

A view inside
the Galapagos
Fishing Community



Analysis of the current Socio economic situation of the “Galapagos Artisanal Fishing Community”

Research prepared for

The Galapagos National Park

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Dear readers

Several efforts have been made in the Province of Galapagos during the past years with the aim of improving the capacity building of the Galapagos Fishing Community and improving communication between them and the different stakeholders and users of the Galapagos Marine Reserve (GMR). Simultaneously a co-management approach was implemented; the Participatory Management Board (JMP) and the Inter-Institutional Management Authority (AIM) have been established. This management mechanism that includes a comprehensive zoning strategy has been adopted with the purpose of having a responsible administration of the GMR.

Nevertheless, even with all of these achievements, continuous disagreements and conflicts still exist in Galapagos between the Conservation Sector and the Artisanal Fishing Community and unfortunately on several occasions the level and type of conflicts have reached undesirable levels.

Undoubtedly, we believe that it is important to investigate and collect information about fisherfolks viewpoints and perceptions regarding the management actions, regulations, and the protection of the GMR. Indeed, with this research and study, JICA wants to contribute to the reduction of the continuous conflicts between the Conservation Sector and the Artisanal Fishing Community that occur over regulations and decisions taken by the GMR managers. At the same time we want to contribute to fortify the participatory management process in the challenge of protecting this Human World Heritage the "Galapagos Marine Reserve".

It is our intention, to provide with this study a list of recommendations that help to improve the relationships between the Galapagos Artisanal Fishing Community and the GNP and also a list of recommendations for strengthening the information flow on Marine Reserve among the Artisanal Fishing Community.

Results from this study and the analysis of other surveys show that the majority of fisherfolks in the Galapagos Islands are concerned about the protection of the GMR and, at the same time, fisherfolks also tend to be in favor of some level of management actions taken with the intention of curbing illegal fishing activities. The results also show that in Galapagos there exist a lack of communication between the leaders of the fishing sector and its basis, moreover, internal problems inside and between the fishing cooperatives are also a reality of this sector.

It is also important to be advised that fisherfolks tend to not be in agreement with the reduction of quotas or application of more strict norms and regulatory actions to control fisheries, this reaction is a result of the lack of other alternatives and possibilities for the fishing community. However, only a small group of fisherfolks are willing to turn to extreme and drastic measures, more commonly fisherfolks demonstrate their disagreement verbally protesting but unfortunately, the ordinary fisherfolks usually follow or support their leaders' measures.

The results of this study as well as others presented in some available surveys are optimistic in terms of the future for the islands. The results of this study as well as others presented in some available surveys are optimistic in terms of the future for the islands. Anyway, we are to recognize that there is a critical reality concerning the challenge of protecting the fishing resources of the GMR.

Based on the results of this survey, three general long-term goals are described; these aspirations will be considered in the Conclusions of this study:

To design and implement Strategic campaigns of communication with the purpose of strengthening the internal and external communication of the Galapagos Artisanal Fishing Cooperatives. In this issue, it is important to emphasize the necessity of creating an environment where members of the fishing community feel the liberty to act and express their necessities.

To define and implement alternatives for the Galapagos Fishing Community. The Ecotourism is one of the preferences of many fishermen.

Improve institutional trust and satisfaction by fisherfolks for the GNP.

We could accomplish these goals through the different five Outputs of JICA Project. Anyway, to achieve those goals we must first improve institutional trust and satisfaction by fisherfolks for entities working towards the sustainable management and conservation of the GMR. Without the trust and credibility of the Fishing Community in the GNP, any goal or action suggested in this study could be approached.

By working on the main goals suggested in this study, we will support to reduce future conflicts, not only among the Galapagos Fishing Community but also conflicts between fisherfolks and other important sectors of Galapagos, such as the conservation and the tourism sectors.

It is our hope that the results of this study will be useful for the Galapagos National Park in the challenge of managing the Galapagos Marine Reserve. With reference to JICA Project, it is imperative to work with the community to achieve the main goal of supporting the conservation of the GMR with the participation of local residents.

This study contains both, recommendations for improving the relationships between the Galapagos Artisanal Fishing Community and the GNP, and a list of recommendations for strengthening the information flow on Marine Reserve among the Galapagos Fishing Community.

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**In any free society,
the conflict between
social conformity and individual
liberty is permanent,
unresolvable, and necessary.**

Kathleen Norris

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Objectives of the investigation

The objective of the investigation is to obtain the necessary information in order to present an action plan that contains the characteristics and needs of the Galapagos Fishing Sector and contribute to strengthen the information flow on Marine Reserve among Galapagos Fishing Communities. The survey has basically 16 objectives:

To collect and analyze the available information and surveys, regarding to socio economical aspects of the Galapagos Fishing Community in order to prepare a summary of the surveys results and a list of recommendations and priorities needs.

To update and complement the existent information concerning the Fishing Community.

To learn about the experience of other donors and Cooperation Agencies in the Galapagos Islands.

To analyze and describe the historical antecedents of the Fishery Cooperatives conformation, including the effects of the migration in that sector.

To analyze and describe the current situation of the Fisheries and Fishing Communities in the Galapagos Islands.

To analyze the current socio economic condition and the structure of the Galapagos Fishing Community.

To analyze the current situation of the Galapagos Fishing Cooperatives and their roll into the Galapagos Fishing Community.

To analyze the relationships and interactions between the members of the Fishing Cooperatives and their leaders.

To identify the causes of the conflicts and lacks of communication between the different Galapagos Fishing Cooperatives and their internal groups.

To analyze and describe the roll of the Fishing Community regarding the Participative Management of the fishing resources.

To describe the existent bonds among the Fishing Sector and the decisions that are taken at the Inter-institutional Authority for Management of the GMR concerning to the extraction of the marine resources.

To analyze the different communication media in order to identify the best way to reach the Galapagos Artisanal Fishing Sector (TV, radio, web page, newspaper).

To analyze the current situation of the Women's Groups as an elemental part of the Galapagos Fishing Community.

To identify and analyze the possible alternatives and possible solutions for the Galapagos Artisanal Fishing Sector.

To prepare a list of recommendations for the improvement of the relationships among the Galapagos Fishing Community and the GNP.

To prepare a list of recommendations for the invigoration of the information flow on Marine Reserve among the Galapagos Fishing Community.

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Justification

"The Archipelago of Colon", more commonly known as the Galapagos Islands, is a province of Ecuador located about 600 miles off the coast of South America. It consists of approximately 13 major islands, 6 small islands and more than 40 islets and rocks.

The total land area is 7,882 square kilometers, with a coastline longer than that of continental Ecuador (1,366 kilometers). Ecuador exercises complete sovereignty over a 200-mile territorial sea, measured from delineated baselines off the continental and insular shores. In the Galapagos Islands, the archipelagic baseline is formed by straight lines connecting the outermost islands of Darwin, Genovesa, San Cristobal, Española, Floreana, Isabela and Fernandina. The marine area, within this baseline is considered to be interior waters.

Traditionally targeted organisms in the interior waters of the Galapagos Islands include the red and blue spiny lobster, and various types of grouper uniformly classified as "whitefish".

More contemporary fisheries include the sea cucumber and a recent focus on the capture of large tuna for commercial export. The protection of the GMR demands tremendous efforts in order to guarantee a sustainable use of the resources of the Marine Reserve.

In support of the on-going activities of the GNP and other conservationist organisms in favor of the Galapagos Artisanal Fishing Sector, the Project JICA is interested in undertaking a preliminary assessment of the status of artisanal fisheries in Galapagos, at the same time, we want to analyze the available surveys and socioeconomic information about this important sector and then complement the information with our own research.

The aim of the survey is to provide basic data for future training programs and to obtain elemental information in order to identify concrete activities to be implemented with the Galapagos artisanal fishing sector in order to strengthen the information flow on Marine Reserve among Galapagos fishery communities.

The artisanal fisheries in Galapagos are fundamental to the socio-economic fabric of the island communities; they constitute a significant source of seafood for both, the islands and the mainland.

According to the latest available data¹, in Galapagos there exist *1001 fisherfolks operating 446 fishing boats* (207 small launches, 174 launches or "fibras" and 65 boats), fishing with relatively low-tech gear for a range of fin-fish and shell-fish species. The most important fisheries include a vertical drop-line fishery targeting

¹ Galapagos National Park data base. Marine Resources Department.

species of rock-cod or grouper (locally called 'bacalao'), plus other demersal species; and a seasonal dive fishery targeting two species of rock lobster.

Other significant fisheries target tuna and other large pelagics, mullet, chitons, coral, octopus and conch. Until recently a fishery for sea-cucumbers, has been an important source of income.²

Under the Galapagos Especial Law, an Inter-institutional Authority for Management of the Galapagos Marine Reserve (AIM) has been established which is responsible for fisheries policies and management in the islands. This body has a broad membership of stakeholders and interested parties and is effective in addressing conservation issues and the formulation of realistic management options.

The "Participatory Management Board" (JMP) operates at the provincial level and comprises representatives from tourism, fishing, and conservation who have responsibility to provide guidance and assistance in the management of the reserve.

The GNP is in charge of the administration, management and conservation of the Marine Reserve. The Marine Resource Department of the GNP is effective in conducting monitoring, control and surveillance, enforcement of management regulations and for the detection of illegal activities. The GNP also plays an important role in improving the level of education and training of fishermen and their level of organization.

On the other hand, Galapagos Artisanal Fishing Cooperatives are not well structured or organized. Fisherfolks interest in cooperatives is lacking and fisherfolks appear unwilling to pay membership dues. Consequently, cooperatives have not been able to develop a significant role in regard to fish handling, storage, and marketing.

There exists also, a lack of communication among the four Galapagos fishing cooperatives, actually internal and external communication problems are the most evident problems of the fishing community.

Past efforts to improve organization have been dogged by disagreements and internal conflicts. However, continued assistance to help organize fisherfolks, increase education and general awareness of marketing, conservation, environmental and other issues is a fundamental requirement.

² "A Study of Artisanal Fisheries in the Galapagos Islands, Republic of Ecuador"- MEP.

Methodology

The present study is an evaluation of the current socioeconomic situation of the Galapagos Fishing Community. It was performed in order to identify the strengths and weaknesses of this important group of users of the GMR with the purpose of obtaining the necessary information of sector to develop an action plan that contains the characteristics and needs of the Galapagos Fishing Sector.

This study is also an analysis about the available information and existent surveys, regarding to socio economical aspects of the Galapagos fishing sector. Many analysts and consultants have carried out different perception studies, investigations and socio economic surveys concerning the Galapagos Fishing Sector. At least 66 studies where found at the library of the GNP and CDF³, however the most significant of them where analyzed. A summary of the surveys results and a list of recommendations and priorities needs were prepared. Even when there exist several socioeconomic studies about the "Artisanal Fishing Sector", the circumstances have changed and most of the information needs to be updated, especially the economic data information. For this reason, once I finished the summary of the available surveys, I performed our own socioeconomic survey in order to update and complement the existent information.

Another important goal of this investigation was also to identify the causes of the conflicts and lacks of communication among the different Galapagos Fishing Cooperatives and their members with the intention of contributing to strengthen the information flow on Marine Reserve among Galapagos fishery communities. This study was also performed with the intention of grasping the fisherfolks attitudes about the GMR management so we can find possible solutions that contribute to improve the relationships between fisherfolks and GMR administrators.

Finally, since there are several local and international NGOs supporting the GNP in the aim of conserving the Galapagos Islands and its Marine Reserve, this study evaluates their work experiences and it collects the main perceptions and recommendations concerning the work with the Galapagos Fishing Community.

These items and some others previously mentioned were included in the investigation. The execution of the study was carried out basically through 2 important investigation tools:

Individual hearings:

- With Galapagos Fishing Cooperatives leaders.
- With Galapagos fisherfolks.
- With the representatives of the different donors.
- With representatives of the conservation sector.
-

Opinion polls with Galapagos fisherfolks in the three islands.

³ See Biography, "List of Perception studies, investigations and socio economic surveys about the Galapagos Fishing Sector". Most of these surveys are available at the library of the GNP and CDF.

Opinion Polls Procedure

This study was performed with the direct collaboration of fisherfolks from San Cristobal, Santa Cruz and Isabela Islands; in fact, the involvement of the fisherfolks was the most important key of the investigation. The Galapagos Islands have four inhabited islands⁴, in three of them there are communities who engage in fishing activities.

San Cristobal and Isabela Islands have communities whose economy is very depended on fishing activities, especially in Isabela Island where no other alternatives are available. In contrast, Santa Cruz Island is the center for tourism and trade activities and the location of the Galapagos National Park and Charles Darwin Foundation headquarters, for these reasons, in Santa Cruz there are more work alternatives for the community. Nevertheless, this study includes interviews and opinion polls of fisherfolks of the three islands.

The study population included a sample of any registered fisherfolk that could be contacted and was willing to participate. All together, 300 fisherfolks were interviewed, which represents a 30% of the fishing community.

Besides the individual polls, more than 30 personal hearings were performed with key fisherfolks and leaders of each one of the four Galapagos Fishing Cooperatives.

The participation of the different fisherfolks was quite satisfactory and pleasing; the majority of the fisherfolks interviewed participated willingly and without any apprehension.

Data Collection

The Survey Instrument

The information for this study was collected using a questionnaire⁵ (Appendix 1). There were 29 questions divided in six sections:

- General information about fisherfolks.

- Social Information.

- Economic Information.

- Information about their fishing Cooperatives.

- Fisherfolks attitudes about the management of the GMR and its resources.

- Information about the communication media and the Galapagos Fishing Community.

Each one of these sections includes questions about the current socioeconomic situation of the fisherfolks, their beliefs about management actions, behavior intentions, communication and future concerns.

⁴ In fact, there are 5 inhabited islands; however one of them is just a military base where the principal airport of the Galapagos Islands is located. This Island is known as "Baltra".

⁵ See Appendix 1. Measurement Instrument (Spanish)

Survey management

The opinion polls were performed mainly by myself, however since every single questionnaire took sometimes more than 30 minutes, I used trusted people as interviewers in order to accomplish a bigger number of polls⁶.

The questionnaires or opinion polls were first explained to interviewers on each of the islands where the survey was performed. The interviewers were taught how to administer the instrument and given the opportunity to practice with their peers. Training was conducted with interviewers to ensure a proper level of understanding before questionnaires were distributed.

Each interviewer was responsible for a determined number of questionnaires that they presented to fishermen in an informal situation in the location of their choice. Many fishermen were interviewed in the streets, on the fishing piers, in their homes, and on boats. The survey instrument took approximately 25 minutes to complete, and the answers for each question were filled in by the interviewer.

