an opportunity to talk about voluntary coastal management of the regions.

The fourth and final theme is that of the benefits of salmon aquaculture. How do you spread the benefits? Generating employment is not enough. There must be a relationship between the benefits to the industry and the benefits to the communities and how they are distributed throughout the region. The coast is a public good, yet salmon farming's contribution to communities is questionable. Salmon farming is an enormous opportunity if it is socially and environmentally sustainable.

Discussion on Stakeholder Presentations

Participants had the opportunity to ask questions of the presenters or comment on their presentations.

One participant reacted that they agreed with what was said in three key areas. They agreed that there is a strong need for added research and databases and for the monitoring and prognosis of

environmental issues. They stated that when looking at better management practices and certification we need to consider integrated systems that deal with environment, product quality, labor, health and safety across the entire value chain. Finally, the individual emphasized that the land use and planning issues that have been brought up are not something the industry can manage alone, and different groups must work together on this.

At this time, nine participants from five organizations (NGOs and labor unions) collectively stated that they felt the meeting did not meet with the basic conditions for all the actors to have equal participation and that the process did not consider the social, economic, and environmental specifics of Chilean reality. They asked for Dialogue participants to support a moratorium on the expansion of salmon farms and then withdrew from the meeting.

Several participants then stated that they valued the meeting as an opportunity to begin to discuss key issues. The process was recognized as not being perfect, but as being a good starting point. It was additionally recognized that part of an open process is that not all groups or individuals will choose to take part. An example of a small scale dialogue that had begun with workers and some companies on Chiloe was cited as being a positive example of dialogue.

Other key concerns that were mentioned include:

- The industry has not used their considerable resources to train and advance workers.
- Workers have attended technical schools in order to be employed by the industry, but do not receive good salaries despite this education
- Many workers are spending over half their salary on housing/rent alone

Discussion continued on the composition of the group, and the open, transparent nature that the organizers desired. It was mentioned that the Forest Stewardship Council (FSC), which is now one of the largest certification bodies in the world began as just a few people in a room talking. This Salmon Dialogue will never have a "perfect" process, but can move towards it and aim for it. It was noted that labor issues have clearly been missing from the Dialogue and need to be included in a proactive and constructive way. Participants recognized that there are people who will not attend this initiative because they are not interested—some government agencies may not be interested, those who left are not interested. It was noted that they are all working in other ways.

Determination of Break-Out Groups

Discussion then focused on break-out groups for the next session. A number of themes were suggested for the sub-groups including general fisheries impacts, pollution/environmental contamination/escapes, siting, overall impacts on community, and labor. It was also suggested that the group could divide in two: one group on labor and another on environment. The group then agreed to break into three subject areas (environment, labor, and socioeconomic) to discuss each area in more detail. Individuals were asked before the coffee break to please sign up for one of the groups. The steering committee stated that the reason for having break-out groups was primarily to give everyone a better chance to talk and express their views. Smaller groups could help prevent a subset of individuals from dominating discussion while allowing the group as a

whole to cover more ground. It was specified that the organizers would like to see a variety of stakeholders (industry, researchers, NGOs, labor groups, etc.) in each of the groups so that each group was varied. The three subject areas were environment, labor, and socioeconomic impacts. The environment group was split into two groups: one focusing on micro, or on-farm impacts, and another focusing on the macro environment (coastal zoning, siting, etc.). Each group was to designate a facilitator and a rapporteur. The rapporteur would take notes during the session and report back to the full meeting.

For their theme, each breakout group was asked to:

- identify the most significant issues or impacts
- determine whether various stakeholders agreed that these were valid issues
- attempt to prioritize the issues
- identify which of these significant issues result because the law is being broken
- identify areas of disagreement within the group
- identify key gaps in available relevant information, data, or knowledge
- identify priority areas for research
- identify if anyone is already doing key research on this issue
- and lastly, identify any obvious indicators for the issue.

Small groups then met for 1 hour and the group then broke for lunch.

Upon returning from the break-out sessions and lunch, each small group reported back to all meeting participants.

