



EXTENDED ABSTRACT

**THE HUMBOLDT CURRENT LARGE MARINE ECOSYSTEM
INTEGRATED MANAGEMENT**

Module 4. SOCIOECONOMIC ASPECTS - CHILE

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EXTENDED ABSTRACT

THE HUMBOLDT CURRENT LARGE MARINE ECOSYSTEM INTEGRATED MANAGEMENT

Module 4. SOCIOECONOMIC ASPECTS - CHILE

I. GENERAL BACKGROUND

The aim of the Humboldt Current Large Marine Ecosystem Integrated Management Project (HCLME) is to achieve the sustainability of this ecosystem and increase its ability to resist environmental dangers and climate change, in order to maintain its biologic diversity and integrity, including the services that it provides to present and future generations.

In order to achieve the aim and the results of the project, a Transzonal Diagnosis Analysis (TDA) across the HCLME area was considered a priority. Within this context, an update of various components of the TDA 2003 was suggested, including the socio economic aspects and the production chain, the inclusion of updated socio economic aspects related to the use of goods and services in the HCLME area.

The initial TDA (HCLME 2003) was developed through the Global Environment Facility (GEF) for the years 2002 to 2003 and in the final document are identified and discussed the transzonal priority problems in the Humboldt Current Large Marine Ecosystem.

That document included a preliminary analysis of the causal chain (ACC) and the identification of problems, relevant causes and a first record of the information gaps.

The report, identified and characterized four priority problems affecting the HCLME:

- 1) The suboptimal exploitation of fish and other living resources,
- 2) Insufficient knowledge HCLME variability,
- 3) Habitat degradation, and
- 4) The reduction of biodiversity, due to fishing pressure.

In this context, this study raised central objective:

“Based on information and studies available, provide a socio-economic assessment HCLME area, in terms of goods and services, in order to increase the development of an updated version of Transzonal Diagnostic Analysis (TDA) and Strategic Action Programme (SAP) for HCLME area”.

The present study intends to examine and update the socio economic aspects of the TDA 2003, carried out for the area of Chile and provide a socio economic assessment of the HCLME area, focusing on goods and services.

II. A SENSE OF PLACE

The Humboldt Current is located west of South America and reaches 5° latitude south (in northern Peru) and flows up to 47° latitude south (in Southern Chile). This region contains a large array of coastal ecosystems, across most part of the coast of Peru and Northern Chile. The most important activities in this region are agriculture, fishing, aquaculture and mining.

The marine area of the Humboldt Current sustains one of the most productive marine ecosystems in the world that possesses a biodiversity of global importance, and upwellings throughout the entire year across the Peruvian coast, and mainly in Spring and Summer across the Chilean Coast.

The impacts of global warming have not had a serious effect in Chile due to the influence of the Pacific Ocean on the climate, and specifically given the presence of the Humboldt Current, the characteristics of which have helped maintain the temperatures lower. Nevertheless, various studies warn of signs of climate change such as: reduction in rainfall, increased ice melting, rise in sea level, and changes in vegetation.

In this regard, several studies warn about climate changes in Chile, such as:

- **Decreased Rainfalls:** In the last 71 years there has been a marked and sustained decrease in rainfall. In this period, Valdivia area (southern Chile) rainfalls has decreased by 540 millimeters and according to data from the Meteorological Service of Chile show as in the past 100 years tend to decrease rainfall in the central region. Also, in the south of the country, records of river flows show a clear downward trend.
- **Thaw Increase:** 90% of mountain glaciers are shrinking and retreating. While in Southern Ice Fields, in the far south of Chile, recorded declines of 30 meters per year.
- **Increase sea level:** It has been observed that the sea level is increasing at a rate of 0.3 cm per year.
- **Changes in vegetation:** Studies on the basis of the growth rings of trees, suggest that the distribution of the vegetation in the southernmost area is undergoing major changes. "It is expected that the limits of distribution of some species move south, which could significantly affect biodiversity, distribution and abundance of species in native forests" (GIWA, 2006).

