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ECONOMIC AND SOCIAL EFFECTS CAUSED BY THE NAFTA IN THE FISHERIES OF TUNA IN BAJA CALIFORNIA SUR, MEXICO*

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ABSTRACT

Even though the international trade system was originally developed without considering an environmental protection framework, efforts are being made to join environmental and political aims. In Mexico, Baja California Sur (BCS) is the most arid state and with more coastline than any other state in the country (2,200 km). The purpose of this work was to identify economic and social impacts caused, up until the present, by the North American Free

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Trade Agreement (NAFTA) in BCS Yellowfin Tuna (*Thunnus albacares*) fisheries. We analyzed, since 1980 to 2000, the main tuna fisheries data for: growth of production, increment of quantities and value of export products, number and age of fishing vessels devoted to the tuna fishery, increase of investments in the tuna fishery sector and the generation of jobs. We found that in the short term and mid term, the North American Free Trade Agreement (NAFTA) has had no significant effects on the economic and social variables studied in the tuna fishery. In BCS tuna fishery industry must not expect significant changes, neither positive nor negative, with a free trade agreement at this level of integration.

Key words: NAFTA, effects, tuna fishery, Baja California Sur.

EFFECTOS ECONÓMICOS Y SOCIALES DEL TLCAN EN LA PESCA DEL ATÚN EN BAJA CALIFORNIA SUR, MÉXICO RESUMEN

No obstante que el sistema internacional de comercio se desarrolló sin tomar en consideración un marco de protección ambiental, se han hecho esfuerzos para hacer coincidir objetivos ambientales y políticos. En México, Baja California Sur (BCS) es el estado más árido con la línea costera más extensa en el país (2,200 km). El objetivo de este trabajo fue identificar los impactos económicos y sociales que el Tratado de Libre Comercio para América del Norte (TLCAN) ha provocado en la pesca del atún aleta amarilla (*thunnus albacares*), en BCS. Analizamos la información más relevante para la pesca del atún en el periodo 1980-2000: crecimiento de la producción, incremento en la cantidad y valor de los productos exportados, número y antigüedad de las embarcaciones dedicadas a la captura del atún, incremento de la inversión en el sector pesquero dedicado al atún y la generación de empleos. Encontramos que en el corto y mediano plazo, el TLCAN no ha tenido efectos significativos sobre las variables económicas y sociales estudiadas para la pesca del atún. No es de esperar que la industria pesquera que participa en la captura del atún experimente cambios, positivos o negativos, en el punto de integración actual en que se encuentra el TLCAN.

Palabras clave: TLCAN, efectos, pesca del atún, Baja California Sur.

EFFETS ÉCONOMIQUES ET SOCIAUX CAUSÉS PAR L'ALENA DANS LES PÊCHERIES DE THON EN BASSE CALIFORNIE DU SUD, MEXIQUE RÉSUMÉ

Bien que le système de commerce international fut originellement développé sans considérer une structure de protection de l'environnement, des

efforts sont en train de se faire pour joindre les buts environnementaux et politiques. Au Mexique, la Baja California Sur* (B.C.S.) est l'état le plus aride et avec plus de côtes que n'importe quel autre dans le pays (2200 km). Le propos de ce travail était d'identifier les impacts économiques et sociaux causés, jusqu'à présent, par l'Accord de Libre Echange Nord-Américain (ALENA) dans les pêcheries de thon à aileron jaune (*Thunnus albacares*) de B.C.S. Nous avons analysé, depuis 1980 à 2000, les données des principales pêcheries de thon pour: Croissance de production, augmentation des quantités et valeur des produits d'exportation, nombre et âge de vaisseaux de pêche voués à la pêche du thon, augmentation des investissements dans le secteur de la pêche du thon et la génération d'emplois. Nous avons trouvé qu'à court et moyen terme, l'ALENA n'a pas eu d'effets significatifs sur les variables économiques et sociales étudiées dans la pêche du thon. En B.C.S. l'industrie de la pêche du thon ne doit pas s'attendre à des changements significatifs, ni positifs, ni négatifs, avec un accord de libre échange à ce niveau d'intégration.

Mots clé: ALENA, effets, pêche du thon, Baja California Sur.