Report back from the macro-environmental break-out group
The main issues identified by the group were:

- Generally, there is a need for more information to help define environmental impacts in terms of nutrients and we need a collection of macro level environmental data over the next year. We need to have an ecosystem focus that also includes lakes and rivers. This should include information on nutrition/feed and pollution, carrying capacity, and zoning. We propose that existing information be gathered together and identify what we know and where there are gaps. Data for the X and XI Regions should be gathered, with special focus on the interior ocean of Chiloe. All of this data would provide a baseline. Baseline data could then be used to determine next steps and to help define indicators such as the blue whale for the ocean, other indicators for freshwater. It could also be used for zoning the coastline for activities. We want the information we gather to be used to inform the overall management of the coastline.
- Nutrient loading is a key issue, and one that needs to be approached in terms of different sources of nutrients, not only salmon farming. In looking at nutrient loading there is also a need to differentiate environments (freshwater, marine) and to analyze at a river basin or ecosystem level also.
- Escapes are another important issue. The escapes need to be seen in a local context because they are not native fish, so the problems are related to the impacts on the native species/ competition. We can start with analyzing the differences in impact compared to the northern

hemisphere such as displacement of native fish in both lakes and the marine environment. In the north, a main concern is genetic interactions with wild salmon and that does not occur here.

- A related issue that is social and environmental is the incidental catch of escapes by fishermen.
    - Make efforts so that the small-scale fishers can catch these fish
    - Brand or mark fish so escapes can be caught and we will also have the ability to distinguish between first and second generation salmon in the wild

Report back from the Labor breakout group

Three main topics stood out as being important to both workers and industry:

- The need to improve communication and make information publicly available in order to diminish lack of trust
- The unions want more respect and input to decisions
    - There is a need for more training, which will generate a better work environment and better relationships with companies.
    - The issues of women need more attention.
- Studies by the ministry need to be more public and transparent—there have been studies done, but there is a need to disaggregate the results so that they are not aggregated by zone and so that one can see the trends by zone and by company.

Additional themes and issues included:

- Workers need to be recognised as a legitimate player in the operation of the company.
- There needs to be improved communication channels within companies. Communications (with workers) are typically at the level of middle managers but don't arrive at the upper management level where decisions are made.
- The need for systems of promotions, movement within the company, a proportional distribution of the earnings of the companies going to the workers.
- There exists on-going discrimination against workers and organisers – a current issue of a union leader being fired. Currently only 6,200 workers out of 45,000 are organized.
- Important to recognise that not all companies are guilty of all accusations, companies make their own decisions. There is considerable difference among companies and a need to document better practices.
- Current collective bargaining focuses on the salary, but not other social/economic issues, resulting in a trend for salaries to get better while labor conditions get worse.
- Sub-contracting is allowing the big companies to avoid their responsibility and leads to lower quality product
- Government surveillance has improved in some cases, but is still hampered by lack of funds and staff – needs to improve.
- Sexual harassment and the firing of pregnant workers is still a problem.

Report back from the micro-environment breakout group

The sub-group's detailed comments included:

- Hydrocarbons, oils, and heavy metals have the potential to be big problems but are not now because they are well-managed.
- Persistent organic pollutants (including PCBs, dioxins, flourins) are generally being satisfactorily monitored and controlled, but we must pay attention to them because of sensitivity of the market.
- Discharge from farms is one of the biggest impacts on the ocean floor and benthic communities. This is an impact of high priority.
- Nutrients released in sensitive areas, lakes, and estuaries are a problem—this includes liquid effluents from processing plants and net manufacturing/treatment.
- Transportation of fish, nets, and equipment constitute a serious risk in terms of disease transmission and requires research.
- Escapes are a top priority. Though farms are doing better in this realm, there needs to be focus on the effects as well.

In summary, the group identified three high priority issues:

- Use of chemicals and antibiotics
- Impacts on the benthos and lakes
- Escapes

A second group of slightly lower priority issues was also identified:

- Use of anti-foulants
- Emissions of residual liquids and liquid wastes
- The dispersion disease through transport of fish
- Visual impacts in the coastal zone (this is relatively minor)
- Salmon farms as areas that absorb invertebrates and act as biological filters

There have been advances in many of these areas. For example, historically there is greater benthic impact in areas of less water circulation, but this can be improved with better practices and siting. We are now identifying problems related to benthic impacts despite the fact that farm management has greatly improved, because the areas are fighting historic accumulations. The sub-group agreed that a center of information where you could share better practices would be very good. Finally, participants noted that the generation and use of trustworthy scientific information is of the greatest importance.