The effects of climate change on socio-economic aspects in Chile will be more significant in the central and south areas, where the population is concentrated. In this regard, it is estimated that 50% of artisanal fishermen in the central and southern regions would be particularly affected because of changes in the current distribution of target species, a

situation that would result in a migration of fishermen and important changes in the structure productive, employment status and employment. (GIWA 2006)

The fisheries sector comprises a system that is highly vulnerable to environmental impacts caused by the growth and development of fishing activities. As a result, the present levels of marine resources exploitation are discouraging when taking into account the decrease in biomass of the main commercial species and the risk of collapse of some fish species. Likewise, certain stocks have reached levels of maximum sustained yield with a degree of over-exploitation.

Although the establishment of Marine Protected Areas (MPAs) is an action that is widely applied in the States to ensure the preservation and conservation in situ of biological diversity and natural resources that are characteristic and unique in a territory, Chile does not have a unitary system of marine and terrestrial protected areas in place to ensure the implementation of integrated protection systems. Nevertheless, it must be recognized that the present and recent legal instruments intended to protect the natural heritage of the country have established various areas and categories to protect marine areas.

Together, these areas cover an approximate surface of 185.000 hectares, which accounts for close to 4.4 % of the maritime territory under national jurisdiction, is under some form of protection. It must be highlighted that although the Convention on Biodiversity agreed that in the year 2020, 10.0 % of the State Party's Exclusive Economic Zones (EEZ) should be protected, presently, such protection does not exceed 2.0 %.

According to census data taken between 2010 and 2012, by the National Statistical Institutes of Chile, Ecuador and Peru, all three countries have a total population of about 61.2 million, of which 46.7 million are in the area of direct influence in the region of the Humboldt Current (Chile and Peru).

Given the geography of the countries of the region, a high percentage of the population lives in the coastal strip 100 kilometers, estimating that such a population would be around 75.0%.

For Chile, the last census conducted in 2012, shows that the total population reached 16.6 million, representing an increase of 10.1% of the population recorded in the 2002 census . Also, the total average density reaches 21.9 habitants / km².

These records mean that the average annual growth rate of the Chilean population reaches 0.97%, with a decrease in the rate compared to those that occurred in the decades immediately preceding.

Moreover, it should be noted that in the period 1950-2002, life expectancy in Chile showed a gradual growth and rising from 55 years in 1950-1955 to 76 years at the end of last century. Currently this indicator reached at 79.2 years and the projection for 2025 is that the life expectancy would be at the level of 81 years.

Poverty levels in the country have declined considerably and steadily rising from 36.8% in 1990 to 13.5% in 2012 (Ministry of Social Development. 2012 CASEN).

Finally, it is appropriate to add that by 2002 4.6% of the population recognize belong to an ethnic group. This population is distributed in the eight indigenous peoples recognized in the Indigenous Law: Mapuche, Aymara, Rapa Nui, Atacama, Colla, Quechua, Alacalufe and Yamana. Of these, the majority ethnic group is the Mapuche with 87.3% of the total indigenous population. Second is the Aymara village with 7.0% and thirdly the people Atacameño with 3.0%. All other ethnic groups have less than 1.0% of the proportion of the indigenous population.

III. PROBLEMS RELATING TO SOCIOECONOMIC INDICATORS

1. Update TDA 2003

Since the year 2002, and up to date, important changes in the goods and services that may be obtained from the HCLME area have been observed along the Chilean Coast. Such changes obey to various situations, such as:

- Status of the main commercial fisheries with a maximum exploitation level
- Low availability of Jack Mackarel, stocks managed by RFMO
- Presence of ISA Virus in Salmon marine culture
- Tsunami Earthquake Event, on February 27th, 2010
- Increased tourist activity
- Increased environmental awareness
- Entry of Chile into the OECD
- Important changes in fisheries and environmental legislation

In light of the above, it is possible to foresee significant modifications in the production strategy; in the operational results of the main activities of the sector (fisheries and aquaculture); in the participation of the main sectorial actors (industrial and artisanal operations); in the volume, price and returns of domestic exports; the existence of a new legal framework for fisheries activities; the establishment of a new environmental institutional structure of the country; and others, that undoubtedly modify the scenario observed in the year 2002 and, as a result, the diagnosis made at that time.

