

# STATE OF THE SALMON

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## CRAFTING SOCIO-ECONOMIC INDICATORS (SEI) FOR SALMON SUSTAINABILITY

### DRAFT Straw Man

A State of the Salmon Workshop  
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<u>CONTENTS</u>	<u>PAGE</u>
Introduction	1
Vision and Principles	2
Goal and Objectives	2
Case Study Review Analysis	3
Draft Indicator Criteria	3
Draft S/E Indicators	4-6
Research Outline	6-11
Scope of Research	6-7
Steps for Selecting Appropriate Indicators	7
Indicator Selection Criteria	7
Benchmarking	8
Stakeholders and Methods for Stakeholder Input	9
Research Timeline	10
Next Steps and Schedule	11
Case Study Review	12-17
Appendix A: Workshop Agenda	18-19
Appendix B: Indicator Evaluation Matrix	20
Appendix C: MSC Indicators and Guideposts	21- 24
Appendix D: References	24- 27



## **INTRODUCTION**

Where there is salmon, there are human communities that depend on salmon. Salmon are food, and food draws people; people modify the salmon landscape, which in turn affects the salmon. The cycle has repeated for thousands of human and salmon generations throughout the North Pacific for at least 11,000 years (Augerot 2005).

In recent years, we have witnessed a proliferation of third party certification schemes— Marine Stewardship Council, Monterey Bay Aquarium’s Seafood Watch Card, and the Blue Oceans Institutes Ocean Friendly Seafood Guide amongst others— that quantify sustainability of commercial fisheries and provide consumers and other stakeholders with a user-friendly way to monitor sustainability. These systems employ detailed metrics to measure the impact of fisheries management on salmon populations and habitat. However, few of the systems incorporate the community or socio-economic element of salmon fisheries sustainability into their calculations.

Nevertheless, ecological systems analysis informs us that we cannot understand, nor insure, sustainability without looking at its interdependencies between species, habitat, and human communities (Voinov 1996). Humans directly or indirectly affect almost all aquatic systems. Consequently, information for managing watershed and marine ecosystems is incomplete without consideration of human institutions (Lee 1992).

The State of the Salmon Consortium recognizes that we cannot promote salmon sustainability without creating adequate measurements of sustainability. Therefore, we intend the following “straw dog” document to be the first step in the development of metrics that measure community components of salmon sustainability. We hope this document will guide the efforts of the State of the Salmon team and colleagues to develop socio-economic indicators (SEIs) of sustainability for salmon dependent fisheries communities.

## **THE NEED FOR SUSTAINABILITY INDICATORS**

Chapter 40 of Agenda 21 calls for the development of indicators of sustainable development and the first and second sessions of the Conference on Sustainable Development (1993 and 1994) stressed the need for a "Menu of Indicators" as a basis for: (a) establishing cost-effective data collection systems; (b) monitoring conditions and trends in the fishery sector; (c) informed decision making; and (d) as a possible basis for early warning systems (Garcia 1996).

Sustainability indicators are pointers, which, through monitoring, can reveal the conditions and trends in a fishery sector. They allow us to “measure” the sustainability of the fishery sector, fishery policy, and management performance in relation to the various components of the fishery system. In essence, indicators can tell us if we are meeting the goals of sustainability and can direct policy makers to components of a fisheries system in need of improvement.

Our task is to identify an acceptable list of socio-economic indicators (SEIs) that allows us to assess the impact of changing salmon ecosystem dynamics, fisheries management policy and economic trends on salmon dependent fisheries communities in the North Pacific. The challenge is to develop measurable and relevant indicators in an often data limited environment and to create a robust tracking system that may need to work on different spatial, temporal, or cultural scales. Finally, we must work to ensure that results are presented to stakeholders and policy makers in a simple, relevant, and understandable manner.

*“...sustainability should be treated within the framework of a total system, taking into account the ecological, social, and economic as components of the system. It is impossible to sustain one part of the total system without the others being involved.”*  
- Alexei Voinov from Dimensions of Sustainability

## VISION AND PRINCIPLES

### Vision

To support sustainable salmon fisheries and healthy salmon-dependent fisheries communities by strengthening fishery certification processes and leveraging improved standards and best management practices across the Pacific Rim.

### Principles

- Socio-economic attributes of sustainability are a critical component of overall salmon sustainability
- Salmon “sustainability” can not be managed and promoted without being measured; sustainability indicators provide us with one measurement tool
- We can compare and assess socio-economic sustainability of different salmon fisheries jurisdictions by way of quantitative measurements and indicators
- MSC and other fishery certification programs are powerful agents for fisheries management reform

## GOALS AND OBJECTIVES

### Goal

Conduct independent State of the Salmon research that informs and improves socio-economic evaluation of salmon fisheries and salmon dependent community sustainability. All potential evaluation methods and indicators will integrate the following essential components:

- **Transparency** – in providing for a clear, open, documented process and product,
- **Equitability** – provide a process for an equitable inclusion of all relevant stakeholders,
- **Consensus** – strive for consensus among balance of stakeholders and that no one group can dominate or be dominated in the indicator-creation process

### Objectives

- A. Define core themes of socio-economic salmon sustainability and crucial benchmarks for measuring progress towards these goals
- B. Identify and test a suite of socio-economic indicators (SEIs) that measure socio-economic sustainability of salmon fisheries and salmon-dependent fishing communities
- C. Design a research project to comparatively test SEIs on one or more salmon communities and result in a peer reviewed, published paper and or targeted report for public consumption
- D. Facilitate a series of workshops to continue momentum, deepen discussion, present findings of project to standard setting organizations like the Marine Stewardship Council
- E. Identify several academic researchers to collaborate on an ongoing research project
- F. Identify potential funding opportunities

## CASE STUDY REVIEW ANALYSIS

Please refer to the full Case Study Review on page 10 for detailed assessment.

