

Transforming place, work and society: the salmon industry in Southern Chile

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ABSTRACT

The transformation of Southern Chile, through the installation of the salmon industry, is a predatory and contradictory process that is ongoing. In this article we explain how the process of the localization of production in the southern Chile, in a broad sense, was articulated as a strategy of labor precariousness and an ecosystem degradation, which ultimately dynamized its own crisis in 2009. Here we see the consequences and implications of this process from the perspective of the spatial division of labor and labor precariousness.

KEYWORDS

Salmon industry, Southern Chile, Labour precariousness, Ecosystem degradation

I Introduction

The relationship between the state, capital and investment was modified after the introduction of the military dictatorship in Chile in 1973, which meant political, social and economic changes, accompanied by a new neoliberal relationship between the state and the processes of capitalist accumulation and transnational investment. With the irruption of neoliberalism, the hegemony of private over state initiative was reestablished, a reverse from the previous epoch. The opening of markets and the movement of goods, services and capitals were encouraged, offsetting the protectionist trends that had

occurred in the international trade and capital markets between the 1930s and the 1970s. The hegemony of the neoliberal project was secured through a policy of economic shock and the application of global monetarism.¹

The original expression of the neoliberal economic model in Chile, installed during the military dictatorship (1973-1990), was a process of: a) industrial restructuring with a strong duality in the productive structure; b) a configuration of new social actors; c) a process of demographic changes and transformation of the territories and socio-productive spaces; d) installation of a model of primitive accumulation of capital that articulated a new economic geography; e) a strong and unregulated introduction of transnational capital and privatization of the public system; f) a structural heterogeneity and social, political, economic, ethnic and gender inequality, with serious consequences and impacts on matters relating to social welfare.

Despite the beginnings of the aquaculture sector in the nineteenth century, it was not until the twentieth century that it was industrially developed, with greater vigor and expansion.² The industrial aquaculture sector is marked by the action and imprint of changes and economic restructuring that occurred in the context of the implementation of the neoliberal economic model in Chile in the 1970s and 1980s, which is reflected in the dynamism of its growth and investment.

The localization of the process of production was marked by a change in the spatial division of labor worldwide.³ Shifts in the previous limits of capitalism and the transformation of the capitalist periphery formed part of the expansive leap of capitalist forces to break into the process of the "adaptation of space" and of *Landnahme* in various local, regional and national contexts by means of the power of transnational and financial capital arranged for accumulation.

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¹ GAMBINA, July. "El capitalismo entre la crisis del '70 y la actual. De la ofensiva del capital a la emergencia de la resistencia mundializada". Studies and Training Center of the Argentine Judicial Federation - CEFJA. *Gallo Rojo*. Madrid Spain, Madrid, 2003.

² DEL CAMPO, Basualdo. *El largo viaje de los salmones. Una crónica olvidada*. Santiago, Chile: Government of Chile, 2003.

³ MASSEY, Doreen. *Space, Place, and Gender*. Minneapolis: University of Minnesota Press, 1994; HARVEY, David. "The 'New' Imperialism: Accumulation by Dispossession". In: PANITCH, Leo and LEYS, Colin. eds. *The New Imperial Challenge*. London: Monthly Review Press, 2004.

⁴ *Landnahme* means first of all, expansion of capitalistic production methods internally and externally. It was a large-scale industry which finally provided a permanent basis for capitalist agriculture; it completed the separation of farming and rural domestic trades and "conquers for industrial capital the entire home market". DÖRRE, Klaus. "Social Class in the Process of Capitalism Landnahme. On the relevance of secondary exploitation". *Socialist Studies/Études socialistes*, vol. 6, no.2, 2010, pp. 43-74.

In our view, the evolution of the aquaculture industry may be seen as a process of “capital accumulation by dispossession”,⁵ which we understand as the continuation and proliferation of accumulation practices that Marx had designated as “primitive” or “original” during the rise of capitalism, and which are bound to a deep spatial, social, cultural and productive transformation, as dimensions of social reproduction.

In the following article, we present a review of the process of spatial transformation that accounts for the process of the emergence, evolution, transformation and depletion of the salmon industry, focusing on the productive, labor and organizational dimensions of the work process. In addition, we provide a relational synthesis of the spatial transformation of regions that were affected by investment in and operation of the salmon industry in Chile.

II. Transforming and adapting place

Capital managed to venture into the south of Chile, specifically in the Region de los Lagos (Annex 1), due to a number of comparative advantages in relation to the development of the global division of labor. The characteristics of the zone showed:

- a) Family agriculture, small-scale fishing and a traditional trade economy, with the limited presence of public institutions, a weak class of services and low wages;
- b) The absence of a working-class culture, an organized and unionized working class, as a potential source of labor disputes that would obstruct the logic of over-exploitation of labor, and;
- c) A pristine area with geographical conditions ideal for the realization of extensive exploitation and the introduction of farms and processing plants.