Boundaries

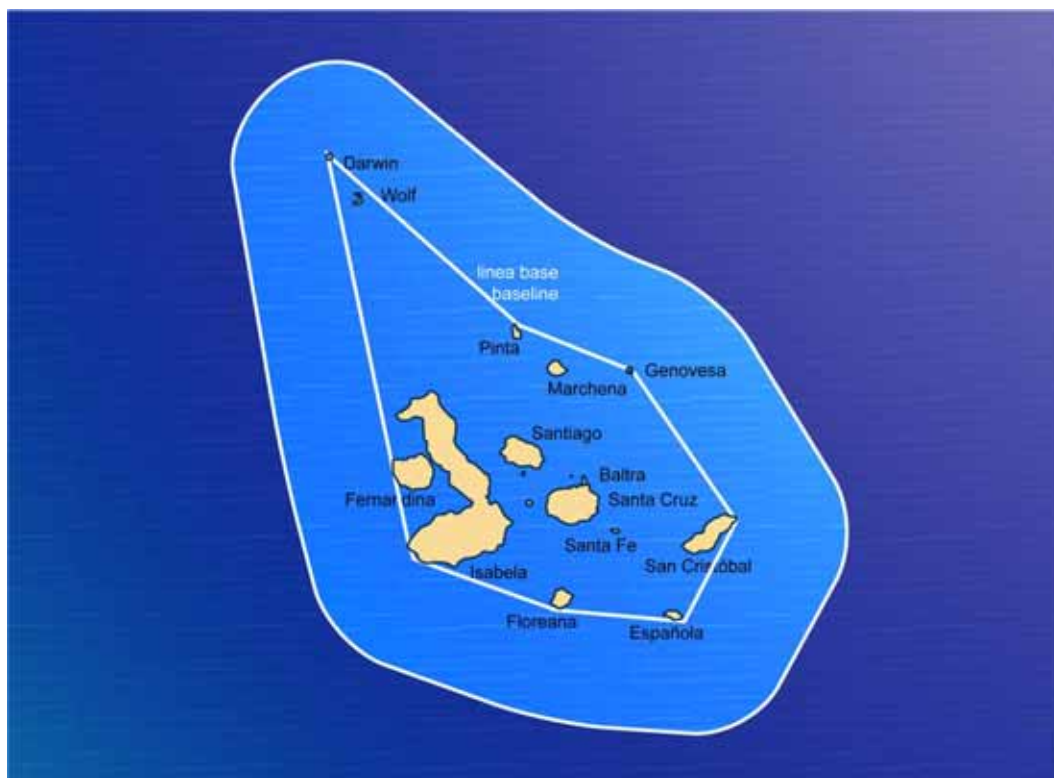
As with all research and survey project, this study had different limitations too. It is not easy to obtain information from the local fisherfolks mainly because they doubt of the objectives of the surveys and besides they do not agree with the results of the majority of other studies. Many fishermen were also negative to answer the questions because they have not seen any benefit of this kind of investigation projects.

In many cases, several fisherfolks are just tired of answering questions because they have found wrong results and lies about the fishing community in other surveys. For example, concerning to the fisherfolks revenues and profits of the fisheries, some surveys indicate that Galapagos fishers are in a good economic situation, this kind of pronouncements irritates to the sector and for that reason many just do not want to answer questions anymore. To resolve this problem, I had to show and validate the results with key fisherfolks before the document was published in order to avoid misunderstandings.

On the other hand, many of the fishing conflicts are temporally based depending on the fishing season, so fisherfolks opinions during the survey might not represent their year-round feelings on the concepts in question. The opinion polls of the present survey was carried out during the sea cucumber and lobster fisheries 2005, the GNP strengthens and increments the patrolling and control activities during these fisheries, so it is very evident that fisherfolks feel the pressure of the GNP control and consequently their attitude and answers might be affected by this pressure. In order to resolve this, I think that various survey periods through the year could have been used in the survey.

⁶ Due to apprehension within the fisherfolks of research in general, people that are trusted by the fishing community were selected as interviewers.

The Galapagos Marine Reserve



Found at the confluence of warm and cold surface currents and deep cold upwelling waters, the waters surrounding the Galapagos Islands are home to a fascinating ecological system. The waters were unprotected until recently and became vulnerable to the pressures of increased human presence, fishing and tourism.

Marine life in the Galapagos waters is closely related to the life on the islands. Island animals depend on the ocean. Birds and animals existing near the water have a variety of distinctive habitats and endemic species including the world's only sea-going lizard and the marine iguana. Other notable wildlife includes the sea lion, fur seal, Galapagos penguin, flightless cormorant, waved albatross, lava gull and swallow-tailed gull.

The waters surrounding the Galapagos are home to 3000 species of marine plants and animals. Just as amazing as the animals on dry land the marine life in the waters that surround the Galapagos Islands is spectacular. Many large marine animals are to be seen, from the colorful parrot and damsel fish to the larger moray eels and manta rays, the Galapagos waters are full of life. Diving in the Galapagos is quickly expanding; divers seek the experience of spectacular marine life including whale sharks, Galapagos sharks, and hammerheads.

In the past few years fishing in the Galapagos has boomed. Fishermen come with lines and nets hunting for tuna. Divers seek lobsters and non traditional sea cucumbers. During the 1990's fishing for sea cucumber to supply the Asian market greatly depleted that resource. Now even though illegal the fishing continues. Another lucrative and controversial practice is fishing for shark fins. This illegal fishing activity consists in hunting the sharks merely for their fins, leaving the rest of the animal. This depletes the area of this important predator and the main attraction of divers.

In 1992 a management plan was created for the *Galapagos Marine Reserve*, but due to lack of organization and involvement it went basically ignored. In 1997 renewed effort have brought about dramatic changes to the preserving the marine environment. All of the local sectors (fishing, tourism and conservation) have been brought together to negotiate protecting these resources. Finally in 1998 The *Galapagos Marine Reserve* was created. Designed to protect the waters surrounding the Galapagos Islands and the resources they contain.

The *Galapagos Marine Reserve* Law provides for the following:

- The incorporation of the Marine Reserve into the National System of Protected Areas
- The Marine Reserve area is increased from 15 - 40 miles (24-64 km) from the base line
- The Galapagos National Park Service is established as the authority in charge of administration, management and control of the marine reserve, as well as coordinating control with the Fisheries Ministry and the Navy.
- Establishing a multi-sector management board consisting of the Galapagos National Park Service and the users of the Galapagos Marine Reserve.

Brief history of the Galapagos Marine Reserve

1959 - Creation of the Galapagos National Park. The Galapagos National Park was created in 1959 according to the Emergency Ordinance Law No 17 of July 4 1959. This norm declared to the Galapagos Islands as "National Parks of exclusive reservation of the State, for the preservation of the flora and the fauna".

1979 - The Galapagos Islands are declared a "World Heritage Site" by UNESCO underlining its universal value for mankind. This declaration constitutes the international recognition of the wealth of the natural resources of the Galapagos National Park. The nomination commits to the Ecuadorian State to guarantee the conservation of the Galapagos Islands.

1984 - The Galapagos Islands are declared "Biosphere Reserve" by the UNESCO.

1986 - The waters of the Galapagos Islands are declared "Marine Resources Reserve". This ordinance recognizes and it legalizes the value of the marine resources located next to the islands of the Archipelago of Galapagos, unfortunately, the ordinance does not include a financing for the care of the Galapagos marine resources.

1990 - The Archipelago is declared "International Whale Sanctuary". This declaration recognizes the importance of the Galapagos marine waters, but, lamentably, it does not provide funds for its conservation.

1992 - The Management Plan for the conservation of the Galapagos marine resources is approved. This instrument facilitates the actions that should be undertaken by the Galapagos National Park in order to protect the marine resources.

1996 - The "National Institute of Ecuadorian Forestry and Natural Areas" (INEFAN) integrates to the "National Patrimony of the Natural Areas of Ecuador", the "Reservation of the Galapagos Marine Resources" in the category of "Biological Reserve of Marine Resources". (First Management Plan for this area).

1998 - El Congreso de la República del Ecuador crea el 18 de marzo de 1998 un "Sistema Especial" de manejo territorial: la "Ley de régimen especial para la Conservación y Desarrollo Sustentable de la Provincia de Galápagos". Esta "Ley Especial" fue creada debido a los factores ambientales que predominan las Islas Galápagos. Los administradores del Archipiélago serían capaces de fijar límites a la migración y limitar cualquier actividad que pudiera afectar el manejo de las áreas protegidas. La Ley Especial de Galápagos establece el "Sistema Administrativo y Jurídico" al cual están sujetas las actividades de conservación y desarrollo sustentable de la Provincia y de las áreas que constituye "La Reserva Marina de Galápagos".

En su Art. 15 sobre administración y manejo del PNG, la Ley Especial establece que:

- La Dirección del Parque Nacional Galápagos tiene a su cargo la administración y manejo de la Reserva Marina de la provincia de Galápagos, en cuya zona ejercerá jurisdicción y competencia sobre el manejo de los recursos naturales.
- Para efectos de control, investigación científica y monitoreo, coordinará sus actividades con las instituciones públicas competentes y privadas que realicen actividades en la zona de Reserva Marina, a base de las disposiciones del Plan de Manejo y los convenios interinstitucionales que se suscriban.
- La Dirección del Parque Nacional Galápagos tiene a su cargo la coordinación para la elaboración y supervisión de los planes de manejo, conservación y uso sustentable de la Reserva Marina y los demás instrumentos de políticas y planificación los cuales se elaborarán bajo el principio de manejo participativo y adaptativo, cuyos instrumentos se ponen a consideración y aprobación por el Consejo del INGALA.

- El Plan de Manejo de la Reserva Marina de Galápagos definirá la alianza y los niveles de participación y responsabilidad local de los grupos de usuarios debidamente organizados, a través de la Junta de Manejo Participativo.

1998 - The Galapagos Islands are declared "Galapagos Marine Reserve". This nomination makes even more difficult the administration of the GNP since the institution has not received an appropriate preparation.

1999 - Approval of the new management plan and the support of the CDF

Without doubt, the most notable accomplishment of 1999 was the governmental approval in March of the Management Plan of Conservation and Sustainable Use of the Galapagos Marine Reserve. This plan was the fruit of almost two years of effort in participatory management, initiated by the GNP and the CDF in 1997.

2000 - The Galapagos Marine Reserve (GMR) is declared a "World Natural Heritage", this international nomination was granted by the UNESCO, underlining its universal value for mankind. This recognition searches to commit to the Republic of Ecuador to guarantee an appropriate management of the GMR with a sustainable development vision.

2001 - Se califica con jerarquía y carácter de Ley Orgánica, y se publica en Registro Oficial 280 del 8 de Marzo del 2001 la "Ley Especial para la Provincia de Galápagos".

Se crea además dos nuevas autoridades para el manejo de la Reserva Marina de Galapagos; éstos son la "Autoridad Institucional de Manejo" (AIM) y la "Junta de Manejo Participativo" (JMP). Consultores especiales del "Comité asesoramiento" y la "Fundación de Charles Darwin" son también parte del manejo participativo.

2002 - The "Galapagos Regional Plan" was approved. This plan pretends to establish a sustainable development vision for the Galapagos Islands; it commits a responsible administration of the Galapagos National Park.

2005 - El 7 de abril de 2005 entra en vigencia el Acuerdo Ministerial mediante el cual se aprueba el "Nuevo Plan de Manejo del Parque Nacional Galápagos", denominado "Un Pacto por la Conservación y el Desarrollo Sustentable del Archipiélago de Galápagos".

Management of the Galapagos Marine Reserve (GMR)

The waters of the Galapagos Islands were declared "*Marine Resources Reserve*" (RRMG) in 1986 by a special governmental decree. This ordinance recognizes the importance of the Galapagos marine resources and helps to increase awareness for the protection of the waters surrounding the archipelago; nevertheless, the decree does not carry national protected area status, making in this way the management of the GMMR a difficult task. Between 1996 and 1997, a number of various changes were made to the Ecuadorian administrative structure, which directly influenced into the management of the Galapagos Marine Reserve. Firstly, in October 1996, the

Ministry of the Environment was established. This was assigned the role of Executive Authority for the design, planning and implementation of all Ecuadorian environmental policies. As a result, the National Institute of Ecuadorian Forestry and Natural Areas (INEFAN) was appointed *the body of administration of state protected areas*, which had previously been appointed the Ministry of Agriculture (MAG).

The Marine Reserve was officially declared in 1996, as a "Biological Reserve". This nomination gave the Galapagos National Park the command to revise the management plan. In the same year, in November 1996 the National Heritage of State of Natural Areas and the "Galapagos Reserve of Marine Resources" in the category of "Biological Reserve of Galapagos Marine Resources" were integrated by INEFAN. Their administration was handed over to the Galapagos National Park Service, (which changed its name to Galapagos National Park in 1995), with the coordination of other competent organizations. On the 29th of April 1997, the acting President Fabian Alarcón issued Decree No. 245 (published as official Record, Second Supplement No. 55 of 30th April 1997). In its sections relating to the Marine Reserve, the Decree created the Management Authority of the "Galapagos Reserve of Marine Resources", presided by the Ministry of the Environment and agreed by INEFAN, the Sub-secretary of Fishing Resources (SRP) and the General Board of the Merchant Navy (DIGMER).

The "Inter-institutional Commission" also influenced it for Control and Vigilance. As planned in the Management Plan of 1992, it was presided by the Board of the Galapagos Fishing and a representative from DIGMER. Later, in May 1997, the leaders of the Galapagos Artisanal Fishing Cooperatives formed an Act of Compromise in the National Congress (9th May 1997). In this pact, they officially recognized the GNP and its control and vigilance within the RRMG. They also requested the continuity of patrol and control activities in order to avoid the exploitation of fishing resources within the "Galapagos Reserve of Marine Resources". This request of the Galapagos Fishing Community was projected to the future creation of the Galapagos Marine Reserve.

The revisions and clarifications of present and future situation of the "Galapagos Reserve of Marine Resources" (RRMG) were imperative. Thus, in April 1997 the GNP with the technical and logistical help of the FCD initiated the coordination of a local participatory process to discuss problems and conflicts of the local users of the Marine Reserve. This carried the objective of revising the Management Plan of the RRMG.

In June 1997, The Minister of the Environment, in the role of President of the Management Authority of the Galapagos Marine Reserve instructed to the Director of the GNP the coordination and continuation of this revision. Between the 5th and 7th of June the First communal talks in professional presence were in progress. All the representatives of different sectors were involved in the talks. The sectors consisted of associations and institutes, which were consider, direct or indirect local users of the Marine Reserve, as well as observers, and institutes with interests to the Marine Reserve. During these days, the Management Plan meeting was initiated.

The aim was to obtain consensus points, which would implicate substantial changes in the Marine Reserve management. For example, the RRMG should be protected by special laws and held within a national system, which guarantees national conservation. From these structures, the GNP should order protection, management and administration of the marine ecosystem.

Moreover, an area of magnitude such as that of the "Galapagos Reserve of Marine Resources" should be managed through a participative management force between user groups and authorities.

This can only be made possible with the existence of a definitive group of users who will compromise long-term, who depend on the area and whose physical presence in the zone allows them to continue to participate in the planning, management and continuation of the protected marine area in a substantial way.