- All the reviewed organizations (FSC, Fairtrade, MSC, etc) incorporate some degree of emphasis on the social component of sustainability, but with varying degrees of detail and stringency.
- All provide structural guidelines to aid in the implementation of indicator reporting systems
- Most reference the inclusion and importance of disadvantaged groups or communities and provide a forum for stakeholder consultation and support
- Development of all standards took several years to launch and are committed to ongoing improvement and advancement
- Transparency is the primary value that resonates across models
- The key to understanding the effectiveness of the various standards is by looking in detail at the more detailed criteria, subcriteria, and scoring guideposts or benchmarks.
- State of the Salmon maintains that while MSC and other measurement systems comprehensively score impacts on salmon populations and habitat, existing socio-economic standard's rely too heavily on "watered down" language that leave scoring wide open to interpretation of the third-party certifier. Language such as the management system shall "includes process for" or "takes into consideration" impact on communities dependent on the resource in question is insufficient to accurately measure the socio-economic sustainability of a given salmon-dependent fishing community. We contend that detailed, quantifiable indicators can be identified that measure and provide more meaningful analysis of the effectiveness of a fishery in meeting socio-economic sustainability goals.

## DRAFT INDICATOR CRITERIA

For the purpose of our research project, State of the Salmon categorizes our proposed indicator criteria or sustainability "themes" under three overarching principles of sustainable development:

- **Social Capital**
- **Economic Capital**
- **Natural Capital.**

While we are emphasizing social and economic capital for the purposes of this research project, natural capital is included as a primary principle of sustainability, which may help to more fully develop and identify proxy indicators of salmon sustainability. Composition of sustainability criteria and indicators can be expressed in various forms, depending on what is being measured (Potts 2004). The proposed criteria we have selected represent common themes found in SEI systems that highlight interdependencies and key components of salmon sustainability. They include:

- Access & Participation
- Cultural Wellbeing
- Community Wellbeing
- Management Regime
- Stewardship
- Trade & Market
- Asset Investment
- Habitat
- Salmon Population

### BOX 1- Types of Indicators

Different types of indicators are designed to provide decision-makers with different kinds of information. If indicators are chosen from each of the three types listed, decision makers will be much better able to track performance of sustainability (Hagan 2004)

Type	Purpose
Condition	To indicate the level, or condition, of a specific value to be sustained (e.g. indicator: % fish owned by local communities)
Pressure	To indicate the level of stressor affecting the condition of a value of interest (e.g. % of fish allocated via an IFQ program)
Policy Response	To indicate the level of policy action taken to maintain the condition or reduce the pressure (e.g. Existence of Dedicated Access Privilege Program)

## DRAFT SOCIO-ECONOMIC INDICATORS (SEIs)

The following section presents a draft list of socio-economic measures of salmon sustainability linked to the themes mentioned above. There are hundreds of definitions of sustainability, potentially leading to a wide range of criteria to define socio-economic sustainability indicators or to interpret their variations. The following is in no way meant to be a comprehensive list of indicators, rather a prompt to help focus our workshop discussion to result in a short list of agreed upon indicators that we can then take to the testing stage of indicator development.

### I. SOCIAL CAPITAL

#### Access & Participation

Source: FAO Statistical Databases (Intl.), Fisheries and Oceans Canada (Canada), Japan Ministry of Agriculture, Forestry and Fisheries (Japan), Alaska Fisheries Information Network (US), Recreational Fisheries Information Network (US), Seafood Market Information Service (Intl.), United States Fish and Wildlife Service (US)

- Percentage of Fish Processed Within Local Communities
- Percentage of Fish Quota Owned by Local Residents
- Percentage of Fishing Vessels Owned by Local Residents
- Quota Allocation Based on History, Conservation Commitments, Reinvestment in Local Business
- Proximity of Quota Owners/ Fishers to Fishing Area (specific mile range)
- Degree of Migratory Labor (ratio of migrant to local workers) in Commercial Fishery
- Type of Access Regime (open access, limited entry, etc)
- Status of Indigenous Rights and Resource Tenure
- Existence of Dedicated Access Privilege Program (or CDQ program)
- Distribution of Financial Benefits of Salmon Fisheries to Local Communities
- If Quotas are Tradable, Should be Partitioned into Different Types of Fishing Operations (large, corporate, small vessels, artisanal) That are Not Transferable

## **Cultural Wellbeing**

Source: Fisheries and Oceans Canada, Japan Ministry of Agriculture, Forestry and Fisheries (Japan), Fisheries Economics Data Program (US), United States Fish and Wildlife Service (US)

- Succession Rate: Percentage of Fish Quota to Remain with Family For Next Generation
- Percentage of Fishers Representing Artisanal (small boat) Fishery
- Level of Subsistence Harvest (compared to % of community qualified as subsistence)
- Loss of Traditional Fishing Practices (% of subsistence fishers using traditional practices)

## **Community Wellbeing**

Source: Japan Ministry of Agriculture, Forestry and Fisheries (Japan) Census Bureau (US), Fisheries Economics Data Program (US)

- Population Growth or Decline in Salmon Dependent Fishing Communities
- Percentage of Community Employed in Salmon Fishery
- Median Age of Fisherman (over time)
- Combined Gross Enrollment Rate For Primary, Secondary, Tertiary Schools
- Percentage of Functioning Families: Child With Natural Parents
- Economic Security Index: Household Income, Poverty, Unemployment Rate, Child Poverty Rate
- Percentage of Fish Consumption as a Proportion of Protein Intake
- Existence of Transition Assistance Program (retraining program) After Buy-back (% of individuals to complete training)
- Level of Unemployment assistance
- Conditions of Employment - Legally Binding Contracts, Working Hours, Overtime Regulations, etc

## **Management Regime**

Source: CalFish (US), InfoFish BC (Canada), Alaska Department of Fish and Game (US), United States Fish and Wildlife Service (US)