These factors, in reference to a set of spatial variations, are the ones that would mobilize capital in the localization process, because “capitalism is subject to the impulse to eliminate all spatial barriers, ‘annihilate space through time’ as Marx said, but it can only be done through the production of an adapted space”,⁶ and in the case of the Region de los Lagos, the conditions for the adaptation of a malleable space in a specific historical context were provided, facilitating the bases of accumulation.⁷

⁵ HARVEY. “The ‘New’ Imperialism: Accumulation by Dispossession”. *op.cit.*

⁶ HARVEY, David. *Espacios de Esperanza*. Madrid: Akal, 2007, p.77.

⁷ The geographical peculiarity of this region is really interesting, specifically in the province of Chiloé (Annex 2), which joins a group of islands that despite a concentration of production

This process was encouraged by the restructuring of a mixed, mono-exporting economy oriented to a small domestic market and a shift to an open economy based on the diversification of exploitation and the export of natural resources, which was only possible thanks to the initial boost of the state (the support of state organizations and a number of institutional mediations) that gave salmon farming the possibility to build up a process of accumulation by dispossession.⁸ This industrial restructuring was part of the logic of the dictatorial state and its strategy of neoliberalization, which encompassed the whole of social and spatial relations that were reflected in the dynamics of change and mutation of the place.

The massive intervention and sustained state support to the aquaculture industry, in general, and to salmon, in particular, was ideologically justified through two objectives:

- a) The idea of generating a greater control of fishery resources that were facing a process of over-exploitation, due to the high demand for consumption, and;
- b) The confidence to develop a productive activity that would prevent migration toward the north of the country, through the generation of an engine of regional development.

State intervention that promoted the localization of the process of production was characterized in different dimensions that markedly redefined social space:

- a) Deregulation of transnational investment in the country, accompanied by monetary incentives and subsidies to strengthen foreign investment and capital attraction, based on an extractive logic.
- b) Environmental deregulation and commodification of natural resources, which prompted a process of expansion of the geographical limits of production, previously established by capitalism through regulations for the protection of natural resources.
- c) Deregulation and labor flexibility, resulting in a structural weakening of labour.
- d) The creation of infrastructure, telecommunications and connectivity between the production areas, and its fragmented productive chain, and the places of export and marketing.

was also tied to the nerve centers of regional administration in Llanquihue Province and the city of Puerto Montt.

⁸ HARVEY, David. "The 'New' Imperialism: Accumulation by Dispossession". *op.cit.*

- e) The relations of exchange and free trade that facilitated chaining and technology and products transfer, helping the installation process of the sector, as a localized basis of a transnational chain of production.

This series of institutional structures mediated the "problematic relationship between the local and particular conditions and the universality of the achieved values in the world market ... dictating a pattern of an uneven geographical development through its concentration and capital flows",⁹ as a synthesis of the relationship between social classes, which would accelerate the dynamics of regional relations of productive chains, and would expand the geographical limits and colonization of territories in the sector.¹⁰

Finally, this process represented a leap from the quality of marginal commercial exploitation of aquaculture to a specifically capitalist system of production, in a brief period, which was articulated with national trends in the transformation of the relationship between the state and capital, as in the provisions and openings of a new pattern of flexible accumulation at the global level.

This new model of accumulation configured the anatomy of the salmon industry, which can be characterized by:

- a) *High transnationalization*: The participation of foreign capital in the industry is significant. It is estimated that by 2002 it reached 36% and could be higher. Francisco Pinto notes that, of 24 companies involved in salmon farming in 2007, 5 are of foreign capital (17% of all companies). However, they have a stake of around 38% in total production.¹¹
- b) *High concentration of production and ownership*: an indicator in this regard is the decrease in the number of companies since the mid-1990s. According to one of the studies consulted, companies involved in salmon farming went from about 100 to 50 and, subsequently, to 40.¹²
- c) *A process of mergers and takeovers*: Several cases show these trends in recent years,¹³ mainly capital mergers permitted by the new global regulations.

⁹ HARVEY. *Espacios de Esperanza. op.cit.*, p. 51

¹⁰ DÖRRE. "Social Class in the Process of Capitalism Landnahme". *op.cit.*

¹¹ PINTO, Francisco. *Salmonicultura chilena: entre el éxito comercial y la insustentabilidad*. Santiago: Fundación TERRAM, 2007. www.terram.cl

¹² DÍAZ, Estrella. *Transnacionalización de la industria salmonera. Aspectos socio-laborales de un proceso en curso*. Oxford: Oxfam, 2003, p.12. The background information provided by Díaz, for example, shows that, of all companies, 10 or 12 would have had control over 50% of exports in 2000. Another source shows that in 2007, companies involved in salmon farming had been reduced to 24. .