Eventually, a Special Law for the Conservation and Sustainable Development of Galapagos was drafted by the Ecuadorian National Congress in response to a series of conflicts between local fishermen and other stakeholders. This management tool, the "Galapagos Special Law" was approved in March 1998. This Special Law created a new category of Protected Natural Area and increased the Galapagos Marine Reserve area from 15 to 40 miles. In this law it is absolutely excluded industrial fishing from the area. The "Galapagos Special Law" also established a new management and administration regime, thanks to this achievement, the participatory management of the Marine Reserve was institutionalized in the Galapagos Islands.

The GNP is the manager of the "Galapagos Marine Reserve Resources" and the various stakeholders occupy an equal responsibility in the decision making process. A group of participants representing Galapagos stakeholders drafted a legal framework that would guide the participatory management approach as directed by the legislature.

A local conflict management/participatory planning process, initiated by the Galapagos National Park Service and the Charles Darwin Research Station brought the three sectors (Fishing Community, Tourism Sector and Conservation Sector) to a negotiating table. This multi-sectoral team, was named "Task Force" (in Spanish "Grupo Núcleo"), it gained consensus throughout the islands on measures central to effective management of the RRMG.

These measures were adopted at the same time with the Special Law for Galapagos and the Management Plan for the Conservation and Sustainable Use of the Galapagos Marine Reserve, both of which create a legislative framework for major changes to the management and protection of the Reserve. The management of the Galapagos marine resources still was an enormous challenge at that time. The process was at the planning stage with more negotiations to take place and all agreed that capacity-building within each sector is needed to put these innovative concepts of participatory management into practice.

If successful, the process would provide the mechanism for immediate management needs of the Marine Reserve as well as for long-term collaboration between the stakeholders of the Marine Reserve. The participatory process finally handed by consensus after 15 months' work – and a total of 74 meetings of the "Task Force". This was at times a challenging, controversial and arduous process, getting the different user groups to come to the negotiating table and stay at the negotiating table, even when decisions were difficult. The process survived changes in leadership in the different sectors and political election campaigns. It succeeded in revising the management plan.

Participation in and agreement on the drafting of the Management Plan creates the opportunity for compliance with and support for its regulations by the users of the Reserve.

The fishing, tourism and conservation science sectors, together with the National Park, were members of the "Task Force", involved in the drafting of the Management Plan and the Marine Reserve chapter of the Special Law for Galapagos. The "Task Force" was convinced that this type of process was the way in which future conflicts should be managed and the way in which the Marine Reserve could best be conserved and managed.

The Special Law for Galapagos and the newly approved Management Plan create a legal basis for an ongoing process of participatory management, through an alliance between a multi-sectoral body (fisheries, tourism, science) and the National Park: the "Participatory Management Board" (In Spanish "Junta de Manejo Participativo"). The JMP has the sustainable management of the Galapagos Marine Reserve as its primary objective and it is based on consensual decision-making.

One of the major challenges for the "Participatory Management Board" is to find ways to improve the representation of the different user groups by their leaders in the negotiations and discussions. This involves training, organizational development, education and communication skills. The compliance of the individual users with regulations and a form of management depends on effective representation, a feeling that they are involved, that they participate in the management decisions.

It is very important to mention at this point the roll of the "Inter-institutional Management Authority" (AIM) conformed by the following members:

- The Ministry of the Environment or a delegate thereof, who acts as chairman.
- The Ministry of National Defense or a delegate thereof.
- The Minister of Foreign Trade, Industrialization and Fisheries or a delegate thereof.
- The Ministry of Tourism or a delegate thereof.
- The Provincial Chamber of Tourism of the Province of Galapagos.
- The Local Fishermen Sector of the Province of Galapagos.
- Conservation, Science and Education Sector of the Province of Galapagos.

The Director of the Galapagos National Park acts as Technical Secretary of the Authority. The members of the Commission or their delegates must be officials of their respective agencies with permanent residence in the Galapagos Islands. According to the Special Regime Law for the Preservation and Sustainable Development of the "Province of Galapagos", the AIM has the following powers:

- Setting up policies for the Galapagos Marine reserve based in principles of sustainable development and conservation.
- Approving the Plan for the conservation and sustainable use of the GMR.
- Monitoring the execution of the Plan.
- Distributing resources assigned to the GMR and any other income pursuant to management priorities for the Reserve Area.
- Inviting the participation of public and private institutions when deemed necessary.
- Approving fishing schedules, volumes, sizes, species and nets allowed in Galapagos, with the advice of the National Fisheries and Fishing Development Council, and
- Authorizing participating scientific research studies aimed at improving conservation and developing marine fishing policies.

Creation of the "Marine Reserve Category" in Ecuador

Prior to the approval of the Special Law for Galapagos, one of the main problems facing effective management and control of the Galapagos Marine Reserve was that the category 'Marine Reserve' did not exist in the national legislation for protected areas.

The Reserve's administrative structure had poorly-defined responsibilities which created gaps in authority over policing, enforcement, and resource management. The unilateral declaration of Marine Biological Reserve by INEFAN in 1996 was challenged by the Sub-secretary of Fisheries and the industrial fishermen.

However, in March 1998, the "Republic of Ecuador" created one of the world's largest protected areas: the 133000 square kilometers, "Galapagos Marine Reserve". Through the Special Law for Galapagos, a new category of 'Marine Reserve' was created within the national system of protected areas, thus establishing a legislative framework for management and control of the Galapagos Marine Reserve, the only Marine Reserve in Ecuador, and also creating the opportunity for the creation of other marine reserves along the coastline of mainland Ecuador.

The National Park assumes responsibility for the management and administration of the Marine Reserve, with collaboration in patrol and surveillance. The Reserve supports some of the best known coastal fauna of Galapagos, but this spectacular wildlife is just the most visible part of a complex and unique ecosystem.

Due to the confluence of oceanic currents, Galapagos has at least three distinct biogeographic regions, with an exceptionally high proportion of endemic species amongst the marine flora and fauna of Galapagos.

About the extension of the Marine Reserve, prior to the participatory process, the Marine Reserve covered an extension of 15 miles from the base line of the archipelago. New studies and recent researches revealed the existence of underwater sea-mounts or perhaps volcanoes up to and beyond 40 miles of the base line. These areas are of vital importance as feeding grounds for the flagship species in Galapagos, such as sea lions, frigates, albatross etc.

These areas, however, were well known to fishermen, especially the industrial fishermen, who were fishing with long-lines which are notorious for their by-catch of these key species. These areas were receiving no form of protection as they fell outside of the 15-mile Marine Reserve.⁷

As a result of local consensus and the technical justifications necessary, the Galapagos Special Law approved the extension of the Marine Reserve to 40 miles from the base-line, therefore allowing for protection and management of this valuable marine resources reserve.

Management principles for a responsible administration of the Galapagos Marine Reserve

According to the "Management Plan for Conservation and Sustainable use of the Galapagos Marine Reserve" published under Official Record No 173, on April 1999, there exist 8 principles of management.

These are international principles and they are basic and important procedures that support the decision making in the Marine Reserve Management and eventually in the use of the Galapagos marine resources in order to guarantee their preservation and sustenance.

Principle of Designation

This principle consists on designating a principal authority whose primary objective and function is the environmental protection and conservation. In this case, this principle refers to the Galapagos marine ecosystem.

Principle of Responsibility

The different management strategies of human activities in the GMR are based on responsibility and obligatory commitments of all the ones who are interested in the goals, objectives and principles of the protected area. This principle takes into account the narrow ecological interactions between terrestrial and marine ecosystems as well as complementary conservation actions. For these actions,

⁷ "Summary of the Changes and Advances in the Management and Protection of the Galapagos Marine Reserve" by Pippa Heylings, June 1999.

resources are used in a way, which is ecologically sustainable, socially justified and economically profitable.

Principle of Participation.

The resources, which are found within the GMR, are limited. As a result, in order to ensure effective management, these resources are classified into acquainted groups and limitations of users with clear long-term interests. The physical presence of these groups in the Galapagos allows for the continual participation in the planning, formation of legislation and implementation of decisions relating to environmental resources of the GMR. As well as co-ordination with Agencies, that hold jurisdiction over the protected marine area.

Principle of Adaptive Management.

Actions of protection and conservation within the GMR should be adaptable to the changes that occur over the time in the users and in the natural environments of Galapagos. These actions should be adaptable also to new available information that points to management modifications. The Adaptive Management also responds to unexpected information or new circumstances. It is based on a plan, which anticipates pursuit and monitoring systems and it defines criteria and conditions to vary the management according to the results of the evaluation.

Principle of Precaution.

With the aim of avoiding damages to the Galapagos ecosystems and therefore to avoid the deterioration of the economic bases of its users, it is very important the "Principle of Precaution". This principle establishes that there exist incorrect or insufficient information concerning possible problems of environmental impact; it must be taken the decision that holds the minimal risk of direct or indirect damage to the ecosystem.

Principle of Sustainability.

All the different uses, activities and decisions related to the Galapagos Marine resources should be oriented to the maintenance of resources and also to the maintenance of the biological diversity with the purpose of facilitating the natural regeneration and at the same time facilitating a reasonable use of the resources. This "Principle of Sustainability" should strengthen the opportunities to satisfy basic and realistic needs for the socio-economic development and the improvement of quality of life for the future generations. All decisions, activities and management systems in the GMR have to be long-term maintainable.

Socioeconomic Principle.

The rational and sustainable use of the GMR resources should be aimed to the improvement of general living conditions. This principle is specifically related to social well-being and the satisfaction of the different groups of GMR users who are legally established.

Principle of Integration.

Every proposal or decision about the management or administration of the GMR

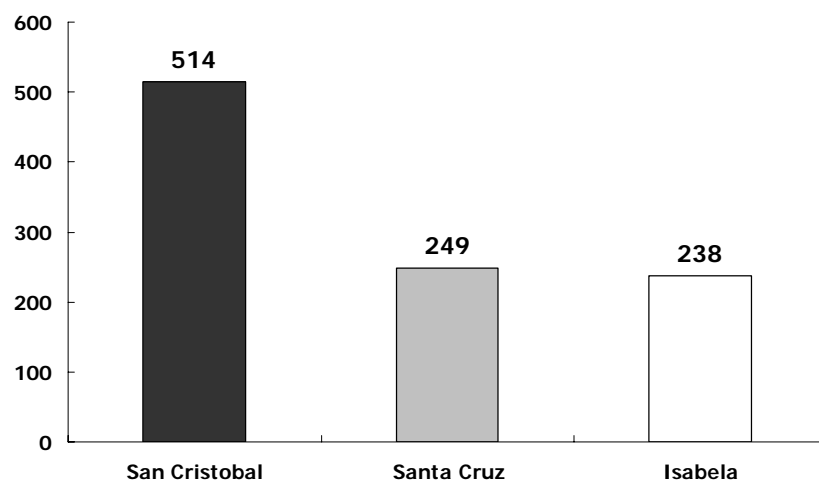
area should be considered in relation to the unification of an integrated management. The interests of specific sectors do not prevail on this principle neither to affect their management and administration.

Chapter 3

General Aspects of the Galapagos Artisanal Fishing Community

(Fig. 1)
Number of registered fisherfolks in Galapagos Islands 2005
Total: 1001 fisherfolks

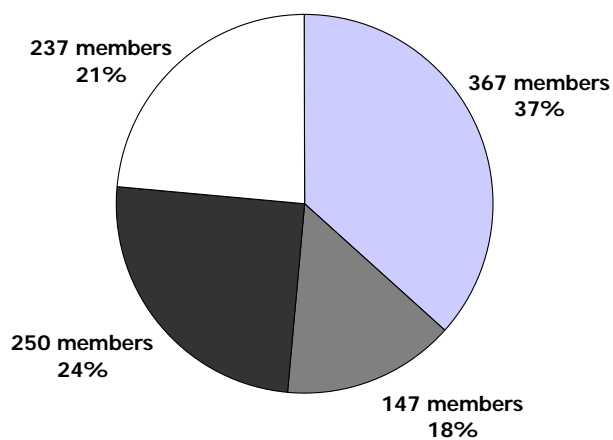
Source: GNP reports and JICA Survey 2005



(Fig. 2)
Number of the Galapagos Fishing Cooperatives registered members 2005.

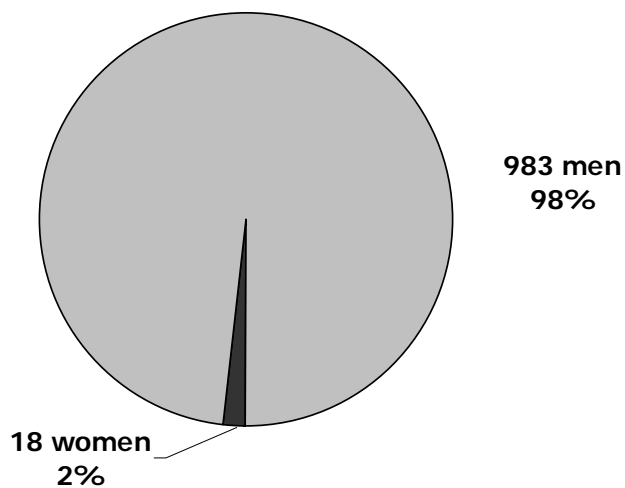
Source: GNP reports and JICA Survey 2005

COPESAN
 COPESPROMAR
 COPROPAG
 COPAHISA

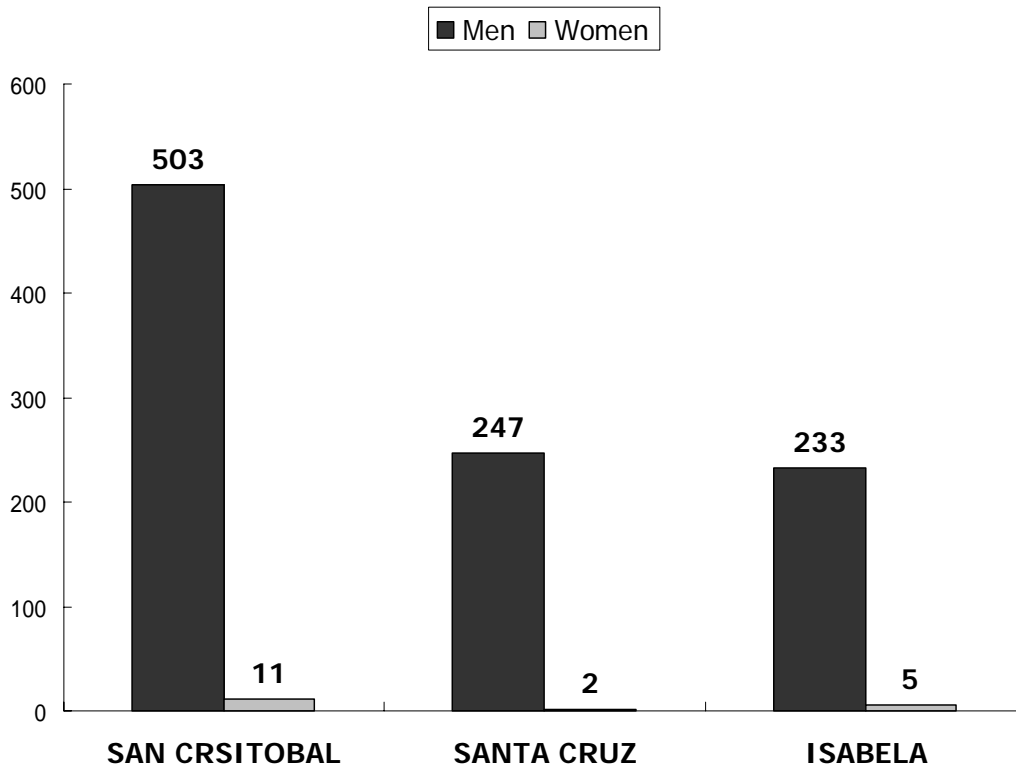


(Fig. 3)
Number of fisherfolks per sex in 2005.
 Source: GNP reports and JICA Survey 2005