- Rate of Regulation Compliance
- Availability of Dispute Resolution Mechanisms
- Level of Data Collection and Transparency
- Process for Stakeholder Input Into Management Regime
- Process for Periodic Review of Management Impact on Salmon Dependent Fishing Communities
- Level of Compliance Enforcement
- # of Endangered ESUs De-listed After Recovery

## **Stewardship**

Source: CalFish (US)

- Percentage of Distributional Range of Salmon Under Conservation Regime
- Number of MSC Certified Fisheries Managed by Local Communities
- Number of Volunteers and Staff Working on Conservation Initiatives
- Environmental Programs Within Local Fisheries Associations

## II. ECONOMIC CAPITAL

### Trade & Market

Source: FAO Statistical Databases (Intl.), Japan Ministry of Agriculture, Forestry and Fisheries (Japan), National Marine Fisheries Service (US), Fisheries Economics Data Program (US), Alaska Department of Fish and Game (US)

- Market Value of Wild Salmon vs. Farmed Salmon
- Median Income In Salmon Fishery (vs. other professions)
- Cost of Entry into Business
- Net Operating Costs
- Income Distribution of Fish Industry Workers (owners vs. crew)
- Relative Profits Received by Salmon Fisheries Workers (owners and crews) vs. Processors and Retailers
- Employment Per Unit of Landed Weight (or value)
- Value Chain Assembly (# of buyers and purveyors)
- Export Distance
- Level of Fisheries Contribution to GDP

### Asset Investment

Source: Alaska Fisheries Information Network (US), Fisheries Economics Data Program (US), [CalFish \(US\)](#)

- Percentage of Boat Ownership/ Percentage of Indebtedness
- Cost of Insurance Premiums
- Ratio of Sale Value of Fishing Licenses to Value of Catch Per License
- Level of Overcapitalization of Fish Fleet (# and size of boats, level of fishing technology, etc)
- Existence of Buyback Programs for Overcapitalized Fisheries
- Latent Capacity (degree of unused quotas)
- Government Tax Breaks or Subsidies for Local Fisheries vs. Industrial Fisheries
- Existence of Trust Funds (“rainy-day” fund)

## III. NATURAL CAPITAL

### Habitat

Source: Fisheries and Oceans Canada (Canada), CalFish (US), Fish Passage Center (US), FishBase (Intl.), FishInfo BC (Canada), United States Fish and Wildlife Service (US)

- Deforestation Rates
- Level of Effluent Discharge (Land Based Pollution)
- Percentage of Freshwater Salmon Environment with Artificial Modifications (dams, hatcheries)
- CIESEN/ WCS Human Footprint
- Appropriation of Net Primary Productivity
- Change in Land Use and Coverage
- Area, Distribution, and Types of Wetland Vegetation
- Index of Biotic Integrity

### Salmon Populations

Source: National Marine Fisheries Service (US), CalFish (US), Seafood Market Information Service (Intl.), Statistical Yearbook of the North Pacific Anadromous Fish Commission (Intl.)

- % of Depleted Stocks Rebuilding
- Number of Wild Caught/Farmed Salmon

- Wild Salmon Catch: by Unit or Weight
- Number of Extinct or Endangered Salmon ESU
- Level of Contamination in Salmon (chemical, parasites, etc)
- Catch Per Unit of Effort
- Level of Bycatch (pounds of bycatch per pounds of target species)

## RESEARCH OUTLINE

The following research outline is intended to lay the groundwork of a research project and to help guide the next stage of indicator development. Ideally, work at this level would be conducted by an SEI team and include cooperation from a range of experts and institutional support.

### CONCEPTUAL ASPECTS

#### Scope of Research

- Pacific Rim nations with salmon commercial fisheries (US, Canada, Russia, Japan, Korea) with initial pilot project proposed for either Alaska or Oregon
- Socio-economic parameters of salmon sustainability
- Emphasis on salmon dependent fisheries communities

### PROCEDURAL ASPECTS

#### Steps for Selecting Appropriate S/E Indicators of Salmon Sustainability

1. Divide socio-economic sustainability into practical subcomponents
2. Establish goals for each S/E sustainability subcomponent
3. Be specific about the spatial and temporal scale at which the goals apply
4. Include scientists, salmon fisheries stakeholders, and salmon managers in the selection process
5. The selection process should be socially transparent and inclusive
6. Select condition, pressure and response indicators
7. Critically evaluate each indicator against evaluation criteria
8. Determine how each indicator can be used to make a real decision

### BOX 2- Selection Criteria

Before specific indicators are selected for use, each indicator should be tested against the following evaluation criteria. Indicators that are not evaluated for these criteria are unlikely to produce data that serves decision makers or salmon fisheries stakeholders well. See *Appendix A: Indicator Evaluation Matrix*.

Selection Criteria	Description
1. Available Data	Is data available, will it be repeatedly produced in the future?
2. Reliable Data	Is the data source credible?
3. Data Cost	Is acquiring or developing the data too costly?
4. Data History	Is data available from previous years; is it possible to identify a base year?
5. Region Wide	Can the data be normalized for comparison across regions?
6. Scientific Validity	Can the data be verified or reproduced scientifically; does it pass review by peers? Are benchmarks available against which indicators could be measured?
7. Available Benchmarks	

8. Neutrality	Is the data neutral or biased?
9. Understandability	Understandable – is the data easily understood, can it be easily conveyed or reported?
10. Relevance	Is it relevant to the topic of sustainability and our goal?
11. Compelling	Compelling – does the data tell you what you need to know?
12. Not Duplicative	Is the indicator distinctive from other indicators, and clearly relevant on its own merits?
13. Utility	Ability to inform decision makers of needed actions
14. Sustainability Breadth	Number of other sustainability components that the indicator measures

**Benchmarking:** provides for a process for setting goal-oriented targets with the purpose of measuring indicators against a given scale. This gives an indicator its context and value (Heinz Center for Science, Economics, and the Environment 2002). In our case, it may not always be possible to clearly define benchmarks (this issue would need to be further explored when addressing the question of sustainability). However, several established means are recognized to serve or substitute as benchmarks.