Such a situation can be seen in Figures 1., 2., 3. and 4. following, which show for the period 1991-2012, the evolution of landings and participation from industry, artisanal and aquaculture, the behavior of the manufacturing industry production trends, and economic performance (exports) of sectors, respectively.

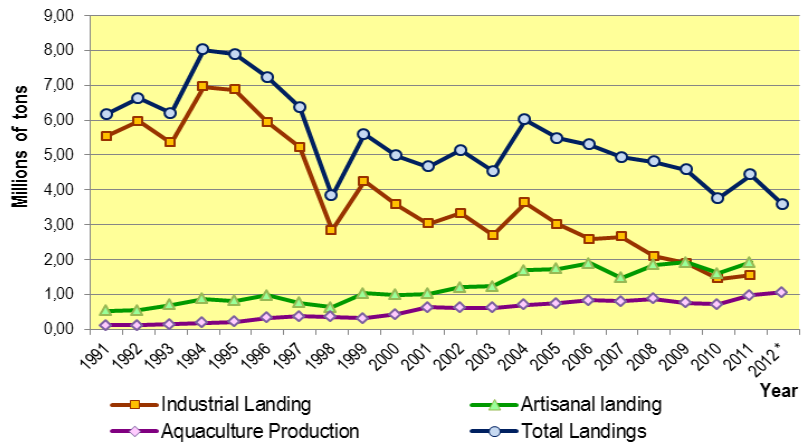


Figure 1. Evolution of total landings by sector of origin, 1991 -2012

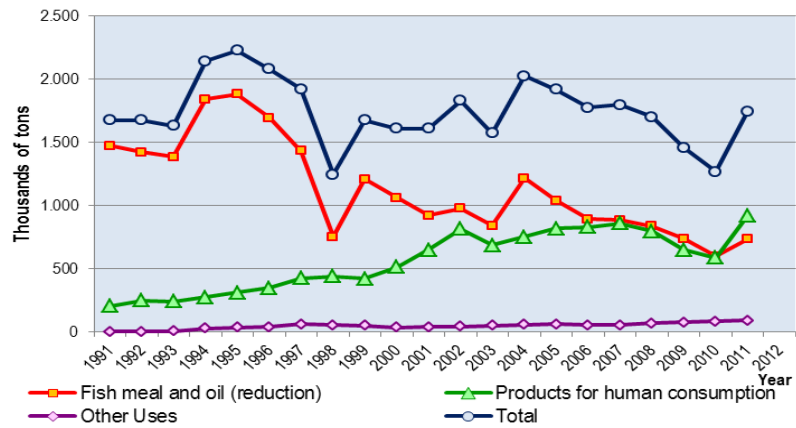


Figure 2. Evolution of total fisheries production, by type of product, 1991 -2012