Report back from the socio-economic breakout group

Growth and development has occurred. We all agree that salmon farming has contributed to the economic growth of the region. And though there is debate about the quality of the jobs, we agree that the salmon industry has generated significant employment. The question is does this

constitute positive development for the region. This small group specifically discussed the following:

- There is a large amount of information that the industry needs to ponder about salaries. Increases in salary could end up with fewer accidents, labor problems, etc.
- We discussed that training for the workers and their families is necessary. We heard that the need for training and the ability to advance is critically important. It is also important to companies so they can have better relations and smoother business. We therefore think that there is an opportunity to make advances in this area.
- There must be an effort from SalmonChile to create better working conditions and community input. This should be done in conjunction with the workers.
- Daycare and options for the care of children is something that we believe is important. There needs to be flexibility of benefits to workers.

The presentation back by the socio-economic group was interrupted mid-way by some workers, who were primarily from AquaChile. The workers demanded response by industry to a number of claims regarding worker rights, working conditions, salaries, etc. SalmonChile agreed to meet with the workers upon the close of the Salmon Dialogue meeting that afternoon. Demonstrators were invited to attend the rest of the Dialogue meeting if they so desired.

General Discussion

After the final report back from the small groups, there was time for general comments, questions, and discussion. Key areas of discussion were as follows.

- One method to remediate benthic impacts is fallowing. The question is what criteria companies use to determine when or if to fallow. Fallowing and rotation are not effective in areas with low water circulation, but can be very effective in others. Companies rely on a diver to test dissolved oxygen levels and other criteria in the benthos. Sedimentation models can also be used to determine fallowing procedure.
- In regards to labor, how do you guarantee social responsibility within a company? By law there is freedom of association and the ability to create unions, but some have been persecuted for doing so. Social responsibility of companies has increased, but mostly in relation to communities and not to labor within the companies. Contracting and subcontracting is precarious when we are trying to have decent labor standards. There rarely is opportunity to strive for the well being of workers with both the companies and the unions.

Conclusions

It was clear at the end of the day that there had been general agreement on the key areas of impact, and general agreement on a need for data for some of the impacts. There was not agreement on extent of impacts and there was not knowledge or acceptance of some of the data that may exist. The group could begin to find what data there is and use it to inform discussion. The steering committee began to wrap up the meeting, asking the group for their opinions on next steps. The committee suggested that another meeting similar to the one that took place was

one option and that in such a meeting the group would aim to invite any groups that were identified as missing from the first meeting. Another option for moving forward could be increased Chilean participation in the international Salmon Dialogue, and also the addition of Chileans to the steering committee. Participants were asked whether they wanted to be involved in the global Dialogue, work together specifically on issues in Chile, or both.

A number of participants expressed interest in moving forward on work specific to Chile, with offers of use of facilities at universities, expressions of willingness to work with any stakeholder, and recognition that social and labor issues are critically important to sustainability. The need to gather existing data, collect new data, and consider quality of information was also reiterated. General consensus of the group was that participants wished to continue dialoguing to increase the environmental and social sustainability of salmon culture in Chile.

Appendix 1: List of Attendees
Appendix 2: Presentation by Jason Clay

APPENDIX I: ATTENDEES

Attendees of the Salmon Aquaculture Dialogue meeting, July 20-21, 2005 in Puerto Montt, Chile	
NAME	**INSTITUTION**
Industry	
Rodger Miranda	AquaChile
Viviana Sánchez	AquaChile
J. Ríos	AguaChile
Pascal Rudeaux	Cultivos Marinos Chiloe Ltda
Víctor Mitrano	Exapesca
Leonel Sierralta	GAC consultores
Marco Rozas	Intesal
José Miguel Troncoso	Intesal de SalmonChile
Rodrigo Solervicens	Marine Harvest Chile
Carolina Susarte	Marine Harvest Chile
Carolina Faure	Novartis
Constantino Siderakis	Novartis Chile
José Luis Charpentier	Patagonia Salmon Farming
Juan Carlos Domínguez C.	Pesquera Los Fiordos an Agrosuper Company
James Furniss	Pesquera Los Fiordos an Agrosuper Company
Alejandro Clément	Plancton Andino
Rodrigo Infante	SalmonChile
Adolfo Alvial	SalmonChile
Carlos Vial	SalmonChile
Carlos Odebret	SalmonChile
Sandra Ulloa	SalmonChile
Meyling Tang	SalmonChile
Soledad Altamirano	SalmonChile
Marcelo Urrutia Burns	Salmones Multiexport Ltda.
Victor Palma	Salmones Pacific Star
Jaime Montecinos	SGSAH
Ronald Barlow,	Skretting
Government	
Alfredo Wendt,	CONAMA X REGION
Sol Bustamante,	CONAMA X REGION
Adriana Moreno	Dirección del Trabajo X Región
Héctor Moyano	Dirección del Trabajo X Región
Carolina Gómez	Sernam
Parlament	
Fidel Espinoza	Diputado X Región
Research	
Sandra Ríos	Centro de Estudios del Desarrollo Local y Regional/ U. los Lagos
Iván Arismendi	FORECOS