- Information on how indicator values have changed over time
- Information on regional differences citing similar values
- Generally accepted reference points
- Comparison to other indicators

Similar work on other indicator systems have explored the best methods and application of benchmarks. Many consider benchmarking as a priority, whereas others avoid the issue completely. While there is no standard formula for developing benchmarks, the SEI research underscores this important step. As such, we will incorporate best methods and lessons learned in developing our benchmarks. A sample of its significance is provided below.

**Tips on Using Reference Values and Lessons Learned:** (excerpted from the USDA Forest Service Local Unit Criteria and Indicators Development project August, 2002) During the LUCID Project forest teams experimented and tested the idea of using reference values for monitoring indicators. Highlights of some of those lessons learned and tips are presented here.

- **Challenges When Using Reference Values**
  - Difficulty defining reference values (hard to identify threshold because of lack of information and because it is a subjective process)
  - Reference values are subjective in nature (Although there are certain thresholds (albeit hard to identify) beyond which recovery is difficult, many different states can be sustained if the appropriate energies (e.g., management action or resources) are directed to sustaining it.)
  - Standardization of reference values (especially when used in a range of settings)
  - Implications that using reference values creates a determination of sustainability (misinterpretations that an individual indicator has an absolute value and that subsequently an absolute determination of sustainability can be made simply by summing up the scores of indicators in comparison to their respective reference values)
- **Merits of Using Reference Values**
  - Clarification of what is being measured and why, with a reexamination of the measure and the questions the indicator was addressing.
  - Identifying the right spatial scale (determining whether or not there needed to be variation in the measures and reference value across different units. For example, could the same reference value be applied to adjacent counties, watersheds, or forest types or were different reference values needed?)

- Identifying priority measures by determining whether a measure was sensitive to change or had a high information value.
- Creates discussion to address differing perspectives on the meanings or basic assumptions of sustainability.
- Elicits discussions on the temporal dimension to sustainability. Not only did teams discuss the time frame over which a change in values should be measured (for example to smooth out short-term variations), the discussion also often focused on the critical aspect from a sustainability perspective being the rate of change.
- Developing reference values leads to the identification and intervention of missing measures or other information

- **Lessons Learned from the Process of Developing Reference Values**

Participants had no preconception of the complexity and challenge involved in comprehensively using reference values and did not know what would be learned or what would be the value gained. Forest teams reported that developing reference values was the most difficult part of the process and they provided many suggestions for modifying it. Key suggestions include the following:

- Take time to clarify the rationale and implications of the reference value
- Document assumptions used
- Start early in the process, to clarify and revise indicators and measures
- Be specific
- Establish reference values using a collaborative, interdisciplinary approach rather than leaving these to individual specialists
- Discuss interrelationships between reference values, and use this information to help clarify systems relationships and tradeoffs between reference values
- Recognize that clarifying these tradeoffs will lead to some conflict
- Carefully assess the usability of legal standards, their underlying assumptions and scientific validity, and consider a second reference value if necessary
- Seek external expert judgment and input

### **Stakeholder and Audience**

According to the MSC's Guidance for Certification Bodies on Stakeholder Consultation in Fishery Assessments, a stakeholder is any person, group or organization who:

1. may affect, or be affected by, a certification decision, or
2. has expressed an interest in the fishery being considered for certification assessment and/or in other potentially affected resources, or
3. has information relevant to the assessment of the fishery for MSC certification.

Stakeholders represent the most critical source of information regarding a fishery. A thorough stakeholder consultation process is critical to build credibility and also decrease the likelihood of both substantive and procedural objections to certification determinations. For the purposes of our exercise, we have identified the following stakeholders:

- Salmon dependent fishing communities, tribal entities or individuals
- Standard setting organizations
- Government agencies and policy makers
- NGOs and other public interest organizations
- Academic researchers
- Adjacent or potentially affected salmon fisheries

## *OPERATIONAL ASPECTS*

### **Methods for Stakeholder Input:**

- State of the Salmon SEI Workshop (Fall 2005)
- Additional Workshop series (beginning 2006)
- Stakeholder and conflict analysis
- Full stakeholder consultation process
- 1<sup>st</sup> Public review process
- Document Draft Findings from Stakeholder consultation and 1<sup>st</sup> public review
- 2<sup>nd</sup> public review
- Final Findings made public and provided to relevant standard setting agencies
- Standards reviewed within five years

## RESEARCH TIMELINE

TASK	PROCEDURE	OBJECTIVE	COMPLETE BY
Review research parameters	Fall workshop and expert input, SEI team evaluation	Account for workshop and expert input	Fall, 2005
Address data acquisition and staffing limitations	Fall workshop and expert input, SEI team evaluation	Reduce limitations	Winter, 2005
Raise additional funds	Grant proposal- e.g. AYKSSI?	Research project fully staffed and funded	Winter, 2005
Extensive data gathering (archival) and review	Library, database, spatial analysis, and internet research, phone calls, interviews	Collect meaningful, effective data	Preliminary SEI set Spring 06, ongoing
Determine stakeholder interest, conduct academic consultation, attendance at relevant events	Site visits	Document local interest/ support; improve draft SEIs	Spring, 06
Select and initiate case study for indicator testing	Criteria based on Principles and Themes above	Demonstrate SEIs can measure component of salmon sustainability	Summer, 07
Data translation	Create database, enter data	Account for external data	Summer, 06
Summarize findings	SEI team evaluation	Review of data collected	Summer, 06
Circulate and receive feedback on findings	Email and letters	Generate feedback on data collected	Fall, 06
Workshop	----	Expert/stakeholder consensus	Fall, 06
Write peer-reviewed paper	Summarize project	Disseminate finding	Winter, 07