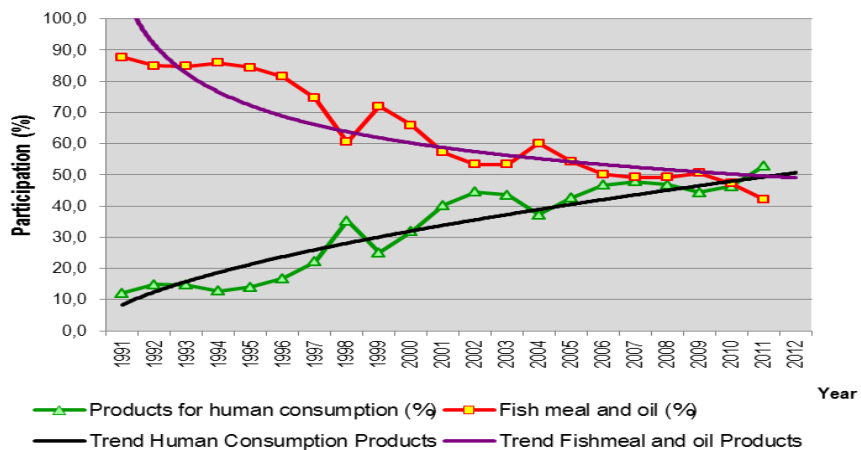


Figure 3. Trends in the development of fishery products for human consumption and reduction. 1991-2012.

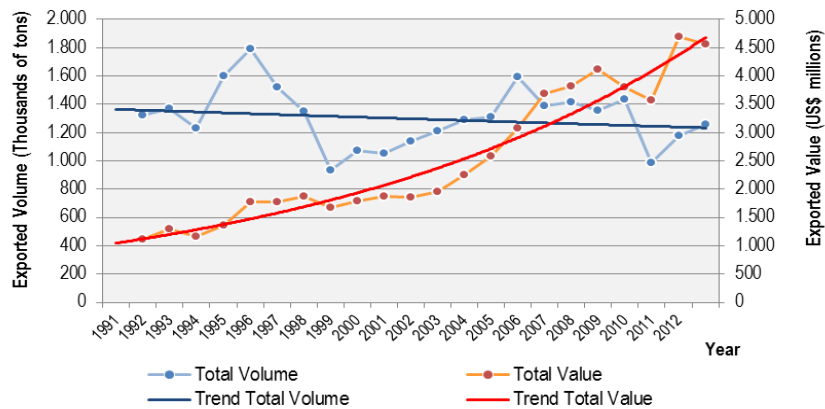


Figure 4. Behavior and trends in the volume and value of fish exports. 1991-2012

In the period 2002-2012, the direct labor linked to the sector has shown an average annual growth rate of about 2.6% from an estimated total of 104.731 jobs in 2001 to an estimated labor force 132.158 jobs in 2011.

Labour participation of the fishing industry regarding the total work force of the country, in 2011, reached 1.7% maintaining the concentration of this labor force in the regions, particularly in the extractive fishing, aquaculture and processing (manufacturing), something that strongly affects the economy of the major fishing regions of the country.

During the period 2001-2012, the sector was marked by three high impact factors on employment:

- low availability of fishery resources, which led to a contraction in employment estimated at around 5,000 jobs in capture fisheries,
- the presence of ISA virus that generated a crisis in the salmon industry, which was reflected in the separation of between 12,000 and 15,000 workers from farms and
- The earthquake tsunami (from February 27, 2010) that left unemployed (at least temporarily to about 9,000 families linked to artisanal fishing and unquantified number of workers in the industrial sector.

However, it is important to note that the decline in the supply of raw materials (resource availability) led the sector to change its production strategy, guiding the raw materials to the production of products with higher value added, more intensive activity jobs, situation which offset and regained employment levels.

On investment, the economic boom in the sector observed during the first half of the 90 stimulated investment, increasing excessively extractive capacity of the fleet and the installed capacity of the plants, observing a contraction of investment in the late decade. Although in the years following was recorded moderate tendency to increased investment, in the period

2008-2010, there was a steady decline in investment in the sector concluding 2010 with an investment of around \$ 179 million, a figure 37.3% lower than that earned in 2008.

Some relevant indicators related to this change of scenario are related to:

- ✓ Landings of extractive fishing, with a clear downward trend
- ✓ A rise in aquaculture harvests, accounting for 30% of domestic landings
- ✓ A change in the industry's production strategy, focusing efforts toward obtaining products with increased added value
- ✓ Raw material used to manufacture products intended for direct human consumption (frozen and chilled fresh)
- ✓ Value of domestic fisheries exports continues to rise, led by aquaculture harvests accounting for 67% of the total domestic fisheries products export values
- ✓ Employment is recovering, with respect to the beginning of the last decade, and is presently stable at around 130.000 direct jobs
- ✓ Sectorial investments that have come to a certain level of stagnation due to market conditions and the availability of resources.