INTRODUCTION

Even though the international trade system was originally developed without considering an environmental protection framework, efforts are being made to join environmental and political aims (Orrego, 1995:28-32). Committed to this task are international organizations, such as the *World Trade Organization* (WTO), and agreements like the NAFTA (SECOFI, 1993:491) and the international conventions on the environment. The purpose of this work was to identify the possible, economic and social impacts caused by NAFTA in Baja California Sur, a state of northwestern Mexico, in the yellowfin tuna fishery. The mexican northwest (Baja California Sur, Baja California, Sonora y Sinaloa) is inside the marine area with one of the highest biological productivity in North America. Northwestern Mexico is one of the four most important fishing regions in the world (Casas & Ponce, 1996:1-14). With the opening of commerce and a tendency toward the globalization of economic and social systems, it is important to carry out studies on the behavior of the natural systems inside these new systems of integration (Hauwermeiren, 1994:65). The item of exportation of yellowfin tuna is 0302.302.00, staging category "D" and base rate free. This item show that yellowfin tuna it was free of tariff before the Free Trade Agreement (SECOFI, 1997:12-16).

MATERIALS AND METHODS

The study area was Baja California Sur (BCS), a state of Mexico, located between the 28°00' and 22°52' N and 109°25' and 115°05' W (fig.1). The utilized information was obtained mainly from the reports of the National Institute of Statistical, Geography and Computer Science of Mexico (INEGI), and the Secretary of Environment, Natural Resources and Fish (SEMARNAP), for one of the main fisheries of the state: yellowfin tuna. The yellowfin tuna is an oceanic species (FAO,1995:1540). In the coast of BCS we identified the main areas of tuna fishing (Ortega-García, *et al*, 1996:358-388; Gómez-Muñoz, *et al*, 1990:47-54) as well as the location (figure 2) of the main processing plants: *Productos Pesqueros de Bahía Tortugas* (B. Tortugas), *Productos Pesqueros de Matancitas* (Pto. Adolfo López Mateos), *Conservera San Carlos* (Pto. San Carlos) and *Productos Pesqueros de La Paz* (La Paz).

For the tuna fishery, we obtained the following data from 1980 to 2000 annual production variation, annual variation in value of export products, annual number and age of fishing vessels, annual variation of investments in the fishery sector and the generation of jobs annually by this sector. Six periods of fieldwork, each period consisting of 5 days, were undertaken to interview and question all the identified tuna processing companies. We analyzed the tendencies of each factor studied, before and after the signing of NAFTA.

RESULTS

The behavior of the tuna fishery in Baja California Sur has varied during the study period. From 1980 to 1998, 15 600 tons were captured on average annually. In this same period, the highest capture was recorded during 1991: 27,650 tons and the lowest during 1983: 3 772 tons. During the period from 1986 to 1991, we observed a constant increase in the catch rate of 206 percent, a rate of 34 percent annually. In 1992, the tuna fishery recorded a drop of almost a fifth of all the tuna landings from 1991 (17 percent). However, from 1993 to 1997 a slight increment is observed, but it is starting from the period of 1995-1998 when a constant fall is presented in the growth rates of landed tuna: -52 percent, a rate of -13 percent on average annually (figure 3a). This fall in the tuna landings in BCS was mainly to two aspects. The embargo of tuna in 1990 and closing of two tuna processing plants: *Productos Pesqueros de Bahía Tortugas* and *Productos Pesqueros de La Paz*. These companies closed for operative and financial problems. Sinaloa and Colima increased the tuna landings like an effect of the closing of tuna processing plants in BCS (Beltrán, Luis .F., 2001:131).

The registered vessels in the tuna fishery have not varied significantly. On average, the sector has had two vessels. From 1979 to 1998, the maximum registered vessels was in 1997, with 7 units and the minimum in the period of 1986 to 1989 with zero units. We can speak of two periods, one of decline from 1982 to 1989 and another of growth from 1990 to 1997 (figure 3b). In spite of more capital (units of vessels) in the tuna fishery, the weight of landings shows a negative growth rate.

As for the age of the vessels, we can say that in 1998 two vessels had between 10 and 20 years of service, and three boats had more than 20 years of service, which means that the fleet of tuna vessels registered in BCS does not have any new boats (figure 3c). The length of dock devoted for this type of vessels has not varied. From 1986 to 1988, 308 meters of length was recorded, from 1989 to 1993, the length diminished to 210 meters and, increased to 338 meters from 1994 to the present (figure 3d).

Several interesting aspects to analyze are related to the volume, value and price of the export of Mexican tuna. In figure 3e, we can observe that the maximum volume exported was during 1989 with 83 400 tons and the minimum during 1977 with 10 843 tons. The average volume of tuna exported between from 1977 to 1998 was 40 345 tons annually. For this same period, on average, a ton of tuna had been sold for 1,047.00 USD. The maximum price reached per ton was recorded during 1981: 1,727.00 USD, per ton and the minimum price during 1984: 599.00 USD per ton. We can speak of four considerable drops in the price of the tuna, from 1982 to 1984 (-27.1, -29.9, -31.9 percent respectively); from 1988 to 1989 (-19.6 percent); from 1990 to 1991 (-17.8 percent); and from 1992 to 1993 (-21.5 percent).