Women
 Men

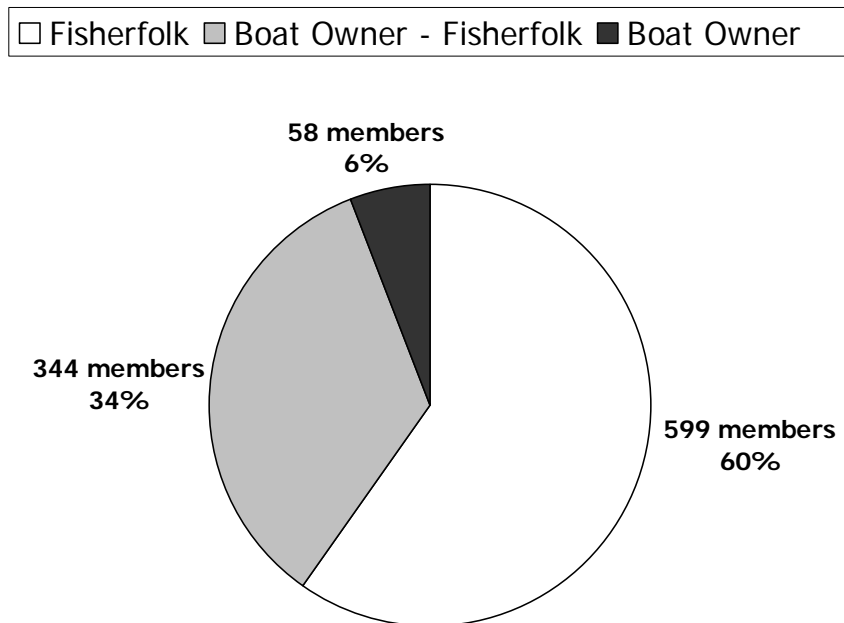


(Fig. 4)
Number of fisherfolks per island and sex in 2005.
 Source: GNP reports and JICA Survey 2005



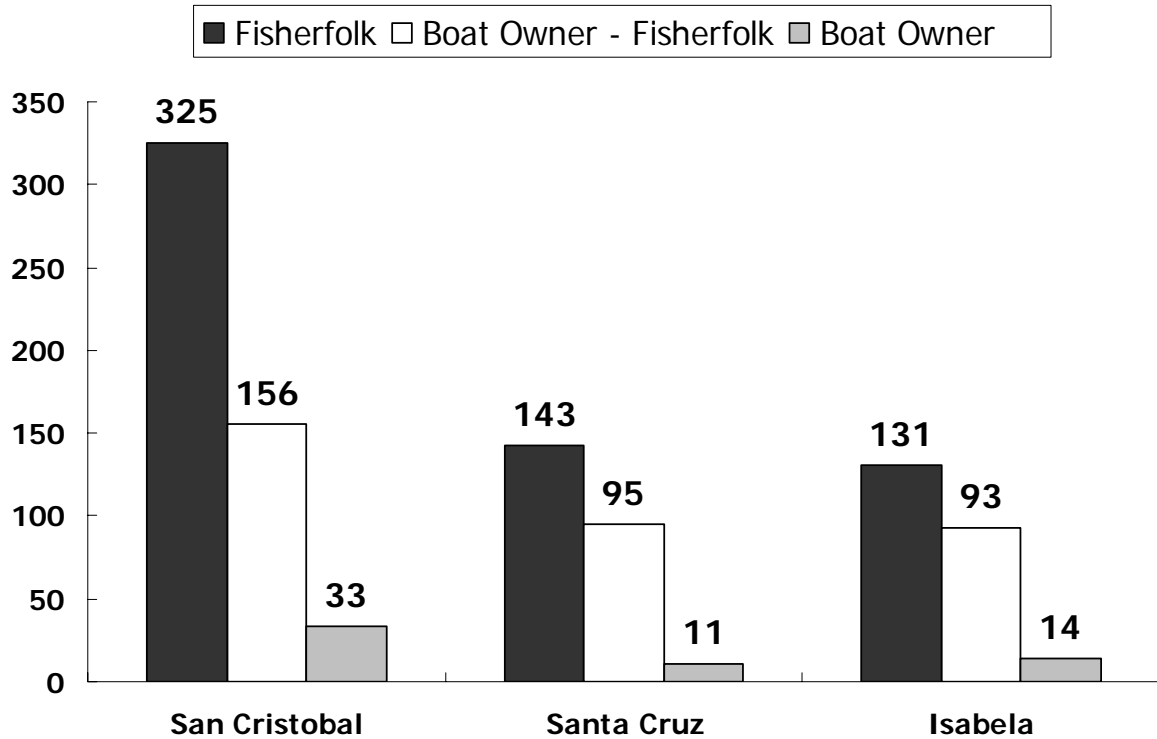
(Fig. 5)
Number of fisherfolks per categories in 2005.

Source: GNP reports and JICA Survey 2005

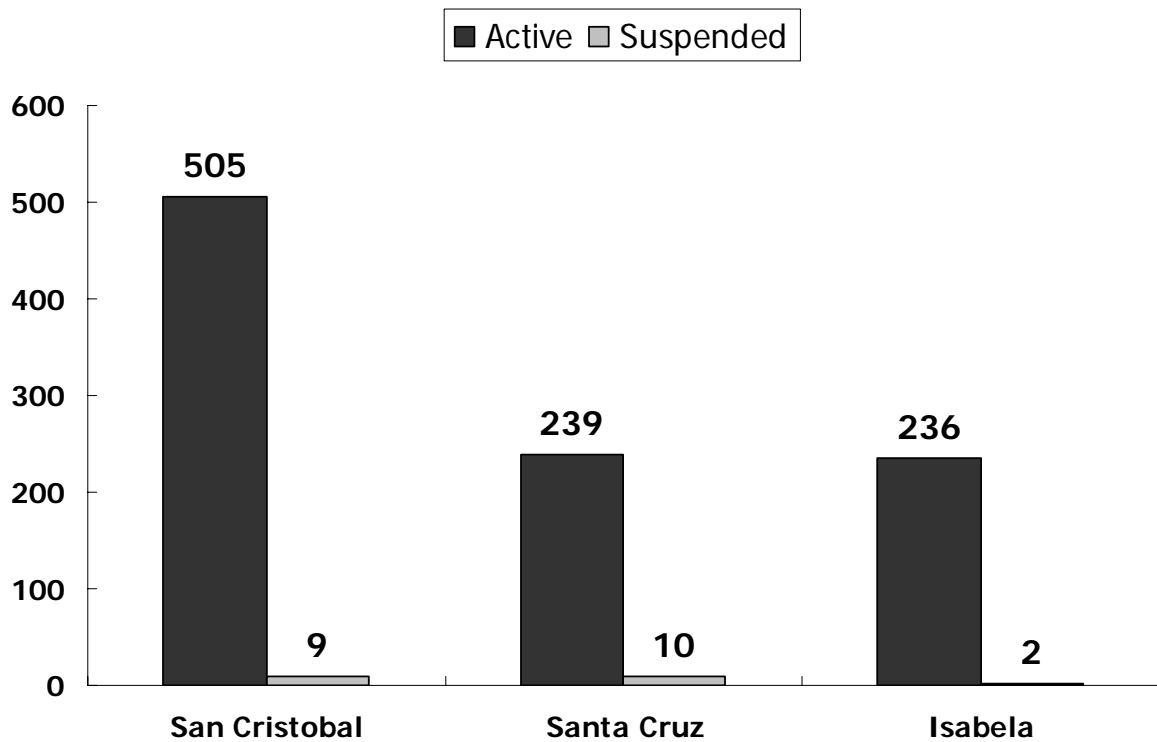


(Fig. 6)
Number of fisherfolk per island and category in 2005

Source: GNP reports and JICA Survey 2005



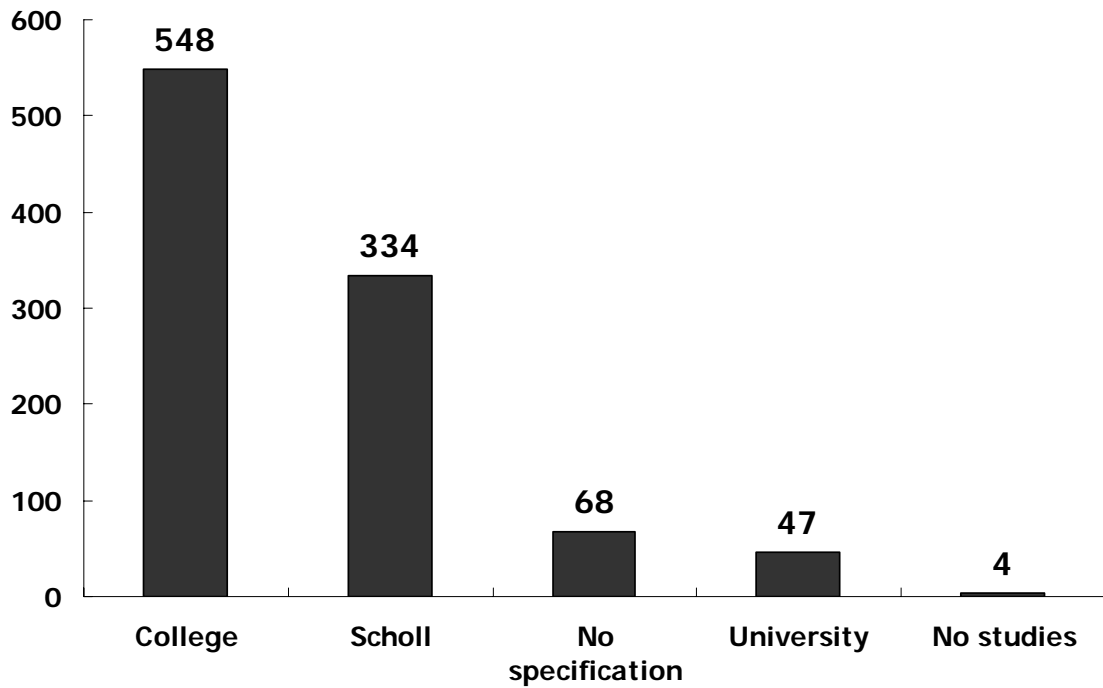
(Fig. 7)
Number of active and suspended fisherfolks in 2005
Total: 980 active and 21 suspended.
 Source: GNP reports and JICA Survey 2005



(Fig. 8)

Number of Galapagos fisherfolks according to their academic status.

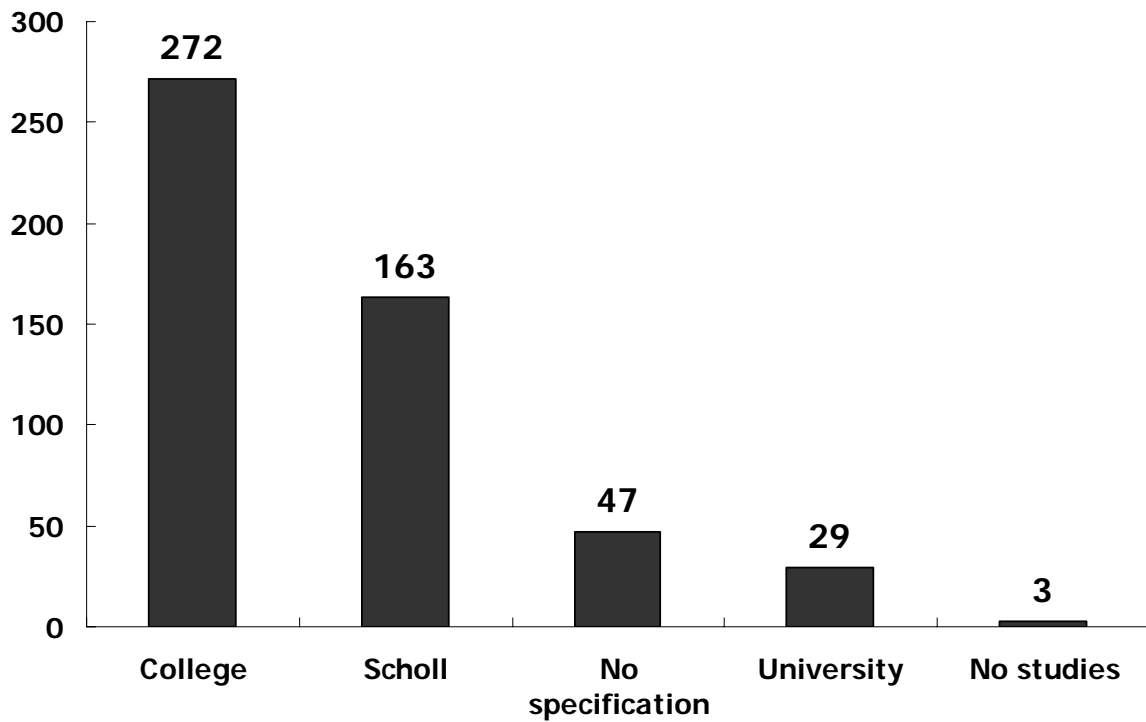
Source: GNP reports and JICA Survey 2005.



(Fig. 9)

Number of Galapagos fisherfolks according to their academic status in San Cristobal Island.