In the legal field, have also observed significant progress in the last decade, among which are:

- 2010 Modification Law on Fisheries and Aquaculture, aimed at improving the management and development of aquaculture activities
- 2013. Modification Law on Fisheries and Aquaculture, which introduces significant adjustments to capture fisheries, particularly in relation to access to the activity
- 2010. Modification Law on General Basis Environment, through which you create new environmental institutions in the country
- 2002 to 2012. Various regulatory bodies (bycatch, peoples-ethnicities, and other)

2. Analysis of goods and services of HCLME

In the field of the analysis of HCLME Goods and Services, the lack of information is one of the main difficulties for assessment purposes. Nevertheless, it is possible to observe that the current status of the main fisheries has translated into a considerable drop in fisheries assets. Thus, and in a first approximation, the assessment of total landings by extractive fishing activities in the year 2000 (4.438.381 tons) compared to the volume recorded in the year 2011 (3.426.731), valued using updated transaction prices (dock prices), makes it possible to estimate that the Government has displayed a drop in fisheries assets close to 608 million dollars, which accounts for a capital loss equal to 32.1% in the 2000 – 2011 period.

Likewise, the individual assessment of various services that regulate ecosystems confirmed the information deficit, which hinders the performance of an appropriate assessment of the goods and services provided in the HCLME area.

Without prejudice of the above, this work aims at assessing the status of certain regulating services associated to the value of indirect use, such as: biological control, environmental conditions, regulation of natural disturbances, shelter-habitat and waste treatment. Of such areas, information was only available with relation to the last three, allowing for quantitative partial and referential estimations.

To this regard, in the area of natural disturbances, the effects of the earthquake-tsunami that occurred in 2010 in Chile is considered, which caused the artisanal sector 40 million dollars in losses, 300 million dollars in processing plants, and a 15.0% drop in annual landings. On the other hand, in the area of shelter-habitat, it is worthy noting that at present 4.4% of domestic marine areas are protected, with a government investment of 1,24 US\$/ha/year. As to aquaculture operations, the dumping of waste is a matter of utmost relevance since in the year 2000, environmental costs on account of aquaculture reached between 78 to 153 million dollars.

In general, the background checks available to various regulatory services in HCMLE, are shown in **Table 1**.

With relation to the provision services related to the direct use value, this work examines and assesses aspects that are mainly associated with: extractive fishing, aquaculture and tourism, services that despite having more available information, have serious knowledge gaps in terms of socio economic information.

The main issue is that the assessment of extractive fishing draws on the production of marine reservations (1,03 million US\$), the value of management area production (19,0 million US\$), and between 1.300 to 1.700 million for 1% of the total allowable catch (TAC), for 10 years. The aquaculture sector registered 5.000 million dollars in losses due to the presence of the ISA virus in salmon culture and the loss of 17.000 to 23.000 jobs; the lack of environmental and sanitary assessments; and the lack of studies related to the load capacity of the ecosystems. On the other hand, within these services of direct use value, the significant rise and development of tourism must be underlined, an activity that showed an 11,0% increase in the year 2011, compared to 2010, and in 2008 recorded an average expense of US\$ 11,3 (domestic) and US\$ 53,8 (foreign) by trip.

A summary of various aspects associated with provision services in the HCLME, is given in **Table 2**.