José Luis Iriarte	FORECOS
Dr. Alejandro Buschmann	Universidad de los Lagos
NGO	
Maximiliano Bello	Centro Ballena Azul
Rodrigo Hucke-Gaete	Centro Ballena Azul
Alejandro Salinas Santelices	Corporación Canelo de Nos
Patricio Peñaloza	Corporación Canelo de Nos
Juan Carlos Cárdenas	ECOCEANOS
Isabel Díaz	ECOCEANOS
Flavia Liberona	Ecosistemas
Juan Barría Pérez	Federación de Trabajadores del Salmón de Castro, Chiloé
Iván Vargas Cárdenas	Federación de Trabajadores del Salmón de Castro, Chiloé
Marisol Rosas	Federación de Trabajadores del Salmon de Chile
José Aburto	Federación de Trabajadores del Salmón de Quellón, Chiloé
Carlos Gallegos	Federación de Trabajadores del Salmón de Quellón, Chiloé
Martin Hevia	Fundación Chile
Paulo Mora	Fundación Chile
Rodrigo Pizarro	Fundación TERRAM
Francisco Pinto	Fundación TERRAM
Pedro Serrano	Fundación TERRAM
Cristian Gutiérrez	OCEANA
Antonia Fortt	OCEANA
Patricio López	OCEANA
Lucio Cuenca	OLCA
José Faúndez	Unión Federación Pescadores Artesanales
David Tecklin	WWF Chile
Susan Díaz	WWF Chile
Jorge Leon	WWF Chile
Pablo Ossa	Observer
Steering Committee and International participants	
Bambi Semroc	Conservation International
Jay Ritchlin	David Suzuki Foundation
Mark Stevens	NET
Bart Naylor	NET
Alex Trent	SOTA
Clare Backman	Stolt
Daniel Woodson	Wal-Mart
Jaime Lastra	Wal-Mart International
Arturo Reyna	Wal-Mart International Merchandising
Jon Martinek	Wal-Mart International Merchandising
Katherine Bostick	WWF US
Jason Clay	WWF US

APPENDIX II: INTRODUCTORY PRESENTATION BY JASON CLAY

The Salmon Aquaculture Dialogue—A Multi-Stakeholder Approach to Sustainable Salmon Production and Standard Development

El diálogo sobre Salmonicultura—Un proceso multi-sectorial para generar estándares y promover la sustentabilidad en la Salmonicultura

Jason Clay
WWF-US
July 20, 2005

Aquaculture and the Environment/ Acuicultura y el Medio-Ambiente

- Work to date suggest 6-8 primary areas of social and environmental impacts from human activities such as aquaculture
- Multi-stakeholder groups can usually agree on the key impacts relatively quickly

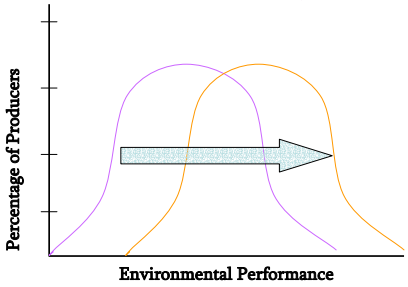
- Hasta hoy, investigaciones sugieren que 6-8 áreas concentran la mayoría de los impactos ambientales de actividades humanas como la acuicultura.
- Un grupo multi-sectorial o de los actores interesados en una tema como la acuicultura puedan ponerse de acuerdo sobre estas áreas que causan perjuicios de una manera relativamente rápida.