As for the jobs generated in the fishing sector of BCS, we observed that after 1994, with Mexico entering the NAFTA, there has been no change. We cannot speak of positive effects in the generation of jobs in this sector. The federal public investment applied to stimulate the tuna fishery in BCS has not been significant after 1994 (table 1). In BCS tuna fishery must not expect significant changes, neither positive nor negative, with a free trade agreement at this level of integration.

RECOMMENDATIONS

After the fieldwork experience and the analysis of all data, we are certain that the positive effects of the NAFTA in the BCS tuna fishery could be enhanced. Also, potential negative effects could be minimalized, by the following suggestions.

- 1) Increase the installed production capacity of the tuna plants in BCS that would allow an increase in the production of tuna (at the moment tuna is captured on the coasts of BCS and it is processed in other states of the country like Sinaloa) and to take advantage of the proximity of the United States market in order to increase exports.
- 2) Promote investment in port infrastructure for the landing of tuna.
- 3) Promote the installation of a navy for the repair of vessels and to diminish operation costs.
- 4) Promote that the plants of tuna diversify their products to obtain several presentations (milled, sliced, smoked).
- 5) Support the local producers of tuna in increasing the quality of their products and support the commercialization channels to compete in the international markets.
- 6) Promote environmental audits in tuna plants in order to obtain certificates of clean industry and environmental quality and increase the tuna exports to the countries members of NAFTA.
- 7) Promote public and private investment in this sector to help compete in the international markets and create jobs in this sector.

CONCLUSIONS

In BCS we observed that the following effects, economic and social aspects were provoked with the NAFTA: the growth of the fishing production (negative), number of vessels (positive), age of vessels (no change), length of dock (no change), value of the export products (no change).

- 1) As for the jobs generated, and the federal public investment applied to stimulate the fishery of tuna in BCS, we can observe that, after 1994, when Mexico entered into the NAFTA, there has been no change. So, we cannot speak of positive effects in the generation of jobs and federal public investment in this sector.
- 2) In BCS tuna fisheries industry must not expect significative changes, neither positive nor negative, with a free trade agreement at this level of integration.
- 3) It will be very important to continue observing the changes of the tuna fishery in the long term. In fact, the tuna fishery was not an important part in the negotiation of the treaty.

TABLE 1
ECONOMIC AND SOCIAL EFFECTS CAUSED BY NAFTA
IN THE FISHERIES OF TUNA IN BAJA CALIFORNIA SUR, MEXICO

	<i>Changes</i>	<i>Effect</i>
Growth of Fishing Production	During 1992 a drop of almost a fifth from 1991 was recorded. However, from 1993 to 1997, a slight increment is observed. From 1995 to 1998 a constant drop is presented in the rates of growth of tuna landing: negative 52 percent, a rate of negative 13 percent on average annually.	-
Number of vessels	On average, the sector has had two crafts. From 1979 to 1998, the maximum number of crafts observed was during 1997, with 7 vessels and the minimum during the period from 1986 to 1989 with zero units. We can speak of two periods, one of decline from 1982 to 1989 and another of growth from 1990 to 1997.	+
Age of the vessels	We can say that during 1998 two vessels had between 10 and 20 years of age and three had more than 20 years of service. The fleet of tuna vessels registered in BCS does not have new vessels.	=
Length of dock	The length of dock for this type of vessels has not varied. From 1986 to 1988, 308 meters of length was recorded for tuna vessels, from 1989 to 1993 the length diminished to 210 meters and, an increase to 338 meters from 1994 to the present.	=
Value of the export products	On average from 1977 to 1998, a ton of tuna had been sold for 1,047.00 USD. The maximum price reached per ton was recorded during 1981: 1,727.00 USD, per ton and the minimum during 1984: 599.00 USD, per ton. We can speak of four considerable drops in the price of tuna, from 1982 to 1984 (-27.1, -29.9, -31.9 percent respectively); from 1988 to 1989 (-19.6 percent); from 1990 to 1991 (-17.8 percent) and from 1992 to 1993 (-21.5 percent).	=
Investments in the fishery sector	No increase in investments in the fishery sector; they have not increased nor modified their installation.	=
Generation of Jobs	There has been no change.	=