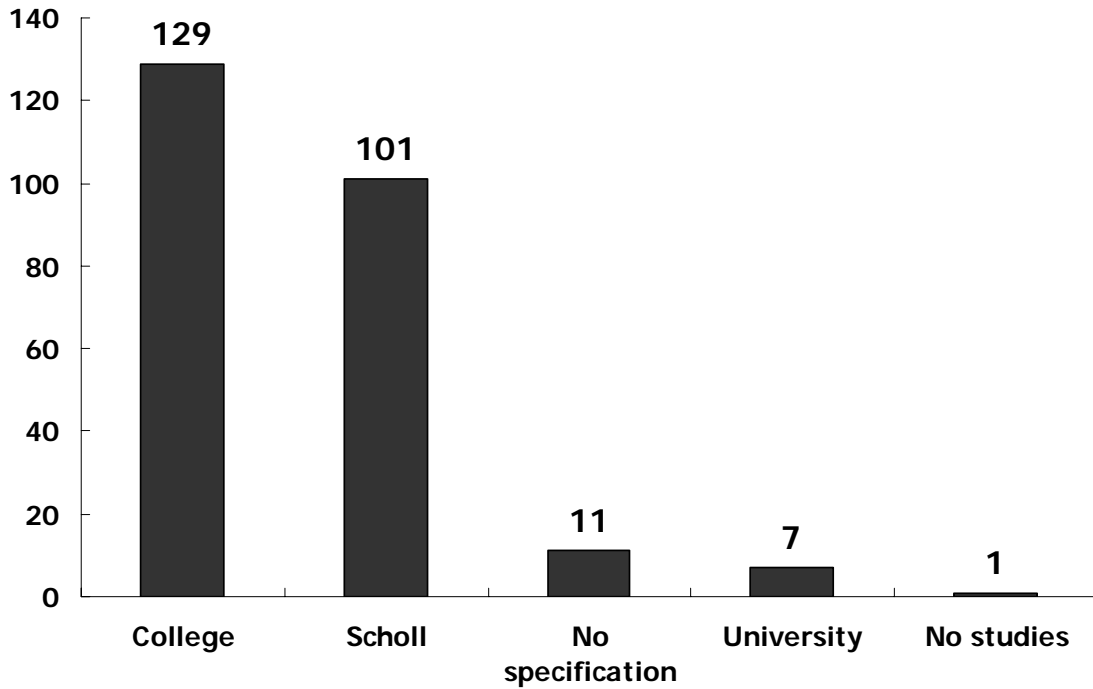
Source: GNP reports and JICA Survey 2005.



(Fig. 10)

Number of Galapagos fisherfolks according to their academic status in Santa Cruz Island.

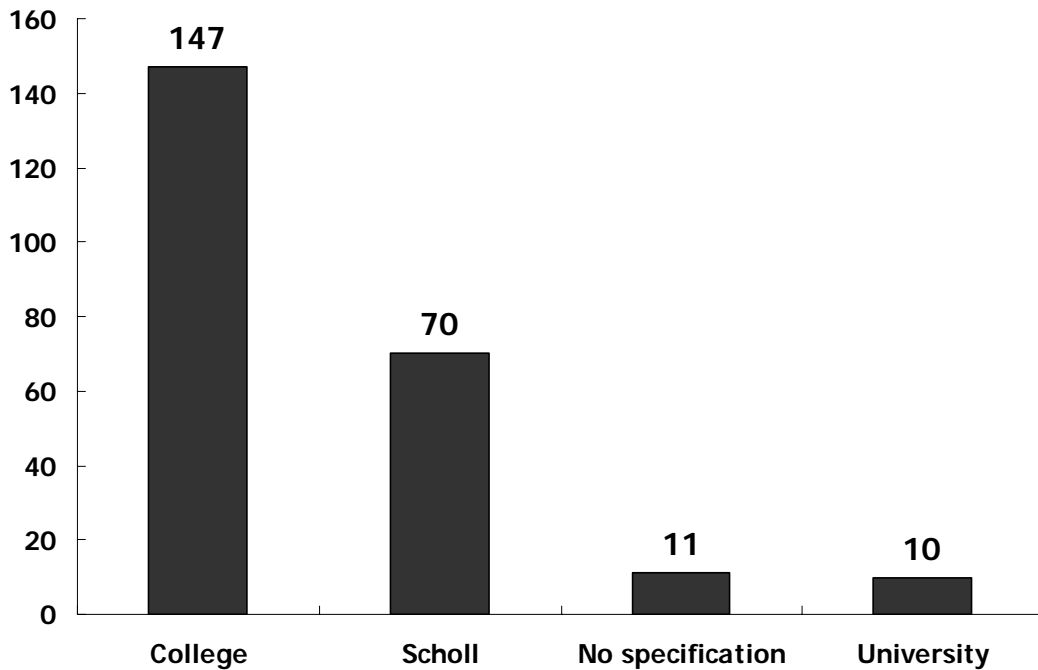
Source: GNP reports and JICA Survey 2005.



(Fig. 11)

Number of Galapagos fisherfolks according to their academic status in Isabela Island.

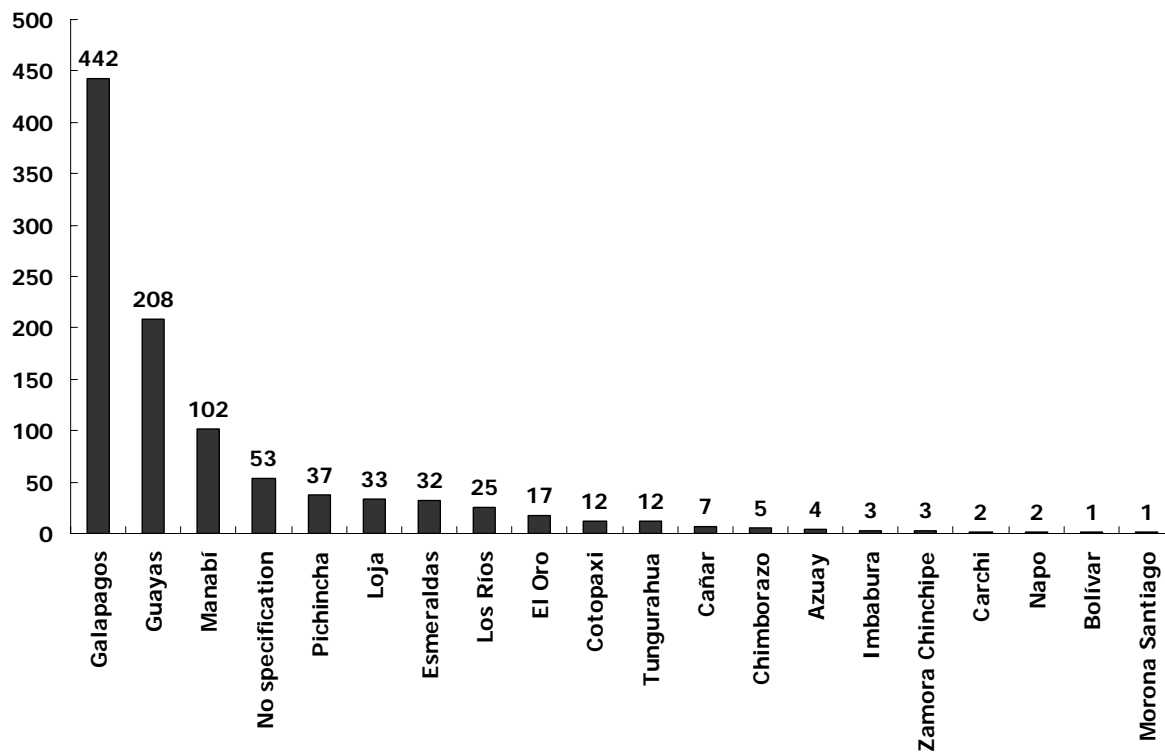
Source: GNP reports and JICA Survey 2005.



(Fig. 12)

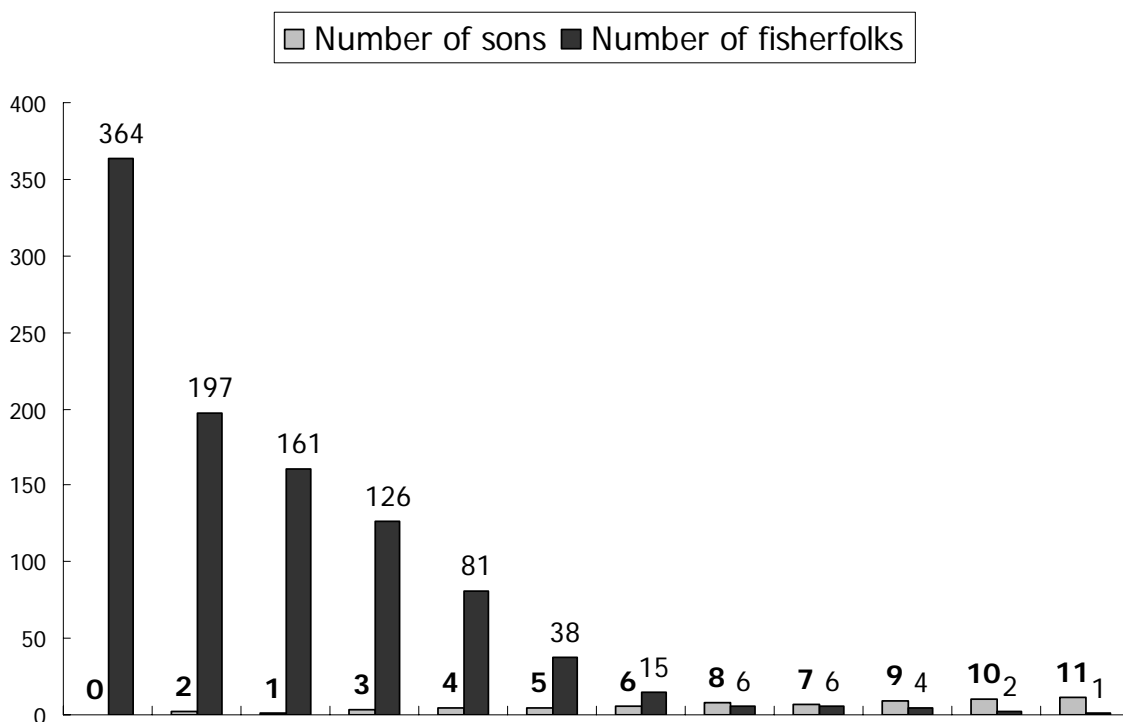
Number of Galapagos fisherfolks according to their origin Province.

Source: GNP database and JICA Survey 2005.



(Fig. 13)
Number of Galapagos fisherfolks' sons.
Total: 1694 sons.

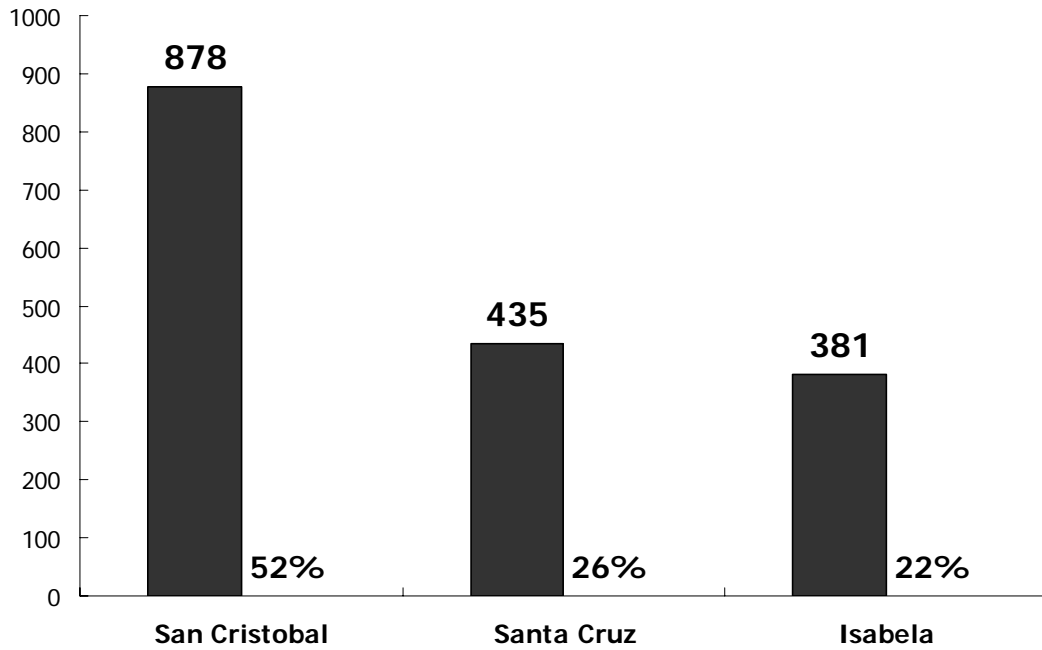
Source: GNP database and JICA Survey 2005



(Fig. 14)

Number of Galapagos fisherfolks' sons per Island.

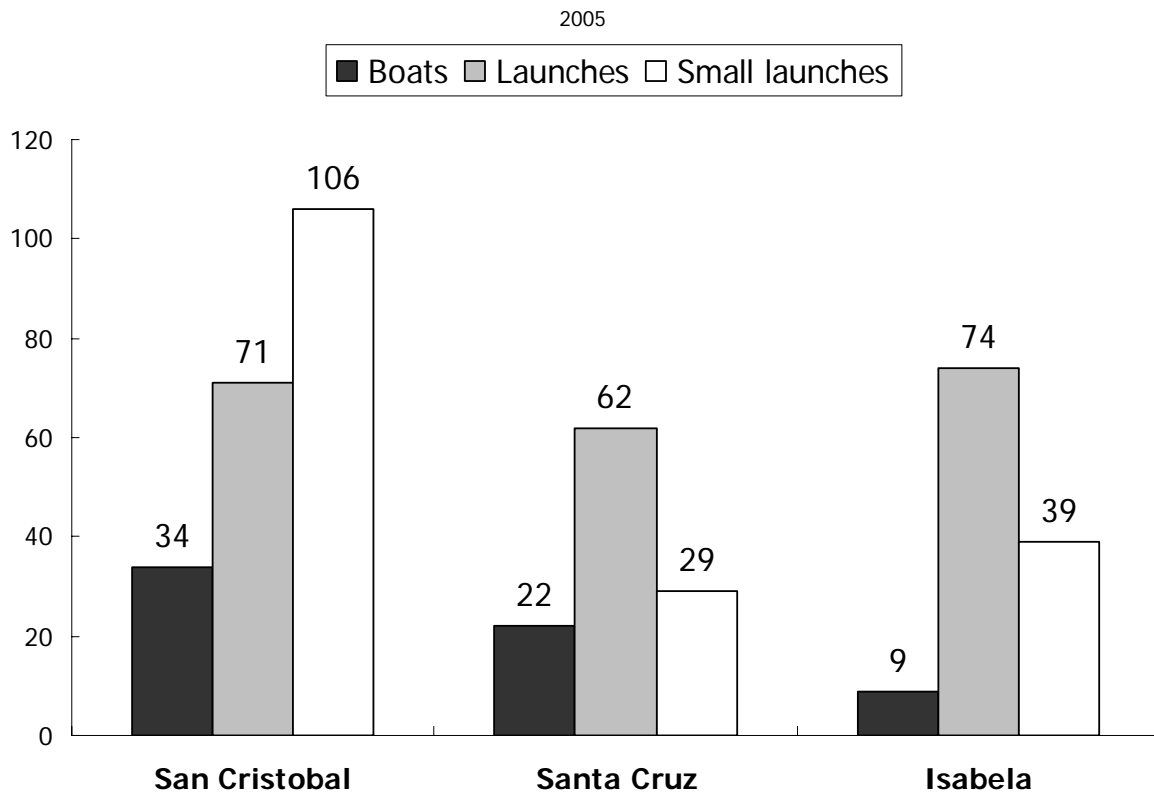
Source: GNP reports and JICA Survey 2005.