¹³ For example, in 2004 AquaChile purchased 100% of the ownership of Aguas Claras, formerly controlled by AntarFisch and White Fjord, 100% owned by Pesquera Camanchaca (controlled by Jose Fernandez and Jose Cifuentes). In 2005, Aqua Chile also acquired 60%

- d) *A segmented productive structure*: Three types of companies can be distinguished: first, the largest businesses that integrated the productive process such as transnational firms (Marine Harvest, Nutreco, Fjord Seafood, Cermaq) and national companies (Aqua Chile, Camanchaca and Multiexport). Second, there was a group of companies of national capital with intermediate levels of production belonging to multi-sectorial consortia (Aguas Claras, fjords, and Invertec). Finally, there were small and medium-sized enterprises of regional and national capital that have managed to find market niches or have incorporated greater added value to production (Salmopesnac, Trusal SA, Pacific Star, Ventisqueros).

This hierarchy of business actors shows a model that despite having being structurally segmented by the conditions of ownership and productive capacity was directly linked to the regional problems of coupling and chaining of industries and companies of the sector in an integrated process of exploitation and production at the regional level. Thereby it was directly interwoven with the impulse of capitalism to eliminate all spatial barriers and regulatory obstacles, through production of an adapted space.

If we reject the notion that “space” is simply "static" (or the still life of landscape), we can make an epistemological leap in understanding the transformations that have produced the process of industrialization and geographic reorganization in the development of the salmon industry, as part of a complex and global process of space production "by the dynamics of capital accumulation and class struggle".¹⁴

III. Maintaining place in global space-time

Territorialization and reterritorialization as contradictory processes of the spatial expression of power¹⁵ help us understand the problems posed by the salmon industry in an area such as southern Chile. A population, a territory and a socio-productive structure that remained in certain conditions of: a) Isolation in the process of the creation of salaried jobs and commodification of social relations; b) a low-skilled workforce with high rates of poverty; and

of the ownership of Robinson Crusoe and Salmon Chiloé. AquaChile, belonging to the Puchi family, was founded in 1999, as a result of an alliance with South Pacific Salmon, which is the largest national producer. Another more recent case, in 2012, is the acquisition valued at US\$100 million of Cultivos Marinos of Chiloé by the Norwegian Cermaq and its Chilean operator, Mainstream, leaving the multinational with 55% of its salmon business in Chile.

¹⁴ HARVEY. *Espacios de Esperanza*. op.cit., p. 77

¹⁵ DELEUZE, G., & GUATARRI, F. I. *Anti-Oedipus: capitalism and schizophrenia*. Minneapolis: University of Minnesota Press, 1983.

c) a suitable geographic component for the installation of an industry such as salmon which was boosted by the catalyst of the entry of capitalist relations of production promoted by the policies of the state and transnational capital, transforming the productive structure of the area, and subjecting it to an international chaining.¹⁶ This was constructed in accordance with the objective of the resolution of regional problems of unemployment and productive inactivity, but at the same time, weakened local territorial strategies and installed a new stage of the production of the space.

The migration of capital to the aquaculture industry in the south of Chile from industrial capitalist countries such as the USA, Canada, Norway and Japan was a process that was stimulated "by a gradual worsening of the conditions of valorization in the advanced capitalist societies, together with those existing at the periphery with seemingly endless supplies of low-wage, unorganized labor".¹⁷ This generated the foundations for a process of capital insertion in contexts where the strategy of profit gain was subject to the endogenous conditions of power relations that crossed the (potential) conformation of the territory in relation to an "exogenous space" mostly regulated and difficult to manipulate or accommodate by means of the powers of the business classes. This dialectic of "an inside" and "an outside" of the localization process shaped the subjective conditions of the location.

In this logic of spatial subjection, we must understand space as a set of multiple and heterogeneous social interactions that were carried out over a long time through a permanent construction,¹⁸ which was tied to a global chain of relations of correspondence and synchronization. These would accelerate a "violent destruction" as well as a "creative" construction that accompanied the process of the production of space in capitalism, a new social sphere of the production of life, identity, everyday life, society and culture, i.e. an implicit adaptation and dialectical tension between the relationship of the construction of space and place.

In this dialectic, "place" can be seen not only as a territory, but also as a lived and located experience in connection with new and foreign networks of flows, exchanges and influences as "global senses of place",¹⁹ where power relationships (conflict, cooperation, discipline, etc.) and social production are contingent and in development. The subjective becomes a complex and uneven process in which space is attached to the *subject-of-capital*, both in

¹⁶ HELEN, R. & RAMIREZ, P. "Bringing social institutions into global value chain analysis: the case of salmon farming in Chile". *Work, Employment & Society*. vol. 26, no.5, 2012, pp. 789-805.