FIGURE 1
MAP OF STUDY AREA

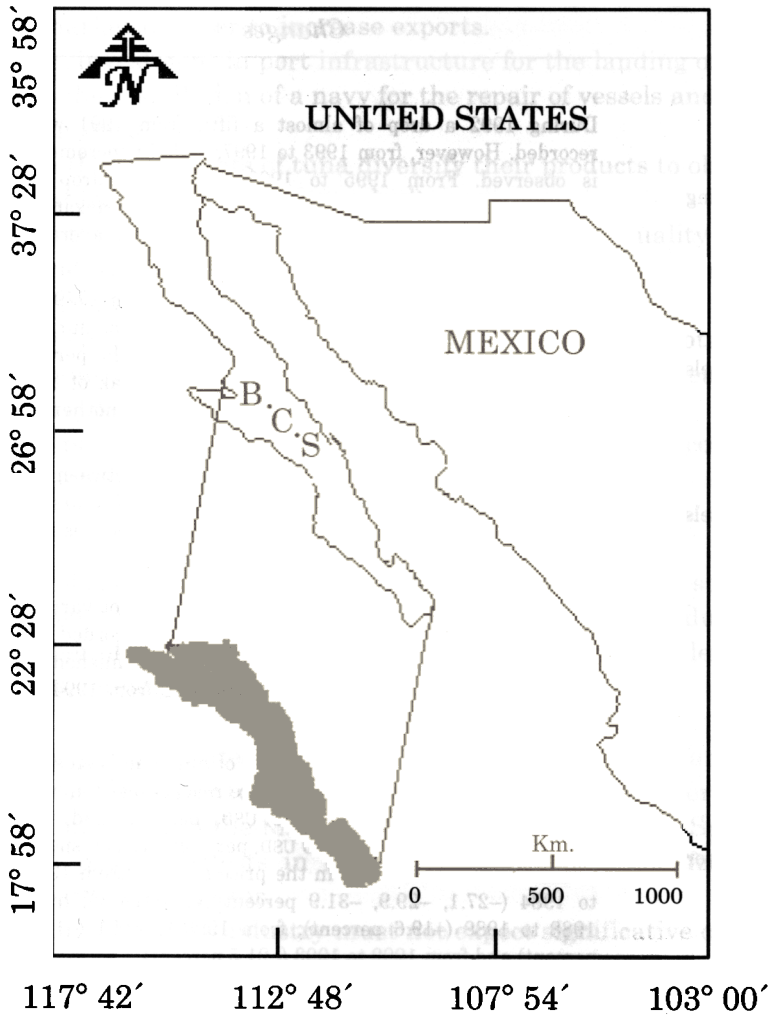


FIGURE 2
LOCATION OF THE TUNA PROCESSING PLANTS
AND THE MAIN FISHING AREAS

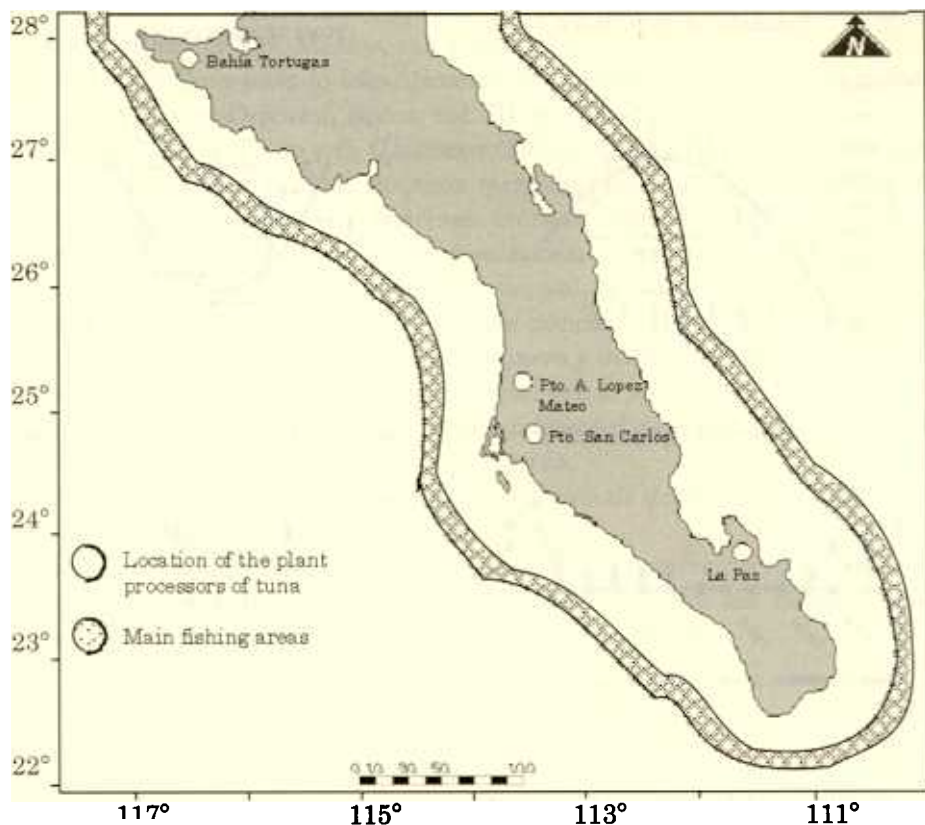