(Fig. 15)

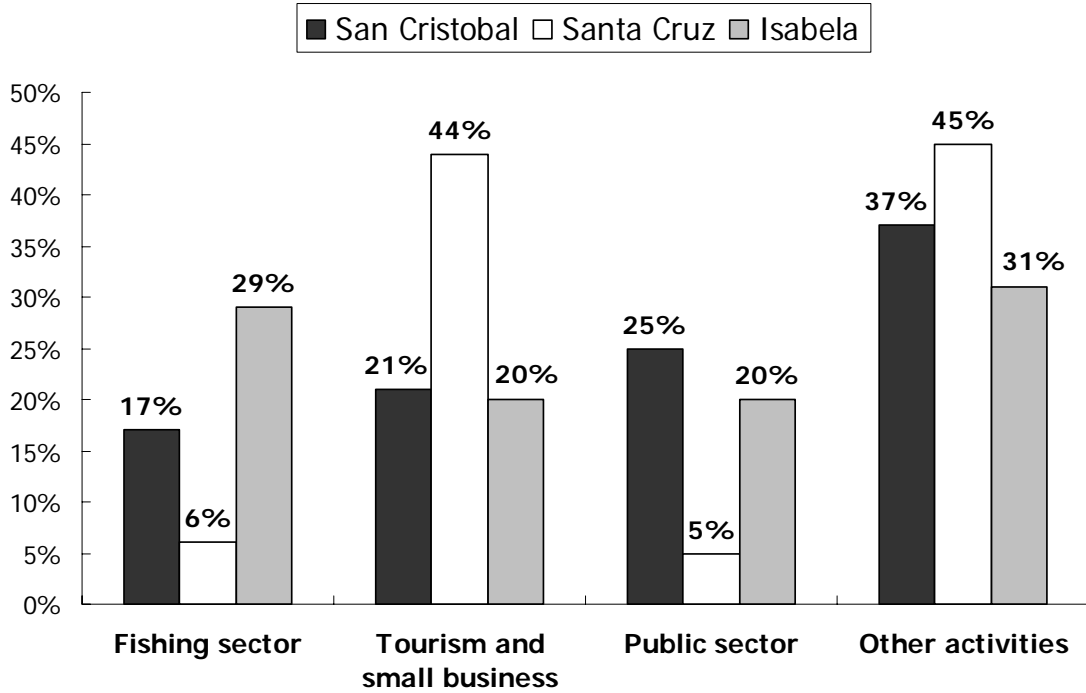
Number of registered fishing crafts per type and Island

Source: GNP reports and JICA Survey 2005



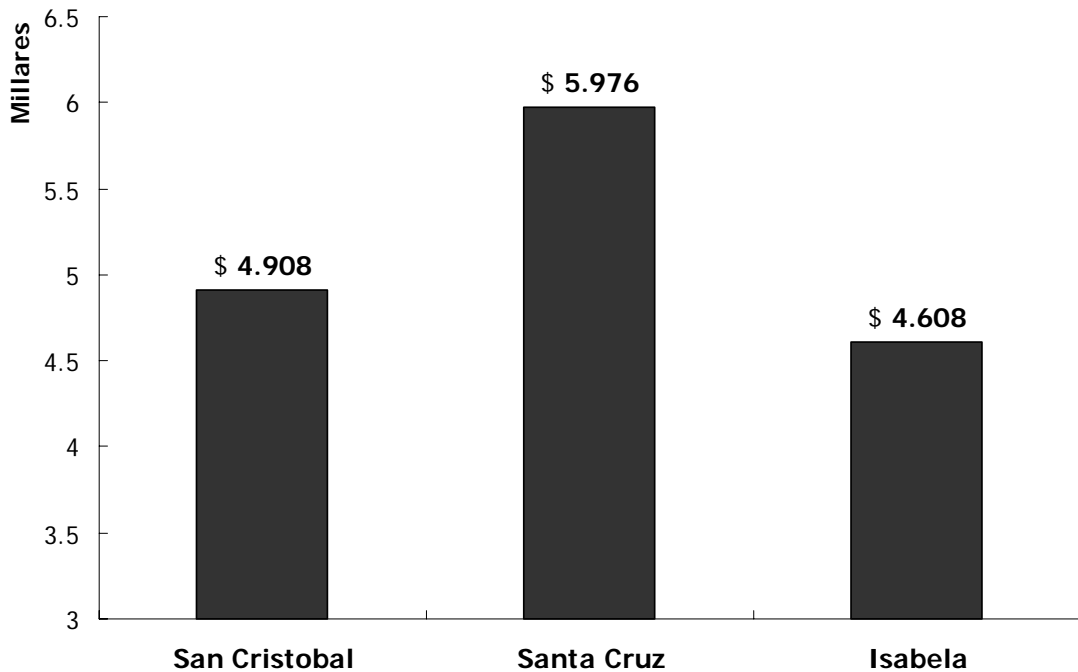
(Fig. 16)
Employments in Galapagos - Fishing Sector versus other activities

Source: Nature Foundation. Survey carried out in 2001.



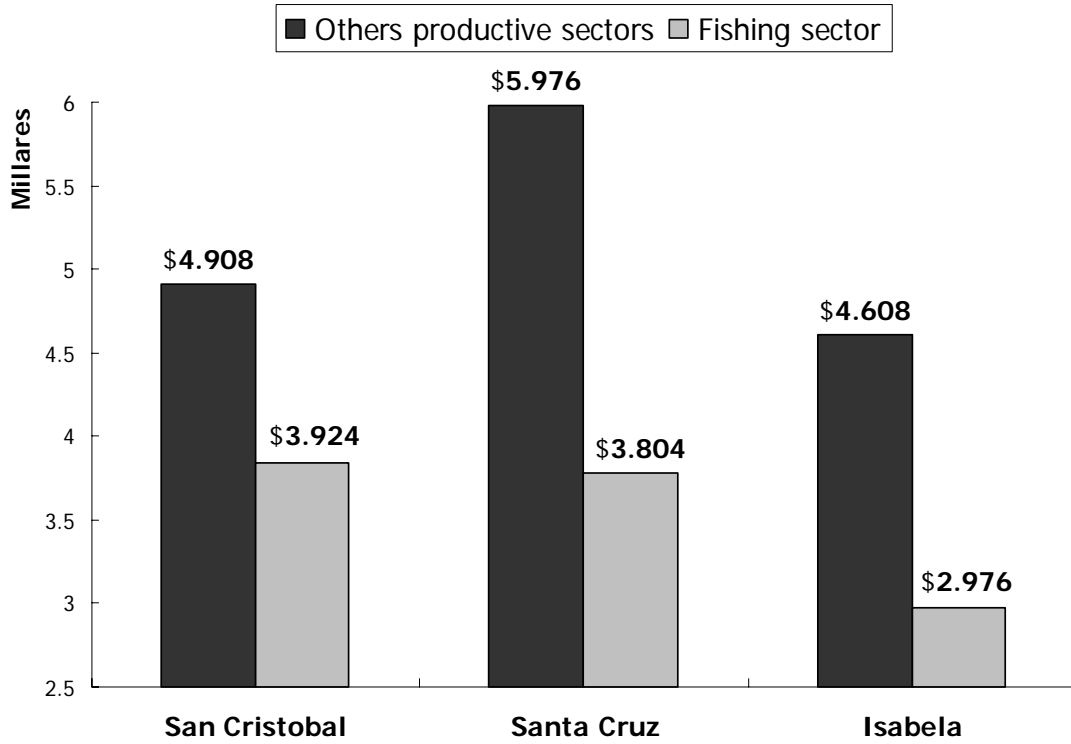
(Fig. 17)
Annual revenues per families in Galapagos in US dollars.
It includes all the productive sectors.

Source: Hardner & Gullison Associates, LLC. November 2004.



(Fig. 18)
Annual revenues per fishing families versus others families
(In US dollars)

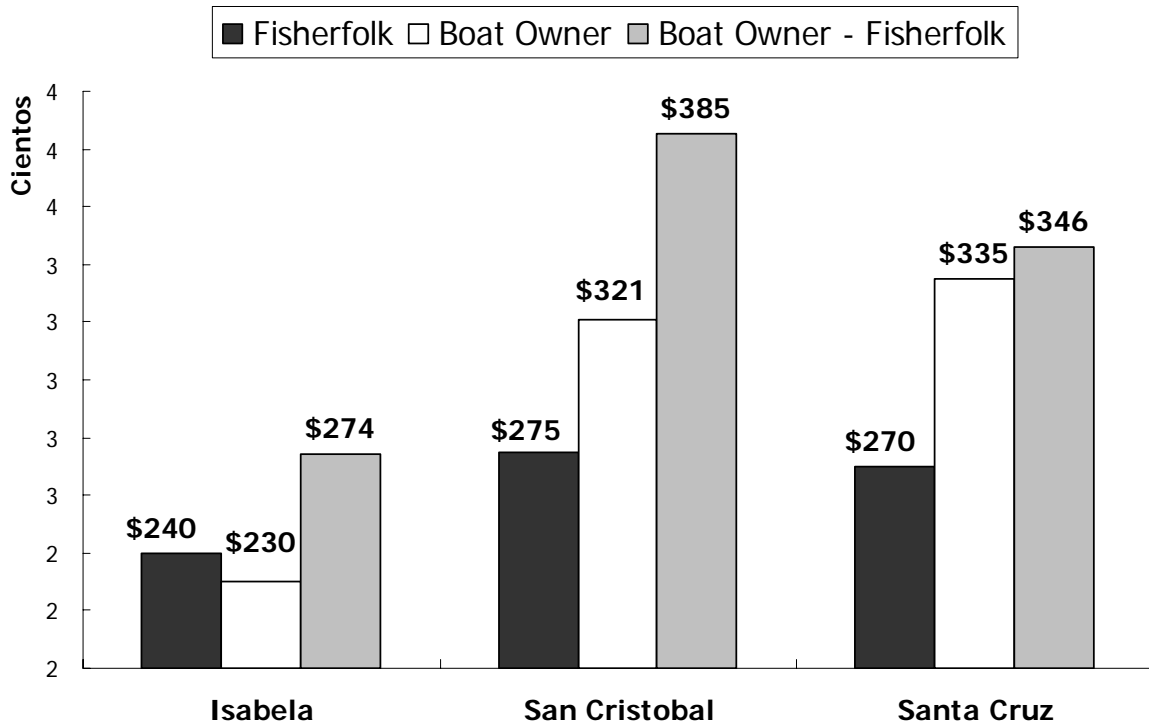
Source: JICA Survey 2005



(Fig. 19)

Monthly revenues of the fisherfolks per category and island (in US dollars)

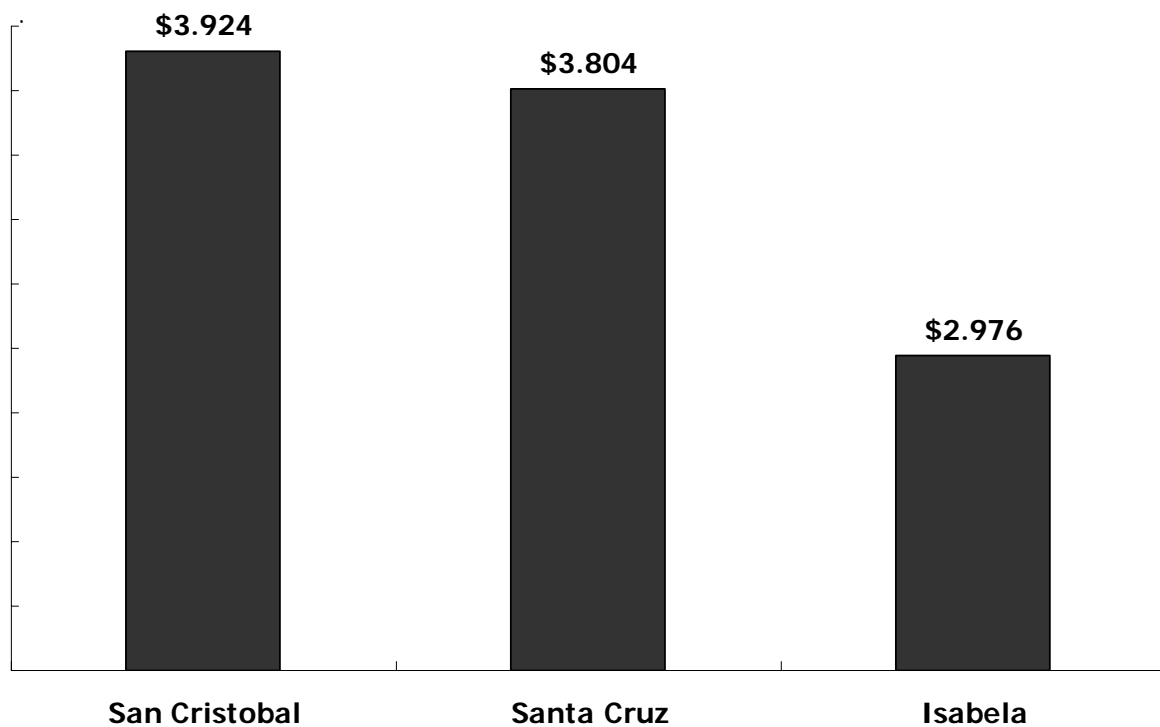
Source: JICA Survey 2005 – Opinion Polls / questions 12, 13



(Fig. 20)

Comparison of the annual revenues of the fisherfolks per island

Source: JICA Survey 2005 – Opinion Polls / questions 12, 13



Chapter 4

The Galapagos Artisanal Fishing Community attracts the interest of many environmental organizations.

Brief summary about the available studies concerning the Galapagos Fishing Community.

In recent years, different environmentalist organisms have done many investigations about the socioeconomic situation of the Galapagos Fishing Community; many of them have provided support in the development of institutional and legal frameworks with the purpose of improving fisheries management within the Galapagos Islands.

Many conservation organisms such as the "World Wildlife Fund for Nature" (WWF), "Wild Aid", "The Nature Conservancy", "Fundación Natura", "FUNDAR", "Charles Darwin Foundation" (CDF), besides some International Cooperation Agencies such as "UNDP", "BID", "USAID" and the "Spain International Cooperation Agency" (AECI) through its "ARAUCARIA" project have shown interest in strengthening the Galapagos Fishing Community.

The Galapagos National Park (GNP) has been the counterpart government organism for all the implemented projects in favor of the fishing sector; evidently, the GNP

demands perception studies or accurate surveys before starting any project in the Galapagos Islands. Regarding the Galapagos Fishing Community, there exist more than 50 studies about the socioeconomic situation of this important sector of the Galapagos Marine Reserve users.