¹⁷ HENDERSON, Jeffrey. *The Globalisation of High Technology Production*. New York & London: Routledge, 1991.

¹⁸ MASSEY, Doreen. *For space*. London; Thousand Oaks, Calif.: SAGE, 2005.

¹⁹ *Ibid.*

its movement and temporality, which involves defining an array of acceleration, adaptation and constant and permanent reformulation by means of the criteria for the sorting, intervention and destruction and creation of the space and the socio-temporal bases of the process of localization.

Worldwide, this trend is reproduced in the process of mergers of transnational capital and the transmission of supply lines and extension of production chains to local levels, toward the formation of productive clusters of a regional nature, where communities and territories constitute organs of the reproduction of a global model of spatial subjection and unequal division of labor that strengthens the abstract nature of capital while it invigorates concrete and contradictory bases of its power.

The logic of dispossession, which we believe operated dramatically in the case of the salmon industry in Chile, marked the transformation of space and the way it was chained or coupled to an international network of exchanges, along with having a profound impact on the redefinition of the socio-ecological environments, lifestyles, communities and local people.²⁰ From the installation of farms (land and water), to the establishment of processing plants, a logic of modernization and industrialization was brought to the once "peaceful" river towns, composed of indigenous (Huilliche) and peasant populations. These structural processes of transformation, absorption and productive domestication, boosted and mutated the constructions of collective, community and individual identity as part of a complex process of *glocalization*.²¹

The dismantling of "pre-existing" production ties, based on the subsistence economy of family and home, was subject to a transformation of the conditions of reproduction of the whole of life, mainly associated to the time-space cycle of agricultural activity, which constituted the central axis of the conditions for recognition and conformations of sense. This was reinforced by a successful coercive coupling of a certain hybrid and symbiotic transition

²⁰ Claude, Oporto, Ibanez, Brieva, Espinosa and Arqueros note that "communities of Chiloe have moved away from the land and the subsistence economy, and their habits are changing radically with the advent of farms and processing plants" since "with the rapid industrial development, the workforce of the island, which at first was almost the whole family, has been concentrating on youth, who have abandoned gradually work on their own land, in many cases selling it and working in different types of industries and commerce". *La ineficiencia de la salmonicultura en Chile. Aspectos sociales, económicos y ambientales*. Santiago: Terram, 2000, p. 43-44.

²¹ FLØYSAND, Arnt; BARTON, Jonathan R; ROMÁN, Álvaro. "La doble jerarquía del desarrollo económico y gobierno local en Chile: El caso de la salmonicultura y los municipios chilotes". *Eure*. vol. XXXVI, no. 108, 2010, pp. 123-148. In this study we can observe the process of tension between the global and the local through the fragile and limited role of local institutions in reference to spatial transformation trends.

between activities associated with harvesting and farming cycles that replicated its circular temporality in the production of salmon and aquaculture.²²

The changes introduced by the industry to the cultural, environmental and economic-productive dimensions dynamited the configuration of the "pre-existing" social structure in the constant "boost to accelerate time of rotation and movement of capital and, consequently, revolutionize the horizons of development"²³ of capitalism. This productive-export strategy boosted the Chilean salmon industry to second place in the world in production and volume of exports in 2005. This trend was reflected and was the result of the process of re-territorialization that took place in many areas of the periphery and underdeveloped south, following an intensive exploitation of natural and labor resources, the introduction of wage work to women as a mechanism of exploitation (with a redefinition of gender constructions), a transformation of the socio-productive historical activities in the region, a change in the morphology of the space, an apparatus of disciplining and controlling in the workplace and without and in the structure of property and the significance of the relationship to the land.

The extraordinary environmental, geographical and political conditions existing in Chile, were designed to encourage large investments and exports,²⁴ with the lowest production costs in the global industry. And one of the few areas where there could be a rapid geographical and productive expansion through a successful neo-extractive exporter model was the salmon industry in Chile, with a strong transnational component, and the lowest labour, environmental and health standards of this industry on a global level.²⁵

The productive process involved in the salmon industry is related to a series of stages, typical of the salmon life cycle. This process is carried out in different geographical areas and involves different companies, professionals

²² Concerning this phenomenon Cecilia Montero notes that "farming platforms in lakes and inland seas introduced into the sea, lakes and seashores a typical facet of agriculture: sowing, fattening cycles, crops. It was intensified the traffic by land and sea between hatcheries, farms, processing plants and ports."

²³ HARVEY. *Espacios de Esperanza. op.cit.*, p. 67.

²⁴ Between 1970 and 1989, the number of exported products rose from 1200 to 1490 and in 1990-2002 rose from 2.300 to 3.750. Regarding to the opening of new markets, we find that the number of destination countries of Chilean exports increased from 31 in 1970 to over 150 in 2002.

