

Migration and Mobility in Shrimp Farming in Tropical and Subtropical Coastal Zone of Eastern Pacific: Concepts

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Abstract: The aim of this work is to show the relationship and basic concepts of the labor migration and mobility process in shrimp farms in the coastal zone of the tropical and sub-tropical eastern Pacific. In recent years in the region, shrimp farming in the coastal zone has developed rapidly, so most studies have focused on technical and environmental aspects. However, to achieve a local and regional development of the Latin American countries where this cultivation takes place, it is necessary to consider in more detail the study of the social, economic, development and welfare aspects of the actors of this activity. Aspects of labor migration, labor mobility, migration in the coastal zone, aquaculture migration, employment in aquaculture, governance of employment and migration in aquaculture shrimp farms were considered. Labor mobility has been very dynamic in the region as it is strongly linked to the times of shrimp stocking and harvesting, which has resulted in a strong turnover of personnel on farms. However, it is necessary to promote the strengths of both fishing and aquaculture communities as the territory, thus promoting equal opportunities for the individual and for society itself.

Key Word: Migration; Mobility; Social; Environment; Aquaculture; Employment

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I. INTRODUCTION

The most productive primary activity in the coastal zone of the tropical and subtropical Eastern Pacific in recent decades has been the development of farming white shrimp *Penaeus vannamei*¹. This has been caused by the high demand for shrimp in the domestic and international market combined with a decline in catches in estuaries and offshore². In recent decades it has been learned in the region that sustainable development of shrimp farming can be achieved by reducing unnecessary damage to coastal aquatic ecosystems and revaluing coastal and mangrove wetlands from an environmental, social and economic point of view, since they are complex ecosystems that support multiple uses by a variety of users². In general, residents in coastal communities are poor because of lack of access to alternative employment opportunities and federal, state or municipal institutions allow elites to have most of the benefits³. Shrimp farms offer limited employment for them and most are hired as unskilled workers and guards. Therefore, wages are low which shows the opportunity cost of labor in the area of the Eastern Pacific coast⁴. The environmental, social and economic aspects show us that shrimp farming has caused, along with other factors, a structural change, marginalization of the local population and a skewed distribution of development benefits⁵. In recent years it has been determined that shrimp farming in the coastal zone of the Eastern Pacific plays an important role in the region, so it is required not only to study technical and financial feasibility aspects, but also social and development aspects⁶ such as migration among others, to generate public policies that cover all aspects of development in the study area. The aim of this paper is to give some concepts and perspectives of the work mobility in shrimp farming in tropical and subtropical coastal zone of Eastern Pacific.

II. LABOR MIGRATION

Migration and labor mobility are phenomena that have been carried out for a long time and throughout the world, the concept as such of migration encompasses a series of factors that are involved in either the place of origin or destination such as those of attraction and rejection (push and pull). According to some migratory

theories, we can establish that both migration and labor mobility go hand in hand. Migration is a phenomenon that is determined by the social, cultural and economic structure of a region or country but, at the same time, affects these structures, there are different types of migration according to the rural or urban quality of the areas of origin and destination (rural-rural, rural-urban, urban-urban, urban-rural), according to the type of administrative division, the unit that migrates, or the relationship of the place of destination with the migrant⁷.

Migration is considered to be a reflection of the socioeconomic change the migrant seeks, since, in most cases, he decides to migrate to improve living conditions. Thus, the individual or the family migrates to increase their human capital, that is, to increase their ability to generate a flow of income during their life as a result of this decision. In other words, an individual changes his place of residence if he considers that the benefits will exceed the costs⁸.

III. LABOR MOBILITY

Labor mobility is a type of migration which forces human beings to move. Mobility can be caused by: a) Unemployment and in the labor market, b) Demography, c) Geographically as a determinant in territorial planning and d) Ecologically due to the impact it has on the environment⁹. Migration can involve several forms of mobility, depending on the particular interest of the analysis¹⁰. Labor mobility can be presented in two modalities: horizontal and vertical. Horizontal mobility occurs when the worker changes jobs and goes on to perform another activity without a sectoral change, in the sense that the worker remains in an equal or similar position. On the other hand, vertical mobility is one that implies a change of hierarchy in the job position or position, which can occur within the same sector or simultaneously with a sector transfer¹¹.

In relation to the characteristics and frequency of mobility, this can be classified as circular mobility, that is, round trip, which would include those who move daily (daily commuters), weekly or monthly, irregularly (vari -mobile) or temporarily (seasonal). Another type of mobility is non-circular, such as: movers (recent relocators), emigrants (migrants), delegates abroad (foreign delegates) or nomadic workers (job nomads). These types of mobility can be combined with each other, resulting in multimobilities and multi-mobilities⁹.