## NEXT STEPS AND SCHEDULE

Objectives	How will it be done?	Who will do it?	When completed?	Measures of Success	Barriers
Workshop debrief	Thank you letters, summary report, and miscellaneous follow up	Brian	October	Circulation of summary report	Brian overbooked
Refine indicators and benchmarks based on expert input	Consultation with State of the Salmon team	Ed, Astrid, Brian	October	Inclusion in grant proposal	Astrid and Ed overbooked
Evaluate indicators (matrix)	State of the Salmon team	Ed, Astrid, Brian	November	Set of draft core indicators	----
Identify partnerships with key researchers and/or consultants	Workshop, ongoing dialogue	Ed, Astrid, Brian,	Mid November	Commitment to further collaborate on indicator project	Contingent on funding
Develop grant proposal	Workshop and additional dialogue	Ed, Astrid, Brian	End of 2005 or prior to identified grant cycle deadline	Submission of proposal	Grant funding needs to be identified
Continue relationship building	Ongoing dialogue, collaboration on templates for assessment work	Ed, Astrid, Brian	?	?	?
Develop staffing plan	Emails, phone conversation, water cooler dialogue	Ed, Astrid, Brian	In conjunction with grant proposal or soon thereafter	Identification and hiring of program staff	Contingent on funding
Conduct research project	?	?	?	Complete research w/ data for testing and validation	Funding and staffing uncertainty
Test and validate research	?	?	?	Complete test results for publication and submission	Funding and staffing uncertainty
Write journal article and submit proposal to standard-setting agencies	?	Ed, Astrid, Brian	?	Published journal article and submitted proposal	Need to find appropriate journal
Watchdog annual surveillance audit	?	?	?	?	?

## CASE STUDY REVIEW

The following case study review highlights key standard-setting organizations that are relevant to our project to develop SEIs of salmon sustainability. Although, none of the following organizations have developed SEIs for salmon sustainability per say, their systems provide an important road map and lessons learned for our initiative.

## **I. FOOD AND AGRICULTURE ORGANIZATION (FAO)- INDICATORS FOR SUSTAINABLE DEVELOPMENT OF MARINE CAPTURE FISHERIES**

The Food and Agriculture Organization (FAO) is an international organization with a mandate to “raise levels of nutrition, improve agricultural productivity, better the lives of rural populations and contribute to the growth of the world economy.” The FAO provides a global forum, knowledge and information, and assistance in agriculture, forestry, and fisheries practices.

In 1991, the nineteenth session of the FAO Committee on Fisheries recommended new approaches to fisheries management emphasizing conservation and environmental, social, and economic considerations. The Code of Conduct for Responsible Fisheries was adopted in 1995. The Code, while voluntary, is partly based on applicable rules of international law and consists of five introductory articles, General Principles, and six thematic articles intended to guide behavior for responsible fisheries practices.

### **• Sustainable Development of Fisheries**

Emphasis is on the concept of “development” concerned with meeting human needs and well-being.

Objectives of sustainable development in fisheries is summarized as:

- ensuring food security for the world's population;
- creating competitive and profitable fisheries harvesting and processing activities;
- ensuring the long-term viability of the resource which supports these activities;
- catering for the well-being of a fishery workforce within a wider community and broader economic context; and
- maintaining the health and integrity of marine ecosystems for the benefit of other uses and users including biodiversity, scientific interest, intrinsic value, trophic structure and other economic uses such as tourism and recreation.

### **• Development of Indicators**

The use of a Sustainable Development Reference System (SDRS) is recommended to collect and organize the inherent performance evaluation nature of indicators. Development of SDRS involves five steps:

1. specifying the scope of the SDRS – overall purpose;
2. developing a framework to agree on components within the system – central is the inclusion of scope and purpose within a framework;
3. specifying criteria, objectives, potential indicators and reference values – important to develop and state objectives that is accepted by all stakeholders;
4. choosing the set of indicators and reference values – selection based on agreed upon set of criteria;
5. specifying the method of aggregation and visualization – interpretation and use needs to be easily performed by the user .

SDRS requires the establishment of a dedicated institutional mechanism, reasonable linkages, and formalized process to ensure the on going human and financial resources required for collecting data. Communication of the SDRS information (process to product) should be made accessible to policy and decision makers and all stakeholders. Reporting frequency needs to capture the rate of change within a system and should be consistent across all scales.

- FAO Technical Guidelines for Responsible Fisheries. Indicators for Sustainable Development of Marine Capture Fisheries. 1999. Food and Agriculture Organization

## II. FAIRTRADE LABELLING ORGANIZATIONS INTERNATIONAL (FLO)- COFFEE

Fairtrade Labelling Organizations (FLO) International is the worldwide Fairtrade standard-setting and certification organization. FLO International exists to improve the position of poor and disadvantaged producers in the developing world by setting Fairtrade standards that respects their interests. FLO has certified more than 800,000 producers in more than 40 countries. The point of reference for FLO certification is the International Fairtrade Standards. These include:

- **Generic Producer Standards:** Developed by the FLO Standards and Policy Committee along with stakeholder input from member organizations, producers, traders, and experts, the FLO producer standards are categorized into two sets of generic standards. One standard is for small farmer cooperatives and one for organized workers. In order to become a member organization, FLO requires “minimum” and “progress” standards for both groups, ensuring continuous improvement of working conditions, product quality, and environmental sustainability.
- **Standard Setting Procedures:** The FLO Standards and Policy Committee initiates a research phase that includes a forum for comprehensive stakeholder input before developing or revising a standard. A set of standards and a Fairtrade price proposal is published for formal consultation in line with the ISEAL Code of Practice on Standards Setting. An updated proposal is then submitted to the FLO Board of Directors for ratification.
- **Fairtrade Generic Standards for Coffee:** Small farmer cooperatives and other producers that seek the “Fairtrade” label must satisfy the following minimum standards:
  - Social Development
    - They must provide for equitable social and economic development
    - Limited to Small Producers (not structurally dependent on permanent hired labor)
    - Must incorporate procedures for stakeholder participation and transparency
    - Must be non-discriminatory
  - Economic Development
    - Fairtrade Price (“living wage”)
    - Fairtrade Premium (distributed across all beneficiaries)
    - Must have the ability to export their product
    - Must be self-supporting
  - Environmental Development
    - Need to have some standards for environmental responsibility and protection
  - Standards on Labor Conditions (applicable if the organization employs a considerable amount of workers)
    - Incorporate forced labor and child labor standards
    - Allow Freedom of Association & Collective Bargaining
    - Maintain fair conditions of employment
    - Maintain Occupational Health and Safety standards

The previous standards apply to all Fairtrade products such as coffee, cocoa, honey, quinoa, rice, herbs and spices, cane sugar, and wine. Additional product standards may apply depending on the product.

- Pdfs online at <http://fairtrade.net>
- Generic Fairtrade Standards for Small Farmers’ Organizations. January, 2003. Fairtrade Labelling Organizations International
- Fairtrade Standards for Coffee. June, 2004. Fairtrade Labelling Organizations International

### III. FOREST STEWARDSHIP COUNCIL (FSC)

The Forest Stewardship Council (FSC) is an international non-profit organization founded in 1993 to support “environmentally appropriate, socially beneficial, and economically viable management of the world’s forests.”

- FSC offers the following definition of ‘socially beneficial’:  
“Socially beneficial forest management helps both local people and society at large to enjoy long-term benefits, and also provides strong incentives to local people to sustain the forest resources and adhere to long-term management plans.”
  
- FSC has *ten principles of forest stewardship*. Of these ten, four directly address social issues:
  - **Principle 2: Tenure and Use Rights and Responsibilities:** Long term tenure and use rights to the land and forest resources shall be clearly defined, documented, and legally established
  - **Principle 3: Indigenous Peoples’ Rights:** The legal and customary rights of indigenous peoples to own, use and manage their lands, territories and resources shall be recognized and
  - **Principle 4: Community Relations and Worker’s Rights:** Forest management operations shall maintain or enhance the long-term social and economic well-being of forest workers and local communities
  - **Principle 5: Benefits from the Forest:** Forest management operations shall encourage the efficient use of the forest’s multiple products and services to ensure economic viability and wide range of environmental and social benefits

FSC is, while implementing its mission and social vision, striving to maintain the credibility of the FSC system as a whole, and is guided by its *Core Social Values* of:

- **Access:** Strive to make certification equally accessible to all forest owners and managers, regardless of age, gender, ethnicity, faith, cultural background, geographical location, scale or intensity of the operation, or ecosystem in which they operate.
  - **Partnerships:** Build long-term partnerships based on transparency, respect, mutual learning and reciprocal accountability.
  - **Legal rights:** Support and facilitate the legal and meaningful recognition of indigenous peoples’, local communities’ and workers’ rights, including traditional and customary rights to forest-related knowledge.
  - **Equity:** Promote inter-generational equity and the equitable distribution of benefits from the forest to Indigenous peoples and local forest dependant communities.
  - **Cultural identity:** Respect cultural identity and diversity, traditional local governance structures and decision-making processes, and the right to self-determination and self-development.
  - **Subsistence forest use:** Recognize and support as fundamental the subsistence use of forests by forest dwellers.
  - **Traditional forest stewardship:** Support traditional forms of good forest stewardship and their adaptation to changing social, economic and environmental conditions.
- 
- Pdfs online at [http://www.fsc.org/en/about/documents/Docs\\_cent](http://www.fsc.org/en/about/documents/Docs_cent)
  - FSC Principles and Criteria for Forest Stewardship. June, 2000. Forest Stewardship Council
  - FSC Social Strategy: Building and Implementing a Social Agenda v2.1. June, 2002. Forest Stewardship Council
  - FSC and Social Issues. November 2003. Forest Stewardship Council

#### IV. INTERNATIONAL SOCIAL AND ENVIRONMENTAL ACCREDITATION AND LABELLING (ISEAL) ALLIANCE

The International Social and Environmental Accreditation and Labelling (ISEAL) Alliance is a formal collaboration of leading international standard-setting and conformity assessment organizations focused on social and environmental issues. The ISEAL Alliance provides support to standard-setting organizations in the adoption of the Code of Good Practice for Setting Social and Environmental Standards.

- **Code of Good Practice:** An initiative which aims at setting a benchmark in assisting standard-setting organizations improve the development of social and environmental standards. The Code of Good Practice includes criteria for “local distinctions, clearly defined social and environmental objectives, free access to international standards, and a balanced governance structure” while ensuring that a standard reflects priorities of interested parties, addresses all material issues, and is effective in achieving its social and environmental objectives.
  - Section 5: Procedures for the development of standards – considered the core section of the Code, includes eleven essential criteria in the standard-setting process
    - Documented procedures for standard-setting process with the active involvement of balance of interested parties
    - Terms of reference and justification for need of the standard
    - Published work program
    - Public review phase with at least two rounds of comment submissions by interested parties
    - Take account of stakeholder input
    - Strive for consensus among balance of parties to guide decision-making about the standard
    - Make standards and procedures publicly available
    - Proper record keeping shall be prepared and maintained
    - Standards shall be reviewed on a periodic basis (at least every five years) and revised where necessary
    - Focal point made available for submission of comments
    - Separation of administrative requirements from technical, process or management requirements
- **Stakeholder Consultation Practices in Standards Development:** A consultation process is a necessity, as required by the Code, and a means to produce valid standards. Insight and recommendations are provided to help facilitate a successful and productive consultation process. Recommendations on procedural aspects of the consultation process regarding development, feedback, and follow-up provide a basis for focused, effective communication.
- Pdfs online at <http://www.isealalliance.org/documents/index.htm>
- Setting Social and Environmental Standards: A Research Report on Existing Standard-setting Practices. August, 2003. International Social and Environmental Accreditation and Labeling Alliance.
- ISEAL Code of Good Practice for Setting Social and Environmental Standards, Version 3. January, 2004. International Social and Environmental Accreditation and Labeling Alliance.
- Guidance on the Application of the ISEAL Code of Good Practice for Setting Social and Environmental Standards, Version 2. January, 2004. International Social and Environmental Accreditation and Labeling Alliance.
- Stakeholder Consultation Practices in Standards Development. September, 2005. International Social and Environmental Accreditation and Labeling Alliance.