²⁵ PINTO, Francisco; KREMERMAN, Marco; PIZARRO, Rodrigo. *Cultivando pobreza. Condiciones laborales en la salmonicultura*. Santiago: Terram Foundation, 2005. MELILLANCA, Patrick & DIAZ, Isabel. *Radiografía de la Industria del Salmón en Chile bajo la mirada de estándares de RSE*. Puerto Montt: Ecoceanos, 2007. www.ecoceanos.cl

and workers regionally and internationally. The chaining in this level makes clear three central stages in the so-called salmon cluster:

Phase A: the first corresponds to the hatchery, where the eggs, fry and smolt are produced;

Phase B: In the second, there are the farms that receive the goods (or inputs) of the first stage and proceed to farming, weight gaining and harvesting, and;

Phase C: Finally, there are processing plants that receive the raw material from the second stage (salmon and trout) and add value to the product from different treatments (filleted, smoked, frozen).

The chaining of these phases tends to be linked to international processes and cycles. According to Andrade, "at the global level, we can note the presence of a salmon industry based on the interdependence between companies and local suppliers with transnational companies that are 'global players'. Around the world, the former tend to be reduced numerically, while the second increase their presence."²⁶ Thus, the chain of processes exhibits a logic of interdependencies and a planetary relationship of production, which culminates in holding a space strategically located and selected for its participation in a global, uneven and spatial division of work.

While the industry since its inception has been linked to the bonds of dependency and global exchange, this has been changing gradually, moving to an integrated process of localization and regionalization of production. Due to the acquisition of eggs, which are genetically generated or selected, the industry has been tied to the U.S., Japan, Italy and Norway, as these are the main suppliers and have an extensive history in the scenario of global production as well as experience as the basis of the transnational companies operating in the area. The eggs brought from the headquarters, where were developed through biogenetic research & development, are reared in hatcheries (phase A) and farms (phase B) installed in the southern region of Chile, which was accompanied by transport processes and infrastructure in order to facilitate the mobilization and exchange of goods on a transoceanic level.

Within the context of the acceleration of the global processes of flexible accumulation, the 1980s marked the beginning of the actual development of the Chilean salmon industry, with the multiplication of farms (Phase B), which can be perceived by comparing production figures: at the beginning of the 1980s production reached 80 tons; in 1984 totaled 500 tons; in 1988, 5,500

²⁶ ANDRADE, Estrella Díaz. *Transnacionalización de la industria salmonera. Aspectos socio-laborales de un proceso en curso*. Santiago: Hexagram e Oxfam, 2003, p.12.

tons and in 1997 reached 247,970 tons.²⁷ The size of the production and the profit strategy in the sector created the need to develop Phase C of the production process in higher proportions since the generation and culmination of the value chain, as a *maquiladora*-type process, promoted regional correlation and a more integrated spatial model. This became a strategy of the dissolution of the planetary space of production and a concentration of place as the focus of integration of the overall profitability matrix. Sixty processing plants (2008) were constructed by 2008, which were distributed in 18 communities in the Los Lagos region, and became an important source of employment. In this region, 78% of total Chilean salmon production was concentrated.

Production was integrally linked to changes in the global demand of the food industry such as the systemic pressure in the countries where capital investment originated to generate products in a higher quantity and quality, focusing the industry on a process of acceleration and intensification in the exploitation of geographical, environmental and human resources. The deep export logic of the productive model of the salmon industry managed to position it for the sale of its products at an international level, consolidating the U.S. as its largest buyer, a phenomenon which would be exacerbated by the elimination of tariff barriers through the signing of a free trade agreement between the two countries in 2003.²⁸

Technological efficiency and technical devices were mobilized through studies to determine the economic and technical feasibility of the confined farming of salmon species, which provoked a process of the adaptation of the techniques used in the United States and Scandinavian countries to accelerate the process of Phase B (still dependent on Phase A), as part of a spatial division of labor. The limited transmission of this "know-how" created new mechanisms of international dependence and set up a new modeling device of the space. At the same time, the groundwork for the development of Phase A in the same regional context began, opening the possibility of an integrated cluster at the regional level, generating a new disciplinary framework of emerging institutions (labor courts, fish secretariats, etc.) and of the scientific and technological capabilities related to the productive process.²⁹

²⁷ This data includes the salmon species: Pacific, Atlantic, King, turbot, rainbow and brown trout.

²⁸ In 2005, total exports were 383,700 tons, reaching a value of U.S. \$1.721 billion. This figure exceeds the values recorded at the beginning of the 1990s. For example, in 1991, there was US\$ 159 million in shipments. In 2010, other estimations were made from 2005 data which placed the value of exports of the sector in this year at around U.S. \$ 2-3 billion. SalmonChile, Salmon Economic Report. Santiago. www.salmonchile.cl, 2005.