Aquaculture and the Environment/ Acuicultura y el Medio-Ambiente

- The challenge is to agree on what are acceptable levels of impacts that producers can achieve
- Finally, there is a need to measure reduced impacts against a baseline

- El desafío mayor es lograr acuerdos acerca de cuales son los niveles aceptables de perjuicio o impacto alcanzable por los productores.
- Finalmente, hay que medir los impactos reducidos contra una línea de base.

Accelerating Adoption of Better Practices/ Acelerando adopción de mejores prácticas



Salmon Aquaculture Dialogue

El Diálogo sobre Salmonicultura

Salmon Aquaculture Dialogue/ El Diálogo sobre Salmonicultura

- Four meetings have been held
  - February 2004, Washington DC, USA
  - June 2004, Stavanger, Norway
  - October 2004, Quebec City, Canada
  - April 2005, Brussels, Belgium

- Se han realizado cuatro reuniones hasta la fecha
  - Febrero 2004, Washington DC, USA
  - Junio 2004, Stavanger, Noruega
  - Octubre 2004, Ciudad de Quebec, Canadá
  - Abril 2005, Bruselas, Bélgica

Working Goal/ Borrador de Meta

Engage stakeholders in constructive dialogue to define environmentally, socially, and economically sustainable salmon farming, develop performance-based and verifiable standards, and foster their implementation.

Involucrar a las partes interesadas en un diálogo constructivo con el fin de definir qué es la salmonicultura sostenible en términos ambientales, sociales y económicos; desarrollar estándares verificables y basadas en el desempeño, y fomentar su adopción.

Our Approach

- The process is as critical as the standards that are ultimately developed. Buy-in is key.
- The goal is to tip the entire industry, not create a niche market.
- The results sought must be achievable by existing producers
- The standards must be meaningful, measurable and monitorable.

- El proceso en sí es tan crítico como los estándares que eventualmente se desarrollan. La participación es clave.
- El objetivo es cambiar la industria entera, y no crear un mercado de nicho.
- Los resultados deseados deben ser alcanzables por los productores.
- Los estandares deben ser significativos, medibles y monitoreables.

Keep it Clear and Open

Transparency is critical to moving forward, beyond conflict

- Include a wide variety of stakeholders
- Develop and agree on clear goals and objectives
- Use the goals and objectives as the basis for communications

La transparencia es crítico para poder avanzar y superar conflictos

- Incluir una gama amplia de actores
- Desarrollar y lograr acuerdos en torno a metas y objetivos claros
- Usar las metas y objetivos como la base para las comunicaciones.

Focus on the Key Social and Environmental Impacts of Salmon Aquaculture

- Feed
- Disease
- Escapes
- Chemical inputs
- Benthic impacts and siting
- Nutrient loading and carrying capacity

Enfocarse en los impactos sociales y ambientales claves:

- Alimentos
- Enfermedades
- Escapes
- Insumos químicos
- Impactos bénticos y ubicación
- Aumentos de nutrients y capacidad de carga

Future Outcomes

- Develop simple, measurable standards for:
  - Investment screens
  - Buyer screens
  - Government regulations, permits, and licenses
  - Basis for eco-label or certification
- Use workshops, workbooks and BMP cases to show producers how others have achieved standards.

Resultados futuros

- **Desarrollar estandares simples y medibles para:**
  - Mecanismos para filtrar inversiones
  - Mecanismos para filtrar por compradores
  - Regulaciones públicas, permisos y licencias
  - Base para la certificación ambiental.
- Usar talleres, manuales y casos de MPM para mostrar productores como los otros han alcanzado los estandares.

This is just the beginning…

Recién estamos empezando...

For more information visit

Para más información, visita

http://worldwildlife.org/cci/aquaculture.cfm

Goals for this Meeting

- Present the Dialogue to stakeholders in Chile
- Obtain feedback on how Chilean's want to participate
- Identify key impacts in Chile—does the Dialogue address them
- What is the role of the Dialogue in Chile
- How can the Dialogue work with Chilean stakeholders to improve salmon aquaculture

Metas para esta reunión

- Presentar el Diálogo a los actores interesados en Chile
- Obtener retroalimentación respecto de cómo les interesa participar a los actores chilenos
- Identificar impactos claves en Chile—ver si el Diálogo los enfrenta.
- Discutir cual debe ser el rol del Diálogo en Chile
- Ver como el Diálogo puede trabajar con los actores interesados en Chile para mejorar la acuicultura