Table 1. Review of the indirect use value (regulatory services). HCLME

Regulator Service	State
Biological Control	It is relevant for aquaculture
	Not identified or quantified the impact ISA, in the marine environment
	Status is unknown biodiversity subsequent ISA event
	Presence of the parasite Caligus in high densities in the salmon. Currently, nine parasites recorded units of salmon
	These diseases in aquaculture, threatening the country's health status
	This affects the activity and the welfare of society (significant job losses)
Environmental Conditions	Presence of environmental phenomena (such as El Niño)
	No socioeconomic impacts evaluated generated by El Niño
	It ignores the impact of this phenomenon (El Niño) on the capital stock
	Is unknown climate-atmosphere relationship with other productive activities (tourism)
Regulating Natural Disturbances	Earthquake-Tsunami 27 / F meant: loss of US \$ 40 million in the artisanal sector
	The artisanal fisheries sector is the most affected with these events, due to significant socio-economic impact
	Significant losses in productive capacity on the ground. It lost US \$ 300 million in processing plants
	Annual landings had decreased 15% by 2010 (US\$ 70 million, first transaction value)
Refuge - Hábitat	Chile has enhanced habitat care, with the establishment of Marine Protected Areas
	Existence of many and complex figures of Marine Protected Areas areas
	Currently, 4.4% of the marine area is protected (soon to increase to 11.5%)
	Total Economic Value of Coastal Marine Protected Areas is estimated at 1.3 million US\$/year
	The Value of Exploitation of Marine Reserves is estimated at US \$ 1.1 million
	Exploiting The Value AMERBs, is estimated at US \$ 19.0 million
	It is estimated that the government spends 1.24 US \$ / ha / year
Waste Treatment	Evacuation of waste is regulated in the country
	Currently, a large percentage of waste liquids, solids and domestic being treated
	It is necessary to assess the impacts of specific events (spills, ballast water)
	Aquaculture is in the process of installing an information system for environmental monitoring of funds and water layers.
	During 2000, it was estimated that the environmental costs generated by aquaculture were between US\$ 78 and US\$ 153 million

Table 2. Review of the direct use value (provision services). HCLME

Provision Service	State
Extractive Fishery	There is a readjustment to the new situation in the industry
	Sectoral Planning does not include the value of G&S's ecosystem
	Existing valuations are bounded:
	<ul style="list-style-type: none"> - Marine Reserves (value of production): US\$ 1.06 million (223.3 US \$ / ha) - Management Areas Artisanal Fisheries (value of production): US\$ 19.04 million - CTP (1% value cuota/10 years): US\$ 1,300-1,700 million - VED (economic Value landing): loss of US\$ 608 million (2000-2011)
	Valuation estimates do not include illegal and informal landings
Aquaculture	General indicators: 29.8% by volume of total landings in the country, 47.2% of the total volume exported and 67.0% of the total value of fish exports
	No review available health and environmental status, or load capacity estimates
	ISA crisis generated (between 2009 and 2010) decreased from 50.3% of the average production of Atlantic salmon
	Total loss of the salmon for ISA effect was estimated at 5,000 million
	In ISA crisis period between 17,000 and 23,000 lost jobs
	Shows a decrease in the amount of nutrients (P and N)
	The number of centers and aquaculture concessions operated the 2010-2011 show increases of 14.0% and 10.7%, respectively 2010, is amended aquaculture legislation, which sets higher demands
Tourism and Recreation	Chile shows a significant development and growth of tourism
	In 2011, 43.6% of the tourists were foreigners (with an increase of 11.0% compared to 2010)
	Valuations available, are only related to Special Interest Tourism (SIT) in Protected Areas (Pas).
	In 2008, the SIT reported an average expenditure per trip of US \$ 11.3 (national) and US \$ 53.8 (foreigners)
	The total foreign tourist spending in 2011 was US \$ 2,315.9 million (2.5% of total exports of goods and services in the national economy)
Genetic Resources	Not provide quantitative or qualitative background
	It requires to know the effect and contribution of these (genetic resources), on the conservation of ecosystems

Cultural services is one of the most deficient in information, which limits the analysis of aspects such as aesthetics and natural conditions, quality of jobs, cultural diversity and spiritual values and historical, among others.