## V. MARINE STEWARDSHIP COUNCIL (MSC)

The Marine Stewardship Council is an independent, global, non-profit organization seeking to harness consumer purchasing power to generate change and promote environmentally responsible stewardship of the world's most important renewable food source. The MSC has developed an environmental standard for sustainable and well-managed fisheries and uses a product label to reward environmentally responsible fishery management and practices. The MSC carries out its functions by:

- i. setting an environmental standard for sustainable fishing;
- ii. accreditation and monitoring by third party, independent certification bodies who carry out the assessment of fisheries and;
- iii. licensing of MSC logo for use on fish products from fisheries certified to the MSC standard.

To date, MSC has certified 11 commercial fisheries; another 14 are under review. Presently an additional 40 fisheries are in pre-assessment phase.

### • **The MSC Standard**

The MSC Standard, called *the MSC Principles and Criteria for Sustainable Fishing*, was developed through an extensive international consultation held over a period of two years and based on the FAO Code of Conduct for Responsible Fisheries. The MSC Standard consists of the following core principles:

- A. The maintenance and re-establishment of healthy populations of targeted species;
- B. The maintenance of integrity of ecosystems
- C. The development and maintenance of effective fisheries management systems taking into account all relevant biological, technological, economic, social, environmental and commercial aspects; and
- D. Compliance with relevant local and national laws and standards and international understandings and agreements

### • **Recent commercial salmon certifications**

Since 2000 MSC certifiers have certified or are in the assessment process for three commercial salmon fisheries, which include Alaska salmon (all five species), British Columbia sockeye salmon, and California Chinook salmon. With the re-certification of Alaska salmon underway, all three commercial fisheries are presently undergoing full assessment in 2005. Scientific Certification Systems, Inc. is the third-party certifier for all three assessments.

### • **Third Party Certifier and Socio-economic components of MSC**

During the assessment phase of the certification process, the third party certifier translates the MSC Principles and Criteria into a set of sub-criteria and performance indicators. These sub-criteria and indicators that measure the progress towards these goals are the key to the entire certification process. Included under the rubric of Principle 3 (Management), the MSC Criteria related to socio-economic components of sustainability include:

- The management system shall be appropriate to the cultural context, scale and intensity of the fishery
- The management system shall observe legal and customary rights and long term interests of the people dependent on fishing for food and livelihood, in a manner consistent with ecological integrity
- The management system shall incorporate an appropriate mechanism for the resolution of disputes arising within the system

- The management system provides economic and social incentives that contribute to sustainable fishing and shall not operate with subsidies that contribute to unsustainable fishing

If one looks in more detail at the performance indicators and scoring guideposts for the various salmon certifications currently undergoing assessment, one can find the following references to socio-economic sustainability:

- Indicator 3.1.6: The management system provides a process for considering the social and economic impacts of the fishery.
- Indicator 3.1.8: The management system provides for socio-economic incentives for sustainable fishing
- Indicator 3.3.1: Provides for consultative process that is open to all interested and affected stakeholders
- Indicator 3.6.3: The management system provides for the observation of legal and customary Tribal rights.

In order to receive a passing grade on this indicator, the fishery must meet either the 80 Scoring Guidepost requirements (passes with stipulation) or the 100 scoring guidepost (passes without stipulation). See Appendix C for the full explanation of these guideposts.

## Appendix A: Workshop Agenda

### Crafting Socio-Economic Indicators for Salmon Sustainability

A State of the Salmon Workshop

October 11 & 12, 2005

Kennedy School

Portland, Oregon

#### Workshop Schedule

#### **Tuesday, October 11, 2005**

- |               |  |
|---------------|--|
| 8-9 am        | Breakfast  |
| 9- 9:30 am    | Welcome and introductory comments by Dr. Astrid Scholz, VP of Knowledge Systems, Ecotrust  |
| 9:30-10 am    | Self introduction by all workshop participants   |
| 10- 10:30 am  | The value and role of the Marine Stewardship Council and other standard setting programs by Wild Salmon Center's Brian Caouette with additional comments by Jim Humphreys and Will Novy-Hildesly |
| 10:30- 10:45  | Coffee break   |
| 10:45- 11:30  | Methodology for creating new sustainability indicators- lessons learned from Olaf Paulsen in his work to create Fair Trade standards for the EU  |
| 11:30- 12 pm  | Presentation of straw dog indicators by Brian Caouette and Jason Beloso  |
| 12- 1 pm      | Lunch  |
| 1:00- 2:30 pm | Identify key principles and indicators of salmon sustainability- emphasis on <b>social capital</b>   |
| 2:30- 2:45 pm | Coffee break   |
| 2:45- 4:15 pm | Identify key principles and indicators of salmon sustainability- emphasis on <b>economic capital</b>   |
| 4:15- 5 pm    | Summary of findings from day one and next steps by Astrid Scholz and Brian Caouette  |
| 7- 9 pm       | Drinks followed by dinner at Kennedy School  |