²⁹ Regional Development Institute, Working Paper. "Challenges and Capacities for Science, Technology and Innovation in Aquaculture in Chile". *Emerging Scientific and Technological*

On the other hand, Phase C formed the basis of an accelerated industrialization, a transformation of working conditions, a more “classic” working-class and a new source of the generation and acceleration of the conditions of integration into the regional chain of production.

The main engine of development of the sector has been investment in physical capital, the provision of an army of non-salaried workers (with the potential to be salaried) and the availability of natural resources, guaranteed by the state and the policy of aquaculture concessions to the industry.³⁰ All of this was to the detriment of the ecosystem and the development of endogenous technological advances.³¹ There is a direct connection here with the problems that the sector has had in continuing its expansionary logic and growth since 2008 in relation to the world productive context, since its strategy of profit generation obviated the requirement of establishing a "sustainable" relationship with the environment through the adoption of "green technologies" and agreements of "clean production", as well as the refusal to improve its international competitiveness through technological innovation.³² In this regard, it is possible to indicate that the low productivity of work is generally caused by a low level of physical capital per worker, with little effectiveness or introduction of technological advances, but also with low levels of skilled occupations, and lack of skilled workers in Research & Development on the part of the firms.³³ This resulted in outsourcing to universities or independent research centers that were set up on the periphery of the industry as providers of services.

Therefore the subjection of space, as part of the strategy of expansion and growth of the sector, is reflected in the creation of a new "hard-core" concentration and governance of the Chilean industrial entrepreneurial class, which through large increases in profit in two decades and by means of its acquired economic power, would design a new plan of expansion of the

Platforms Sectors with growth potential in Chile. National Innovation Council (CNIC), Santiago, 2009.

³⁰ In July 2005, the Chamber of Deputies released a report on the companies that were asking for concessions in aquaculture in the south of Chile. The multinational Marine Harvest and Pescanova possesses the greatest marine-surface property in Chile through aquaculture concessions, and it continues to request the largest number of these permissions (Annex 3).

³¹ Regional Development Institute, “Challenges and Capacities for Science, Technology and Innovation in Aquaculture in Chile”. *Ibid*.

³² FERNANDEZ, Jorge & BRIONES, Luis. “Estudio de la Cadena Productiva del Salmón, a través de un Análisis Estratégico de Costos”. *Capic Review*, vol.3, 2005, 37p.

³³ Among the main sectors that sell fishing supplies, we find the production of animal food (which is basic in aquaculture, compared to extractive fishing) and business service activities (which includes technical consultancy, computer, accounting and management and advertising services, etc.).

industry, and to act as a collective actor in the redefinition of policies and institutions in matters of environmental and labour regulation and control.

This phenomenon of the direct lack of protection of the environment resulted in the comprehensive deregulation of the relationship between capital-labor and capital-nature, which is loaded with an important structural asymmetry. First, the lack of protection, unemployment and vulnerability, which makes work a deeply disciplining practice and second, imposition of a model of indiscriminate growth that enhances the use of water, space, geography and invigorates (and finally detonates) an ecological crisis.

Transforming the work. Localization and precariousness

The emergence of an aquaculture industrial economic activity in a territory such as the province of Chiloé (Annex 4) which did not have an industrial working tradition and a "wage culture"³⁴, is an historical fact having a technological, economic, sociological and cultural interest for the processes of primitive accumulation of capital and dispossession, such as those shown in the homologous trend of the establishment of the neoliberal model in all Latin America.³⁵ This phenomenon completely transformed the socio-productive matrix of the region and constituted one of the strategic bases of the orientation of the localization of production in the area.

Additionally, the localization of the industry involved the positioning and negotiation of the installation of the conditions of production and the relationships and practices between social classes (dominated and dominant), which is captured and synthesized in the process of labor and social insecurity. Its expansion, as a diversification of the phenomena of precarious work is directly related to models of organization and regulation of work. This included an institutional framework regarding public policies for employment, and in flexible labor relations systems that seem to expand worldwide, as parts of the consolidation of the diversification of components of the profit strategy and the dynamics of the accumulation of spatial subjection and localization of production of a capitalist class interested in restoring its power bases.³⁶

³⁴ REBOLLEDO, Loreto. "Resistencia y cambios identitarios en trabajadores/as del salmón en Quellón". *Polis*. vol.31, 2012. <http://polis.revues.org/3714>; DOI: 10.4000/polis.3714

³⁵ ARCEO, Enrique. "El impacto de la globalización en la periferia y las nuevas y viejas formas de la dependencia en América Latina". *Cuadernos del Cendes*, vol. 22, no. 60, 2005, pp. 25-61.