An analysis of the assessment of goods and services of the HCLME included an examination of eventual contributions associated to the no use value, such as: existence value and the value of legacy (heritage) and it was determined that, although there are important legislative progress made in the protection of biodiversity and ecosystems, there is a lack of socio economic studies concerning the appraisal of existence values and heritage.

IV. COMMON PROBLEMS RELATED TO SOCIO-ECONOMICS

1. Priority Problems

On the basis of the examined information, the following key issues were identified:

- Fisheries in maximum operating level, with obvious signs of risk, situation generated by setting quotas above recommended, lack management plans and production overcapacity, among others, which have resulted in inadequate (suboptimal) exploitation of fisheries resources.
- Decrease in capital stock due to above recommended catch and conducting illegal practices (such as bycatch), something that reflects the suboptimal exploitation of fishery resources.
- High sanitary and environmental impacts generated by aquaculture, particularly salmon farming, a condition that has been sensitized by overproduction, high density, low pharmaceuticals use control and low control of schools, among others, putting in equity risk and environmental health of ecosystems.
- Demands to support the growth and development process country, generated by conflicts of interest on the coastline, lack of complementarity in the use of spaces, installation of energy sources and greater social awareness of the protection of ecosystems.
- Difficulties to support decision-making and administration under an ecosystem approach, mainly due to insufficient knowledge HCLME variability.
- Reduction of biodiversity and habitat degradation, product of the use of harmful fishing methods (trawl), exercise of malpractice catches (bycatch) and intense fishing pressure on available resources, and
- Lack of monetary valuation of goods and services (G&S's) of HCLME, due to lack of information to identify and measure the contribution of the G&S's HCLME and budget deficits necessary to support socio-economic research in the area.

Such problems are the result of various situations of common nature and/or transzonal, which are summarized in **Table 3**.

Table 3. Conditions associated with the priority problems identified in the HCLME

Concerns (common and transzonal)	Priority Problems
<ul style="list-style-type: none"> ▪ Stocks Decline HCLME ▪ Uncertainty associated with associated ecosystem variability ▪ Low commitment to clean production practices ▪ Growth Sector, based in aquaculture and generation of higher value-added products ▪ Overinvestment in productive sector (fleets, plants, farms) ▪ Competition for investment in coastal areas (tourism, aquaculture, energy sources) ▪ Increased energy industry in the coastal ▪ Overuse of coastal marine areas (aquaculture) ▪ Presence of negative sanitary events ▪ Tourism Development Policies ▪ Uncertainty labor on job stability and quality ▪ Policies and regulations sustainable approach and recent ecosystem capabilities ▪ Deficit status knowledge, analysis, management and valuation of ecosystems ▪ Limited platform for knowledge and research, the socioeconomic ▪ Limited budgets for research and sectoral management ▪ Absence of a monitoring and evaluation system (M&ES) HCLME ▪ Information Deficit 	Highest level of fisheries exploitation and, with signs of risk
	Decreased capital existence
	High health and environmental impacts generated by aquaculture (salmon)
	Demands to support the growth and development process country
	Difficulties in decision support and management under an ecosystem approach
	Reduction of biodiversity and habitat degradation
	Deficit in the knowledge of the monetary valuation of the G&S's HCLME

2. Causal Chain Analysis

As a way to check the priority problems identified above was made, so referential, causal chain analysis (CCA) to investigate the possible socioeconomic causes that could generate such problems and identify elements that can be integrated as inputs to a comprehensive analysis of common problems in the HCLME.

The result of this analysis, is given in the **Table 4.**, that taking into account different transzonal concerns nature (direct or indirect), identify associated socioeconomic problems, and try to describe the causes (immediate, underlying and root) of the problem identified.