## Workshop Agenda, Continued

### Crafting Socio-Economic Indicators for Salmon Sustainability

A State of the Salmon Workshop

October 11 & 12, 2005

Kennedy School

Portland, Oregon

#### Wednesday, October 12, 2005

- |             |  |
|-------------|--|
| 8-9 am      | Breakfast  |
| 9- 9:30 am  | Review of progress from Tuesday's meeting and outline of goals for Wednesday's meeting                                       |
| 9:30- 10 am | Group discussion of identified indicators and additional comments  |
| 10- 12 am   | Assess identified indicators against evaluation criteria in order to isolate best indicators to proceed to scoring stage     |
| 12- 1 pm    | Lunch  |
| 1- 2 pm     | Design a research plan for our ongoing indicators project and identify potential research partners and funding opportunities |
| 2-3 pm      | Review of progress, next steps, thank you by Ed Backus   |
| 3 pm        | Transportation to airport and/or train station   |
| 3-6 pm      | Optional hike to Columbia Gorge National Recreation Area   |



## Appendix C: MSC Indicators and Guideposts

**Indicator 3.1.6:** *The management system provides a process for considering the social and economic impacts of the fishery.*

### 100 Scoring Guidepost

- There exists a formal and well-defined process to consider, over the short and long term, the views, customs, and interests of indigenous peoples who depend on fishing for their food or livelihood.
- There is a formal and well-defined process to consider, over the short and long term, the impact of the fishery on coastal communities that are closely tied to the fishery.
- There are no direct subsidies to the fishing industry.
- The management system regularly seeks and considers input from stakeholders in an effort to understand and address socioeconomic issues related to the fishery.

### 80 Scoring Guidepost

- The management system regularly undertakes to consider the views, customs and interests of indigenous peoples whose livelihood or food are dependent on the fishery.
- The management system regularly takes into consideration the impact of the fishery on coastal communities that are closely tied to the fishery.
- There are no subsidies to the fishing industry that would lead to unsustainable fishing or ecosystem degradation.
- The management system regularly undertakes measures to understand the socioeconomic impacts resulting from the management of the fishery.

### 60 Scoring Guidepost

- The management system more often than not considers the views, customs, and interests of indigenous peoples who depend on fishing for a livelihood or food.
- More often than not the management system considers the impact of the fishery on coastal communities that are closely tied to the fishery.
- For the majority of the fisheries there are no subsidies that threaten sustainable fishing.
- More often than not, the input of stakeholders is sought by the management system.

**Indicator 3.1.8:** *The management system provides for socioeconomic incentives for sustainable fishing.*

### 100 Scoring Guidepost

- The management system has formal procedure for providing social and economic incentives to stakeholders in the fishery to develop and utilize sustainable fishing practices, particularly the development of selective fishing gear and practices that lead to improved conservation.
- The management system creates strong incentives for harvesters to not exceed target catches or exploitation rates
- The stakeholders in the fishery regularly avail themselves of the opportunity to utilize these incentives.
- Evidence provided by the management system demonstrates that such incentives have contributed to improved conservation.
- The management system continually attempts to understand the impact of their decisions on social and economic factors affecting the stakeholders in the fishery and regularly takes action to mitigate the impacts on stakeholders.

### **80 Scoring Guidepost**

- The management system regularly considers the use of social and economic incentives to the stakeholders in the fishery, which are designed to facilitate the development of fishing gear and practices that can lead to sustainable fishing.
- The management system includes a program to create incentives for harvesters to not exceed target catches or exploitation rates.
- Evidence demonstrates that the stakeholders in the fishery have used such incentives.
- The management system attempts to understand the impact of their management decisions on social and economic factors affecting the major stakeholders in the fishery and takes action to lessen the major impacts on stakeholders.

### **60 Scoring Guidepost**

- The management system provides for the use of social or economic incentives to ensure sustainable fishing.
- The management system attempts to understand the impact of its decisions on social and economic factors affecting the stakeholders in the fishery and is responsive to requests to reduce these impacts.

***Indicator 3.3.1: Provides for a consultative process that is open to all interested and affected stakeholders, which allows for their input on a regular basis into the management process.***

### **100 Scoring Guidepost**

- The management system provides a formal arrangement for the direct participation of all interested and affected stakeholders from both the public and private sectors, on matters of a social, cultural, economic and scientific nature.
- The management system provides timely, advanced notice of meetings at which there can be stakeholder participation.
- The management system does not exclude any interested and affected stakeholder from the consultative process.
- The management system addresses the interests of all interested and affected stakeholders.

### **80 Scoring Guidepost**

- The management system provides for the regular participation of most interested and affected stakeholders on matters of a social, cultural, economic and scientific nature.
- The management system generally provides notice of meetings at which there can be stakeholder participation.
- The management system does not usually exclude involvement of any interested and affected stakeholder.
- The views of most interested and affected stakeholders are regularly considered in the formulation of management strategies.

### **60 Scoring Guidepost**

- The majority of interested and affected stakeholders are provided with a forum for input into the formulation of management plans and measures.

***Indicator 3.6.3:           The management system provides for the observation of legal and customary Tribal rights.***

### **100 Scoring Guidepost**

- The management system is in compliance with all major legal and customary Tribal rights that are impacted by the fishery.
- The management system includes processes for Tribal consultation on the impact of the commercial fishery on their food, social and ceremonial fisheries.

### **80 Scoring Guidepost**

- The management system is found to be in compliance with all legal and most of the customary Tribal rights that are impacted by the fishery.

- The management system includes processes for providing information to Tribes on the major impacts of the commercial fishery on their food, social and ceremonial fisheries.

## 60 Scoring Guidepost

- The management system is in compliance with Tribal legal rights that are impacted by the fishery.

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