³⁶ HARVEY. *Breve Historia del Neoliberalismo*. *op.cit.*

The emergence of the industry in south of Chile, mainly in the region of Los Lagos, has caused dramatic changes in the labor market, transforming the geography and traditional productive structure of the area, because the presence of the industrial complex has become a pole of attraction for a workforce with low qualifications in this and other regions of the south, encouraging migration processes and (sub) proletarianization³⁷, a floating workforce in a place that was originally an important reservoir of an unskilled labor force.

In 2000, the farms alone provided work for nearly 23,000 people (15,000 in direct jobs and 8,000 in indirect jobs).³⁸ The TERRAM Foundation, a non-governmental organization that works on the issue of sustainable development and public policy, indicates that between 1993 and 2002, direct and indirect jobs in the industry grew by more than 4 times, reaching 45,000 (of which 70% would be direct). By 2006, the figure reached 53,000 jobs with an unemployment rate of 4% at the regional level in the region of Los Lagos, and 4.3% in the Aysen region (Appendix 5).

The characteristics of employment in the sector are related to climatic and seasonal factors as well as cost-cutting strategies, streamlining, organization and the productive adaptation of enterprises to the systemic imperatives of accelerated competition in the global economy. This is how phenomena such as the possibility of employment, more extensive working hours, lower and flexible establishment of wages (Appendix 6), high rates of accidents and mortality, intensification of the rhythms of work and a high infraction of current labor legislation (in comparison with the industry in general at the national level) were reproduced. It thus constituted a strong core of labor precariousness, which is expressed in the instability, insecurity and impoverishment of workers and their working conditions.

Since its inception, the economic and productive expansion of the industry did not imply a strategy of the generation of high-quality jobs or employability and refinement. On the contrary, the focus of local growth was based on the imposition of precarious labour conditions on a population with the potential to be salaried, and to encourage a sustained and intensified

³⁷ ARAVENA, Antonio. "La industria del salmón en Chile: ¿crecimiento social o explotación laboral? *Alternativa*. no. 24. ICAL, Alejandro Lipschutz Sciences Institute: Santiago, Chile, 2006, pp.8-35.

³⁸ CLAUDE, Marcel; PORTO, Jorge; IBÁÑEZ, Ciro; BRIEVA, Lila; ESPINOSA, Consuelo; ARCHERS, Marcela. *La ineficiencia de la salmonicultura en Chile. Aspectos sociales, económicos y ambientales*. Santiago: Terram, 2000. Added to this is an informal sector, which is not included in the official figures, consisting of some 200 farms and freshwater artisanal hatcheries and seawater salmon farms that were operating illegally or with temporary authorizations.

process of exploitation of a low-skilled workforce. This situation is captured when contrasted with the evolution of production and the relationship between labor infractions in the sector,³⁹ added to the difficult ergonomic conditions of work, the constant logic of persecution and monitoring of labour union activity, the intensification of workdays, and the policy of the state in promoting recruitment through "social dumping".⁴⁰

The main features of labour infractions in this sector were: a) labour informality; b) Failure to comply with hygiene and safety rules (high levels of moisture and low temperatures, accident statistics, non-delivery of implements for personal protection, among others); c) lack of safe conditions for working under the sea; d) failure to comply with maternity protection rules; and e) anti-union practices.⁴¹

Moreover, working hours tend to exceed 8 hours per day and can be as high as 10 or 12 hours. Then we may add the time for transfer from homes to workplaces, and vice versa, which often may be one or two hours. Workers of this industry are in the group of employees who work most hours nationwide: one of every five workers (22.8%) works more than 50 hours a week.⁴² It is thus clear that the length of the work day (extensions, breaks, etc.) assumes a strategic dimension for the creation of value in the sector, and thus a regime of absolute extraction of surplus value is installed, which at the same time generates new forms of coercion, control and consent in the working relationship.

On the other hand, there were different segments of workers who were organized to conform to flexible models of production: a) casual workers constituted a functional group for the various productive needs of the companies and, therefore, its presence is often associated with periods of peak production; b) subcontracting: the outsourcing trend in recent years has meant that workers are at great disadvantage in defining or negotiating their terms and conditions of employment,⁴³; and c) women: processing plants are

³⁹ During the years 2003-2006, a total of 953 scheduled audits were made by the Labour Inspectorate of the Region of Lagos, of which 540 ended with a fine, equivalent to 57,2% of the audits. MELILLANCA & DÍAZ. *Radiografía de la Industria del Salmón en Chile...op.cit.*

⁴⁰ Dumping is materialized through the subsidy that the Chilean state brings to salmon companies because it hires workers in a region of the country considered an "end zone."