The WWF, for example, has convened different studies about Galapagos fishing community with the purpose of identifying concrete action to raise awareness of the potential for a market-based approach to responsible fisheries management and sustainable fishing practices.

One of the WWF surveys is **“The Study of Artisanal Fisheries in the Galapagos Islands, Republic of Ecuador”**. In support of other on-going activities, the WWF undertook assessment of the status of artisanal fisheries in Galapagos, with the aim of providing basic information for future workshops and help participants to draw informed conclusions regarding the requirements for important certifications such as the “Sustainable Fisheries Certification Standard” developed by the UK-based Marine Stewardship Council (MSC).

About the “Sustainable Fisheries Certification Standard”, the GNP indicates that the process of certification would identify those areas in the management system where corrective actions are required. This would in turn stimulate greater monitoring, control, and enforcement of regulations and consequently conservation of stocks.

The WWF survey says that fishing related employment varies considerably between the islands. Isabela is the most dependent on fishing activities with 32.7% of the economically active population involved in fishing. An average total of 8.2% of the economically active population depend directly on fishing activities. There are 3 to 4 jobs created in fisheries related activities ashore for each artisanal fisherman.⁸

According to the study, an important seasonal activity for the Galapagos fishing community is the production of dry-salted fish for consumption during Easter. Dry-salted fish merchants are residents of Galapagos with contacts through which they sell product on the mainland. Merchants arrive in the islands from the mainland as Easter approaches to purchase dry-salted product. This activity is not formalized or regulated in any way; as such reliable data on volumes, prices and product destination are not available.

About the rock lobster fishery, developed since the early 1960s, the study says that this resource is in high demand within the islands and also on the mainland. Around 30,000 and 48,000 pounds of tails are exported annually, mostly to the USA. In general, intermediaries in rock lobster marketing are residents of Galapagos and work with companies from the mainland. They receive a sales commission or a profit agreed upon unitary sale. In the majority of cases, the company provides the intermediary with working capital to prepare the boats for fishing (finance for maintenance, repairs, required equipment, meals, fuel and extras) and to purchase

⁸ “Study of Artisanal Fisheries in the Galapagos Islands, Republic of Ecuador” - WWF.

the product once it arrives in port. In addition, the company provides the materials for packing and shipping.

The study concludes remarking that although production from Galapagos fisheries are relatively small, *certification would be assured of gaining world-wide attention*. At the national level, certification would underpin the effectiveness of the participatory management process already established in Galapagos.

Most of the studies about the Galapagos Fishing Community remark in the fact that the artisanal fisheries in the GMR are elementary to the socio-economic fabric of the island communities and constitute a significant source of seafood for both the Galapagos Islands and the mainland. We must emphasize that Tourism is the major economic activity of the islands. Consumption of seafood sourced from local fisheries and from the mainland is greatest during the tourist high seasons which are from December to March and from July to August. "More than 70% of Galapagos fish production is purchased locally. More than 60% of the seafood imported from the mainland is consumed on tourist boats. Seafood imported from the mainland comprises 99% cultured shrimp, all of which is consumed on tour boats. Less than 20% of the rock lobster produced in Galapagos is consumed by tour boats."⁹

An important aspect of the WWF study is the fact that a primary concern for artisanal fishermen is to increase their involvement and control of post-harvest handling and marketing. Ownership of cold storage, handling and distribution facilities is currently precluded due to lack of organization and access to credit. The WWF in the "Study of Artisanal Fisheries in the Galapagos Islands" recommends that *"If tourist boats undertook to purchase fish certified product only from artisanal fishermen, an internal market could develop with a weekly demand of around 4,330 kg (9,530 pounds) of fresh refrigerated fish"*. On the other hand, a fisheries certification would send a strong signal to financial institutions that artisanal fisheries in Galapagos present viable investment opportunities. This in turn could lead to fishermen themselves becoming able to gain control of post-harvest matters from the hands of the few existent merchants who currently control infrastructure, marketing and ultimately, prices.

One of the recently studies is **"The Beliefs & Perceptions of Fishermen Regarding Management Actions, Regulations, and the Protection of the Galapagos Marine Reserve, Ecuador"**, carried out in 2002 by Ryan Finchum a volunteer who worked for the Charles Darwin Research Station (CDRS) which is known now as Charles Darwin Foundation (CDF).

The results of this study are very positive in terms of the future outlook for the islands. It provides some general recommendations, if implemented, should help reduce future conflict situations between fishing community and GMR stakeholders.

⁹ "Study of Artisanal Fisheries in the Galapagos Islands, Republic of Ecuador" - WWF. Pg. 2.

First, it is suggested that a meetings be held with key stakeholders to discuss and analyze the similarities that exist between all stakeholders so that the groundwork can be laid for a positive future working relationship. In addition, this workshop could focus on the steps that have been taken in the past to ensure the long-term protection and use of the Marine Reserve. After explaining the dual nature of fishermen beliefs about the Marine Reserve (protection and use), the issues of zoning, management actions, fishing seasons, quotas, and their importance may hold more significance.

Additionally to this suggestion, the study recommends that Park managers should deal with the following issues of concern and their subsequent goals. These goals are long-term goals that will probably only be successful through generational change; however, they represent issues that if left unchanged, will continue to compromise overall conservation efforts.

Each of the two issues is presented below with practical suggestions for improvement.

- A) A social environment that is dominated by extreme members of the fishing community who in effect pressure others to support their actions when in fact, much of the fishing community may not be in agreement with those actions.

Goal: Create an environment where members of the fishing community feel the liberty to express their support for conservation and are able to decline participation in strikes and other actions if they so choose.

Develop a program to support and encourage fishermen that do not participate in conflicts.

Improve education and interpretation programs that help fishermen understand the need for and benefits of sustainable management

Increase support for conservation-based community programs that include other members of the fishing community. For example, the Gender and Biodiversity Project, "Jóvenes por el mundo" high school club, and the scholarship and internship program for youth.

Give consideration to the establishment of a temporary sport fishing cooperative as an alternative to extractive fishing. Of course this approach needs to be carefully considered so that this activity is actually replacing extractive activity with sustainable activity instead of adding additional pressure to the Marine Reserve.

- ⇒ B) An overall lack of trust and institutional satisfaction by fishermen for those entities working towards the sustainable management and conservation of the Marine Reserve.

Goal: Improve institutional trust and satisfaction by fishermen for entities working towards the sustainable management and conservation of the Marine Reserve.

Implement an evaluation of the Participatory Management Process in order to improve its utility for all stakeholders, with special emphasis being placed on the fishermen.

Develop a method of continual reporting back to fishermen directly (in addition to fishing cooperatives) on management actions, decisions, and likely future regulations. Park management should carry this out so that there is no question as to whether or not the fishing community representatives are actually relaying the appropriate information to the fishermen.

Study the method of communication used by Charles Darwin Research Station monitoring personnel on San Cristóbal Island to see if it can be applied on other islands.

Address valid fishermen issues of concern about internal park corruption. A system where fishermen can anonymously voice concerns about specific occurrences to the Participatory Management Board (or other entity) may help build a sense of responsibility for reporting illegal or corrupt actions. A similarly anonymous reporting system could eventually be instated to deal with illegal or corrupt fishermen and fishing cooperative behaviors. Knowing that concerns are being heard and dealt with in an appropriate way may help start to increase fishermen's institutional trust for authority.

Something relevant of this study is the synopsis of Islands differences. The investigation says that due to the relatively isolated nature of the islands in Galapagos, the GNP has established regional offices on San Cristobal and Isabela Islands, with its headquarters based on Santa Cruz Island. Population dynamics vary on the different islands. San Cristobal and Isabela, for example, are predominantly fishing communities, while Santa Cruz is home to the headquarters for the National Park Service, the Charles Darwin Research Station, and most tourist activity.

In that regard, it is important for managers to understand some of the differences in beliefs and opinions between fishermen on those islands. The study presents key differences for each island.

San Cristobal

- ⇒ Fishermen from San Cristobal hold the second strongest protection belief (next to Santa Cruz) and hold the weakest use belief towards the Marine Reserve.
- ⇒ Fishermen from San Cristobal favor the highest level of punitive action when Park officials are dealing with illegal fishing and shark harvest.
- ⇒ When indicating management actions in response to illegal shark harvest, only 4% of San Cristobal fishermen feel that the Park officials should do nothing and 29% feel fishermen should lose their permit for the year.
- ⇒ Fishermen are more likely to comply with future regulatory action taken by Park officials in order to sustain fisheries than Isabela, but less likely to comply than Santa Cruz.
- ⇒ When stakeholder communication was rated by San Cristóbal fishermen,

the CDRS monitoring personnel received the highest rating (68% good), followed by fishermen (49% good), and fishing cooperatives (33% good). The lowest rating was given to tourism operators (12% good) and Park directors (13% good).

- ⇒ When analyzing the types of work fishermen want their kids to pursue in San Cristobal, principle responses included tourism (62%), fishing (59%), and business (54%). In addition, 39% indicated the Research Station as a possible place of work. Conversely, when asked what areas of work kids should not pursue, responses included National Park (70%), Military (64%), and agriculture (49%). In addition, 24% indicated that kids should not work at the Research Station and 23% indicated that kids should not work as fishermen.

Isabela

- ⇒ Fishermen from Isabela hold the weakest protection belief and the strongest use belief towards the Marine Reserve.
- ⇒ Fishermen from Isabela favor the lowest levels of punitive action for each of the acceptability measures. However, of the three measures, fishermen there accept the highest level of action for dealing with aggressive fishermen behavior.
- ⇒ When indicating management actions in response to illegal shark harvest, 41% of Isabela fishermen feel that the Park officials should do nothing and only 11% feel fishermen should lose their permit for the year.
- ⇒ Fishermen from Isabela are the least likely to comply with future regulatory action taken by Park officials in order to sustain fisheries.
- ⇒ When Isabela fishermen rated stakeholder communication, the fishermen received the highest rating (92% good), followed by fishing cooperatives (76% good), and the CDRS monitoring personnel (23% good). The lowest rating was given to tourism operators (7% good) and CDRS directors (16% good).
- ⇒ When analyzing the types of work fishermen want their kids to pursue in Isabela, principle responses included fishing (59%), business (47%), and tourism (46%). Only 8% indicated the National Park and 5% indicated the Research Station as possible places of work. Conversely, when asked what areas of work kids should not pursue, responses included National Park (63%), Research Station (53%), and public employee (43%). In addition, 25% indicated that kids should not be fishermen.

Santa Cruz

- ⇒ Fishermen from Santa Cruz hold the strongest protection belief towards the Marine Reserve. Their use belief is also strong, second (but statistically equal) to Isabela
- ⇒ Across the three measures of management acceptability, Santa Cruz favors more punitive measures than Isabela, but less punitive measures than San Cristobal.
- ⇒ When indicating management actions in response to illegal shark harvest,

- 30% of Santa Cruz fishermen feel that the Park officials should do nothing and only 11% feel fishermen should lose their permit for the year.
- ⇒ Fishermen from Santa Cruz are most likely to comply with future regulatory action taken by Park officials in order to sustain fisheries.
 - ⇒ When Santa Cruz fishermen rated stakeholder communication, fishermen received the highest rating (86% good). This was followed by fishing cooperatives (40% good). The rest of the stakeholders received a low rating with the lowest going to Park directors, Park rangers, and CDRS directors (< 2% good).
 - ⇒ When analyzing the types of work fishermen want their kids to pursue in Santa Cruz, principle responses included public employee (58%), fishing (50%), and military (46%). Only 8% indicated the National Park and 11% indicated the Research Station as possible places of work. Conversely, when asked what areas of work kids should not pursue, responses included National Park (83%), Research Station (79%), and fishing (47%).

Finally, "The Beliefs & Perceptions of Fishermen Regarding Management Actions, Regulations, and the Protection of the Galapagos Marine Reserve, Ecuador" study emphasizes that in order to contribute to the reduction of conflict over regulations and improve the process of participatory management, more information about and from fishermen seems to be required. It recommends examining the relationship between basic beliefs, acceptability, and behavioral intentions of the Galapagos Fishing Community. Additionally, the study indicates that information was solicited in relation to satisfaction, communication, fisheries involvement, future concerns, and general demographics.

In 1996, Mac Farland, C. and M. Cifuentes of the American Association for the Advancement of Science, Washington, D.C. carried out a study in Galapagos named **"Biodiversity Conservation and Human Population impacts in the Galapagos Islands, Ecuador"**. The study presents an interesting summary of Institutional Management Problems.

In part, this survey says that Galapagos institutions, at all levels (national, regional and local), do not have the capacity to absorb the demand for services, nor to provide adequate advisory, planning and management guidance and leadership for local development. Municipalities are not capable of providing adequate potable water, electricity, sewage, solid waste and land use/zoning services, nor to produce and enforce proper urbanization plans and policies.

National and regional institutions have failed to accomplish their objectives in Galapagos because of lack of clear development and conservation policies, deficient technical capacity and, in some cases, lack of funding. The Galapagos National Park does not have adequate capacity to patrol and control the GNP nor the GMRR, in order to avoid problems of increasing pressures of biodiversity and natural resources exploitation. The CDF and its research station do not have adequate enough programs, staffing, and funding to address the full range of fundamental questions related to biodiversity conservation and natural resources limits of use, nor to fully advise local, regional and national agencies and organizations on those aspects.

This study also emphasizes that the rapid population growth rate, heavy influx of migrants, lack of understanding of the uniqueness of the archipelago by most residents, absence of sufficiently clear governmental policies and their inadequate application, and weak institutional capacity of government agencies at all levels are producing a slow but steady abandonment of the rule of law in Galapagos.

A general atmosphere of disrespect for authority is growing in the islands, due to the actions of (apparently) small numbers of persons. Those attitudes will continue to spread easily and inexorably, if the situation does not change, in which few offenders are ever found and in most cases they have never suffered any penalties even when caught. No solid, consistent legal and other follow-up actions to punish offenders occur in most cases. Indirect and direct evidence and rumors indicate that corruption may exist at many levels in various agencies.

The GNPS and other authorities in Galapagos badly need increased human resources, training, and financial and other support in order to be able to more effectively protect the islands and the GMR through a combination of patrolling and other physical and moral presence, full legal processing of offenders, widespread education campaigns, and similar actions.

The "Human Population impacts in the Galapagos Islands Study" presents five concrete recommendations, according to this survey; these research priorities are the most urgent requiring attention.

- ⇒ A quantitative model of the human system in relation to the natural system in Galapagos is badly needed in order to establish a baseline, permit quantification of trends and try to develop predictive scenarios for the future. This must include components to measure the direct and indirect (e.g. via introduced species) impacts of humans on the biodiversity and natural systems of Galapagos and it should involve local communities and other key stakeholders in generating scenarios as a basis for making or supporting informed choices in the future, based upon those alternatives.
- ⇒ Long-term economic and social development projections based upon different policy options, e.g. nature tourism versus export fisheries.
- ⇒ Can local fisheries be wed to nature tourism and local village markets and be sustainable? Studies on the biology, ecology, fisheries management, marketing and related aspects are needed.
- ⇒ Immigration dynamics and potential policies and their impacts, including controls, incentives, institutional reforms, etc.
- ⇒ Design, operations and policies for nature tourism in the Galapagos Marine Reserve, in order to ensure its ecological, economic and social sustainability. There are many other areas requiring research, but these are some of the most urgent requiring attention.