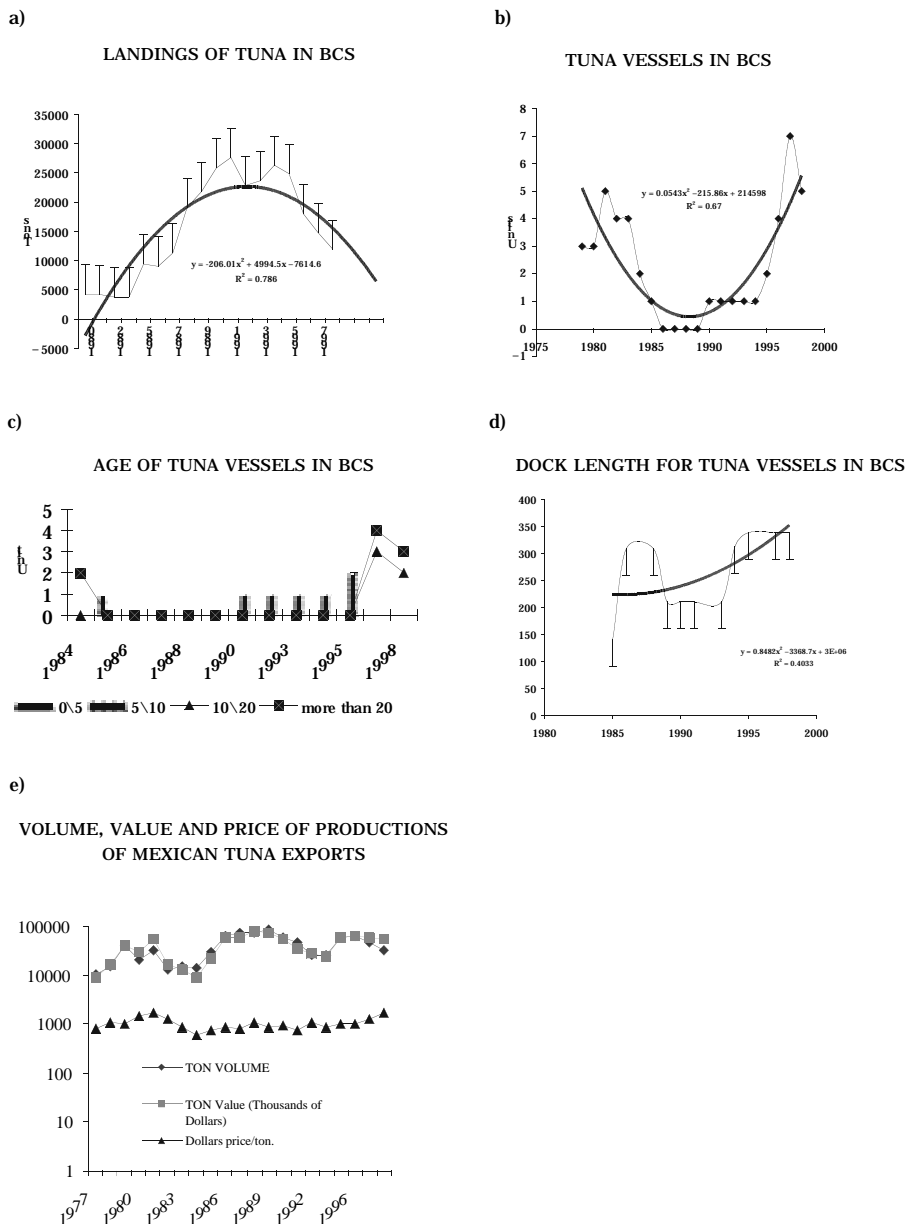


FIGURE 3
EVOLUTION OF SOME VARIABLES OF TUNA IN BCS
BEFORE AND AFTER NAFTA



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