⁴¹ DÍAZ. *Transnacionalización de la industria salmonera. Aspectos socio-laborales de un proceso en curso. op.cit.*

⁴² PINTO; KREMERMAN; PIZARRO. *Cultivando pobreza. Condiciones laborales en la salmonicultura. op.cit.*

⁴³ There is a distinction in terms of wages and contracts between plant workers and the subcontracted. While the former can achieve in "leading" companies of the sector, wages of close to 180,000 pesos (U.S. \$ 260), while current studies show that the salaries of outsourced workers are lower than those of regular employees and are located near the minimum wage.

composed of a 70% female workforce, which speaks to the restructuring of relationships and gender roles, kinship and family in relation to the area of production, together with a subordinated chaining of the "family" as base unit of a previous matrix of production to the core of capitalist relations of production.⁴⁴

Violation of the fragile legislation of 1979 which resulted in reduced labour rights to workers and that was functional to the activity of the company, was an important part of the strategy of the expansion of the sector, with the consequent weakening of workers' organizations and their tools and forms of protest and resistance against business and managerial policies. It is clear that this situation was also marked by the productive transformation and innovation in the sector that atomized and fragmented workspaces and interaction of workers, through of strategies of subcontracting, process automation and outsourcing of production. Thus, flexibility, labour precariousness and the mechanisms of over-exploitation of labour in the processes of productive localization and spatial subjection, as in the case of the salmon industry in Chile, were constituted in the dynamic axes of this new pattern of accumulation.

Conclusions: limits of the transformation

The paradox of the localization process in the salmon industry gave form to a new working class, which began, with difficulty, to impose criteria for collective bargaining and the creation of labour unions as a way to earn higher wages and redefine working conditions. As we know, labour unions have a relative importance in the formation of labour relations, because they are partners against state institutions and companies.

Although union organizations in this sector were formed at different levels and in a hierarchy, and were mostly concentrated in the capital of the region (Puerto Montt with 52 labor unions), it was observed that insufficient cohesion was marshalled to match forces against the corporate actor and to enforce, at all times, labour rights that were instituted in the Labour Code, especially the Subcontracting Act of 2007, and at the same time, move forward in a redefinition of the architecture of the legal framework.

⁴⁴ BRAVO, M. *La cultura chilota y su expresión territorial en el contexto de la globalización de la economía*. Tesis título profesional de Geógrafo. Santiago: Escuela de Geografía, Facultad de Arquitectura y Urbanismo, Universidad de Chile, Chile, 2004.

Unfortunately, the union movement focused on the larger industries,⁴⁵ and was accompanied by a crisis of the sector, which was both linked to this new scenario of labour relations (where there are already organizations of workers willing to contest the distribution of profits), and to an ecological crisis in the area, due to the introduction of the ISA virus at the end of 2007,⁴⁶ with an overall loss of investments, coupled with the destruction of farms, limitation of international demand, financial debts and bank losses, and the almost total dismantling of the sector.

It is clear that to explain industrial displacement in terms of a "work factor" measured only on the basis of wages and unionization rates has not been entirely satisfactory. This is due to the fact that other complex phenomena also operated and to the complexity of relationships in the process of the localization of production, which we have tried to outline in this text, and which spatially links the relationship between state, capital, labor, social classes and nature, as joint links in the chain of an uneven global-spatial division of work and production.

In this way, localization is posed as a problematic focus for the production of space and the expansion of the limits of capitalism, which generates new questions about the possibilities and the mechanisms of capital *realization*, since the crisis in this industry prompted changes in the matrix and in the productive models, as well as prompting new geographical expansion of capital to the regions of Aysen and Magallanes, in order to maintain growth rates and production volumes.

Overproduction generated serious multi-systemic consequences that must be clearly understood from a regulatory perspective that accounts for the adoption of an indiscriminate and predatory process in social space, which endangered levels of bio-safety and greater powers to environmental and labor institutions, and to civil society in general.

The process of localization, accumulation and insecurity that we have described here as part of the spatial division of work, exhibits new challenges for the action and coordination of the working class in the twenty-first century. The features of labour relationships and fragmentation of work in the area, the creation of a new core of the industrial working class, and changes in productive regulation, produces a new challenge for the construction of

⁴⁵ SALINAS, Leonardo. "Transnational Corporations and the Development of Labour Movements: The case of the salmon industry workers in Puerto Montt and Chiloé. Lund University, Faculty of Social Sciences. Master of Science in Global Studies. England, 2011.

⁴⁶ OECD, An Appraisal of the Chilean Fisheries sector. [Online] 2009, http://books.google.de/books?id=LmAS79EdtWEC&pg=PA99&dq=virus+ISA+chile&hl=es&sa=X&ei=i376UK_6B4rVtAaGs4GgAw&ved=0CC4Q6AEwAA#v=onepage&q=virus%20ISA%20chile&f=false

workers' organizations and the development of the labour movement on a planetary production scale with a transnational and international strategic logic.