IV. MIGRATION IN COASTAL ZONE

Coastal ecosystems are of particular interest because a growing proportion of the world's population lives within 50 kilometers of a coast¹². These ecosystems are among the richest and most diverse in the world, and provide important global functions for marine ecosystems and atmospheric composition. Also, coastal ecosystems have proven more difficult to manage through privatization or market relationships¹³. The increasing concentration of population in coastal areas can be attributed to immigration and urbanization rather than natural population growth¹⁴. There has been little empirical research or theoretical motivation to examine ways in which migration patterns can differentially affect common property resource institutions in a wide range of ecosystems, including coastal ecosystems¹³. The current search for sustainable regional development, under the new conditions marked by globalization processes, prompts us to consider the new conditions and characteristics of migrations and urbanizations, as well as consider their relevance in the new forms of organization and articulation of social spaces, involving economic growth, ecosystem control and political-social management¹⁵. In the case of coastal cities, the relationship between migration and the dynamics of labor markets stands out. The relationship between labor dynamics according to specific sectors has generated feminized or masculinized migratory flows, which affect coastal urbanization¹⁵.

V. MIGRATION AQUACULTURE

Aquaculture activity in coastal areas has generated a labor market, with opportunities to improve living standards. In general, world aquaculture production, including shrimp farms, is estimated to provide a direct source of income to 16.7 million people and indirectly to another 6.8 million¹⁶. Aquaculture migrant workers may be vulnerable to labor exploitation, forced labor, trafficking, risks relating to safety and health at work, limited access to legal advice and justice¹⁷. Therefore, it is necessary to improve working conditions and the hiring of migrant aquaculture workers through written labor agreements, periodic payments, legal advice, social security, repatriation services, training activities and the right to organize¹⁷.

VI. AQUACULTURE EMPLOYMENT

The majority of aquaculture workers are in the range of 20 to 39 years in the study area, most are in isolated rural areas that usually lack employment opportunities for young people; By providing employment, the sector allows young people to remain, which reduces rural-urban migration. Therefore, it reinforces the viability of rural coastal communities¹. It has been found that a high percentage of shrimp farm workers in Latin America are peons and work at a technical level and supervision predominates. In addition, the predominance of aquaculture work is male. Regarding gender distribution, it has been found that administration and sales have a

high proportion of women (two thirds) compared to production. Processing is often an occupation of women. Most positions of responsibility in aquaculture are the domain of men. Managers, supervisors and technicians tend to be men, although in the case studies in general there was more equality in technical assistance¹⁸. Child labor is considered dangerous, affects health and interferes with education. When the work is to obtain some remuneration or as part-time in a family business (farm), it is not classified as child labor; it can actually be educational and positive.

VII. GOVERNANCE OF EMPLOYMENT IN AQUACULTURE

Governance is a relatively new term that encompasses the relationship between government and community, in this case, aquaculture¹⁸. Modern aquaculture governance must reconcile ecological and human well-being so that the industry is sustainable over time. Without effective government, there will be a bad allocation of resources, stagnation of the industry, irreversible environmental damage and social unrest. For there to be good governance, there must be a very close link that ensures the order and growth of the aquaculture sector¹⁸. In general, it has been found that in Latin America more than 90 percent of research in aquaculture has been biological or technical, with only 9 percent dedicated to socio-economic aspects¹⁹, such as migration and mobility in coastal areas and shrimp farming. For the governance of aquaculture work, there are four general principles which are¹⁹: a). Accountability, refers to the way in which officials and companies are responsible for activities and actions. b). Efficiency and efficiency, is the way in which labor regulations are carried out. c). Equity is the principle that establishes equality and fair distribution of remuneration regardless of gender and d). Predictability refers to the application of laws and regulations in a fair and solid manner for all actors of the shrimp farming activity. The employment of aquaculture workers must be equitable and not exploitative so that they have a better well-being²⁰. The values of principles should guide aquaculture activities so that farmers with a strong corporate social responsibility induce a socially and environmentally sustainable behavior in shrimp farming.

VIII. MIGRATION SHRIMP FARMING

The study of migration and mobility in shrimp farming has little background²¹. Currently, one of the means by which employment is promoted and obtained are social networks or through the direct relationship of a family member who already works in shrimp farming. As a result, each farm includes several groups of workers from the same geographical area or from the same kinship group, which confirms the most widely recognized importance of social capital in migration and mobility patterns^{22,23}.

IX. CONCLUSION

Shrimp farming in the region is still growing, which has caused a local economic development that generates a greater socio-economic and environmental balance, translated into improving the working conditions of migrants, well-being, quality of life and the sustainability of the environment. Labor mobility has been very dynamic in the region as it is strongly linked to the times of shrimp stocking and harvesting, which has resulted in a strong turnover of personnel on farms (some workers have worked in other farms in the same areas). Socially, there should be equal work opportunities, access to those opportunities, fair working conditions and social protection and inclusion; so that workers could have job and economic stability. The regional impact of the shrimp sector could be thought to be mostly in the economic field, however, several aspects that have also had repercussions as productive, market, financial, infrastructure, environmental and social aspects must be considered. However, it is necessary to promote the strengths of both fishing and aquaculture communities as the territory, thus promoting equal opportunities for the individual and for society itself.

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