Table 4. Preliminary Causal Chain Analysis of socio-economic aspects associated with HCLME

Problem	Immediate Cause	Underlying Cause	Root Cause
Highest level of fisheries exploitation and, with signs of risk	Establishment of quotas above recommended / Lack of management plans / Overcapacity productive	Weaknesses in the regulation and administration sector / Weak enforcement actions / Insufficient resources to enforcement / Slow court action	High demand for seafood, by international markets / Inadequate management of transzonal fisheries / Budget insufficient to enforcement
Decreased capital existence	Quotas and catches over recommended / Illegal practices (bycatch)	Inadequate exploitation of fish and other living resources / Weak enforcement actions / Under sectoral agents commitment to sustainability / Insufficient resources to enforcement	High demand for seafood, by international markets / Lack of knowledge of the existence of Capital / Inadequate management of transzonal fisheries
High health and environmental impacts generated by aquaculture (salmon)	Overproduction / High density / Low control drug use / Under control of schools movements / Low level of compliance with clean production commitments	Inadequate regulation and administration sector / Productions over load capacities of ecosystems (Aquaculture) / Lack of technical capacities / Lack of powers to the sanctioning body / Low level of knowledge and insufficient information	High demand for salmon products from international markets / conditions favorable (from Chile) to participate in the market for salmon / Down regulation for the activity (to 2010). Latest changes will result medium-long term
Demands to support the growth and development process country	Conflicts interests in the coastal area / Lack of consistency in the use of the coastal area / Increased citizen demands	Deficiencies in current use policy coastline / Deficit on updating regulations governing production and service activities in the coastal / Lack of an integrated and national plan for the management of activities focused on the coastal	Energy demand for growth and development of the country / Need to meet demand of tourism
Difficulties in decision support and management under an ecosystem approach	Insufficient knowledge of the variability of HCLME / knowledge deficit in goods and services HCLME	Lack of technical capacities for the management, analysis, evaluation and valuation of ecosystems / Insufficient research platform on aspects socioeconómicos / Difficulties in establishing sector standares	Lack of national and transzonal policies of sustainability, with an ecosystem approach / absence of plans for strengthening the technical capacities
Reduction of biodiversity and habitat degradation	Inadequate environmental regulation / Use of inappropriate fishing methods (trawling) / Inadequate fishing practices (bycatch) / Fishing pressure	Ecosystem highly complex and variable / Dispersion of faculties regulation, management and control / Regulation focused on fisheries / Weakness of enforcement actions / Insufficient resources to enforcement	Deficit in HCLME knowledge, with a focus, comprehensive, ecosystem sustainability, including the assessment of their G&S
Deficit in the knowledge of the monetary valuation of the goods and services (G&S) HCLME	Deficit in the knowledge of G&S can provide HCLME / Lack of information to measure the contribution of HCLME / Deficit in supporting socioeconomic research HCLME	Lack of policy research and knowledge generation / Lack of a monitoring and evaluation system (M&ES) for HCLME	Deficit in the definiton of policies (transzonal and national), oriented at generating knowledge / Insufficient budget for research and monitoring

V. CONCLUSIONS AND RECOMMENDATIONS

The main conclusions of the study can be summarized as:

- In the last decade, Chile shows important changes in its production scenery, associated with the use of G&S's HCLME
- The problems observed in the 90s remain and have added new situations of concern, such as: the high sanitary and environmental impacts, the growth of new productive activities on the coast, and, not knowing the monetary value of the G&S that provides the HCLME
- Current information is inadequate and does not provide the value of the G&S socioeconomic provides HCLME
- There is a technical skill deficits associated with socioeconomic aspects, to support management and decision-making with an ecosystem and sustainable approach.
- Deficits are observed in the monitoring and evaluation of activities that impact the HCLME
- Important advances are observed (mainly in the area of regulation); however, given its recent application its results will be medium - long term

Finally, and even though it is recognized that Chile shows important progress aimed at achieving sustainable use of goods and services provided by the HCMLE, one of the main problems are based on a lack of knowledge, capacities, sustainability indicators and a system monitoring and evaluation of such indicators, particularly in the socio-economic.

Therefore, is recommended take actions in order to cover the deficit aspects mentioned, and carry out studies to advance in knowledge of the value of goods and services provided by the HCMLE.