Jorge Anhalzer, late President of the Charles Darwin Foundation, who perished in a tragic air crash on 20 April 1998, near Bogotá, Colombia, on their way home to

Ecuador after a Symposium, wrote a very interesting document named **“The social, economic, and legal aspects of Galapagos conservation”**.

Anhalzer emphasized in his study the importance of dedicating time to work with the community in education and communication activities; he also indicated that corruption and political influences are very negative for the conservations of the Galapagos Islands and its Marine Reserve.

- ⇒ It is important to continuously keep the community aware and informed in order to prevent future conflicts between fishing community and GMR managers, he said “Those of you who were in Galapagos in November [1997] could hardly believe that fishermen were asking us to intervene on their behalf - the very same people who were throwing rocks at us a year before, and were threatening to burn down the station! Our challenge now is to prevent that happening again, by continuously keeping the community aware and informed and so pre-empting the appearance of populist politicians who can do an incredible amount of harm in a very short time”.
- ⇒ It is very imperative to dedicate time to education. Students in Galapagos are unaware of what makes the place where they live unique, and what needs to be done to conserve the habitats and ecosystems. “Education is probably the single most important part of our job”. It becomes even more so following introduction of the new law that makes it more difficult to bring in professionals from outside. People in Galapagos must learn to love their habitat. This understanding, more than any law, will facilitate our task as conservationists. But bringing it about requires a lot more than good intentions. It needs top-notch, motivated people - and, of course, a good deal of money.”
- ⇒ In a country where institutions are weak as in the case of Ecuador, corruption and political influences are high and a permanent fact of life that affects not only in the mainland but also in the Galapagos Islands, for that reason “*accountability*” is the key word for a good management of the Galapagos Islands.
- ⇒ It is imperative to work the Galapagos communities to make them aware of the risks that negative political actions can have on the ecosystem. “People who appreciate what they have will be the best defenders of their habitat.”

In September 2004, the WWF published the **“Hope for fisherman in the Galapagos Islands”** survey.

The study mainly presents two recommendations:

- ⇒ To promote within Galapagos Fishing Community *the regular interchanging of others fishing Cooperatives good management experiences*. The information emphasizes the importance of showing to the Galapagos Fishing Community other fishing cooperatives excellent management experiences. “There exist many benefits of the experiences interchange, not only for fishermen but also for authorities in charge of the management

of the GMR” indicates the WWF. The study refers to the experience of representatives from the Baja California federation of fishing cooperatives (FEDECOP by its Spanish acronym), who traveled to Galapagos to share their experiences with endangered marine resources and how to find conservation solutions for fisheries. They visited the Isabela and Santa Cruz Islands where they presented real cases of effective management in fishing. It was important for the Galapagos fisheries community to meet these fishing sector representatives because of the similarities between the two groups, for example the species fished, like lobster and sea cucumber, and geographical isolation.

The study recommends keeping doing the “management fishing experiences interchanging” especially to learn about the following issues:

- Fishing experiences
- Processing fish products
- Vigilance
- Commercialization
- Administration
- Other conservation efforts.

⇒ The study also recommends about Galapagos fisheries to obtain the certification by the Marine Stewardship Council (MSC). The Marine Stewardship Council (MSC) is an independent non-profit organisation that promotes responsible fishing practices. The MSC works to safeguard the world’s seafood supply by promoting the best environmental choice.

The MSC Standard is the only internationally recognized set of environmental principles for measuring fisheries to assess if they are well managed and sustainable. A well-managed and sustainable fishery protects the fish and the environment in which they live whilst allowing responsible use of the species that come from it. When a fishery is sustainable it means that target fish populations are at healthy levels, sometimes having recovered from being depleted in the past. A well-managed fishery will ensure that there is a future for the industry and all those who depend on the fisheries for their livelihoods.

Any fishery, regardless of its location or size, may apply to be independently assessed against the MSC Standard. Independent organizations, approved by the MSC to carry out the fishery assessment process, are known as certification bodies.

The three Principles of the MSC Standard are:

- ⇒ **Principle 1.** “The condition of the fish stocks”. This examines if there are enough fish to ensure that the fishery is sustainable.
- ⇒ **Principle 2.** “The impact of the fishery on the marine environment”. This examines the effect that fishing has on the

immediate marine environment including other non-target fish species, marine mammals and seabirds.

- ⇒ **Principle 3.** "The fishery management systems". This principle evaluates the rules and procedures that are in place, as well as how they are implemented, to maintain a sustainable fishery and to ensure that the impact on the marine environment is minimized.

Very important recommendations about Galapagos Fishing Community are provided by the **Communication and Education Departments of the Charles Darwin Foundation** (CDF). The CDF heavily emphasizes the need for education and conservation awareness. According to them, the following are key issues:

- ⇒ Work with local fishermen to help them organize and unify their cooperatives, to train them in product preparation, quality control, and marketing requirements and operations to guarantee appropriate supplies to the tourism industry, and to eliminate middlemen and buyers from the outside.
- ⇒ The international community must support Ecuador's efforts with major financial and technical cooperation support,... because such an area of national and international importance can not be expected to be financed solely by its sovereign, owner country.
- ⇒ Placing the management of the reserve under the authority of a single government agency and requiring the cooperation of other agencies to support and aid that single agency in the management and implementation of the reserve.
- ⇒ Strengthening that single agency with a specialized department or program aimed specifically to manage the Galapagos Marine Resources Reserve, which implies special new personnel with appropriate training and a specific, substantial budget.

They also indicate that the current economic crisis in Ecuador has caused a ripple effect into the Galapagos Islands. In order for the Galapagos to become a truly efficient group of islands with the best possible life for its people, its people must have stable jobs with long-term benefits. Fishing is one such area in need of reform. The only way a long-term solution can be planned is if fishermen recognize the strong need to conserve and limit their desire to over-fish.

Concretely speaking about the importance of education and communication inside the fishing sector the CDF says:

- ⇒ Education in the Galapagos is extremely important for a number of reasons. A strong fundamental education can encourage the natives on the island to explore their possibilities in life. With a solid education, they can seek jobs in a broad number of fields rather than sticking to the conventional jobs involving tourism and fishing that may harm the environment. Once the people understand the significance of preserving

the environment, they may take action to help reduce the harmful effects of civilization on the ecosystem.

- ⇒ It is also very important the Communications Dissemination Programs, awareness of the environmental situation in the Galapagos is a prerequisite to conservation. It is elemental to spread awareness through audiovisual and graphic elements that focus on educating the population about the ecosystem in which they live.

The document **“Primary Economic Sector Activities”** is a synopsis of several studies about the Galapagos fishing sector. The information in this study is based upon Andrade, 1995; Carrasco, Grenier, and Rodríguez, 1994; CDRS, 1995; Ecuador, Presidencia de la República, 1992; MacFarland, 1994; de Miras, Andrade, and Carranza, 1995b; Reck, 1986; and Reck and Rodríguez, 1978.

In summary, the “Primary Economic Sector Activities” emphasizes the followings aspects:

- ⇒ Fishing is the second more important activities in the Galapagos Islands. More than 500 families depend of this activity.
- ⇒ The most important sea resources for the Galapagos Fishing Community are lobster and sea cucumber. Practically, fishermen concentrate all their efforts on these two fisheries.
- ⇒ At present, fisheries in Galapagos are in a totally chaotic situation. The marine area of Galapagos is under assault from large international fishing vessels and modern ships from the Ecuadorian mainland who are fishing around the Galapagos in pelagic zones, and often inside the GMRR, this fishing is illegal.
- ⇒ With increased migration to Galapagos, interest from mainland Ecuadorian fishing companies and middlemen buyers has grown in terms of what resources could be extracted and sold on the international market. This speculation has been fueled by the existence of Asian markets for many of these products as well as capital from those countries.
- ⇒ The economic attraction to the middlemen buyers of the Galapagos sea products has decreased in recent years. In turn, the probability that other species besides lobster and sea cucumbers will become the new focus of massive export fisheries has increased. This reality represents a serious problem for the fishing sector.
- ⇒ A major social problem has been created in the Galapagos Islands: more than 800 poor fishermen now live in the islands, over four times the population of just a few years ago.
- ⇒ In addition, the study pointed out that Galapagos Fishing Community is becoming extremely concerned about the future. Only 3.6% of the population who participated in a survey think that the future will bring equal or better conditions and only if strict immigration controls are imposed by the authorities and especially if they found other alternatives. In fact, 66.4% are convinced that the future will bring ever worsening conditions to their communities Galapagos inhabitants are becoming extremely concerned about the future of their communities. Only 3.6% of

the population who participated in a survey think that the future will bring equal or better conditions and only if strict immigration controls are imposed by the authorities. In fact, 66.4% are convinced that the future will bring ever worsening conditions to the fishing community.

In 1995, **"The fishing communities in the Galapagos Province"** study was presented. This study presents some recommendations about fisheries in the GMR and some research priorities:

- ⇒ The artisanal fishing community should be tightly linked to the tourism industry, with regulations and incentives to ensure that the tourism industry stops importing seafood to the islands. The industry would then buy its seafood from local fishermen.
- ⇒ Banning fisheries must be accompanied by studies to determine if sustainable fisheries for "white fish" (bacalao and related Serranid species) and lobster caught by local fishermen for the tourism and local population markets would be feasible. How many fishermen would that action support, and what would be the regulations to ensure viability of the fishery? Since such fisheries would probably not support more than 100 to 200 fishermen, if that number, ways to retrain and reintroduce others into the tourism economy must be explored. Many others will have to simply return to the continent.
- ⇒ Working with local fishermen to help them organize and unify their cooperatives; to train them in product preparation, quality control, and marketing requirements and operations to guarantee appropriate supplies to the tourism industry; and to eliminate outside middlemen and buyers, and;

The study also presents many areas requiring research, but concerning to the fishing community, two issues are the most urgent ones that require immediate attention according to this survey:

Long-term economic and social development projections should be based upon different policy options, e.g., nature tourism versus export fisheries.

Can local fisheries be wed to nature tourism and local village markets and still be sustainable? Studies on the biology, ecology, fisheries management, marketing, and related aspects are needed.

In October 2004, Mr. Coello (staff of the Environmental Ministry) prepared a study about the Galapagos Fishing Community: **"Economic Alternatives for the Galapagos Artisanal Fishing Community"**. In this study, Coello identified 7 action lines that could be implemented as economic alternatives for the Galapagos fishing sector:

To optimize the sea cucumber fisheries.

To optimize the lobster fisheries.

To optimize the white fishing fisheries.

To implement the pelagic fish fisheries.

To develop the fishery of the "meón" (another sea cucumber specie).

To develop the fishery of the "erizo blanco" (white sea urchin)

To develop the cultivation of pearl oysters.

Learning from the experience of other's NGOs and Cooperation Agencies

For many years, the Galapagos Islands have attracted the attention of thousand of people from all the parts of the world. Not only tourists but also people and organization that are worry about the future of this Natural Heritage have come to this amazing Archipelago with the purpose of contributing to its conservation.

At least 15 national and international organizations and donors plus two International Embassies are at this moment developing actions if favor of the protection of the Galapagos ecosystems.

Since the creation of the Galapagos Marine Reserve, most of the different donors have strengthened the support of this protected area. All of them work in coordination with the GNP in order to become a partner in the challenge of promoting a sustainable development.

Different actions in favor of the Galapagos Fishing Community have been implemented by the donors; however, the representatives of these organizations recognize that it is not easy to work with the Fishing Sector mainly because there is a serious gap between the Conservation Sector and the Fishing Community.

Nevertheless, it is very wise to learn about their experience working with the Galapagos Fishing Community for several years in the case of some organizations and also it is very important to coordinate the work with the objective of not duplicating efforts.

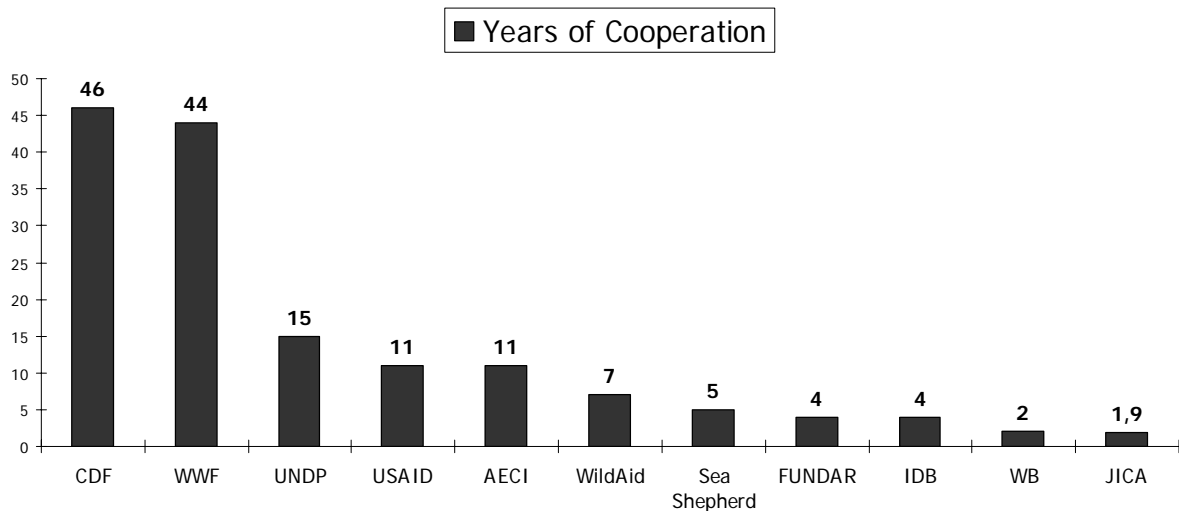
The projects based on the conservation of the GNP and GMR natural resources contribute to the integral solution of social, environmental, economic and institutional problems. These projects are supported by different national and international donors who main objective is to achieve a sustainable development in this natural heritage. The donors usually provide support in the following matters:

- Introduced species
- Reversion of environmental degradation processes
- Support to the Galapagos' productive sectors
- Improvement of populations' basic health conditions
- Construction of eco-tourism and interpretation infrastructures
- Community and institutional strengthening
- Management of the GNP and the GMR

(Tab. 1)
Number of collaboration years of the different donors and Cooperation Agencies

Source: JICA Survey

Donors supporting the conservation in Galapagos		Since	Years of cooperation
CDF	Charles Darwin Foundation	1959	46
WWF	World Wild Fund	1961	41
UNDP	United Nations Development Programme	1990	15
USAID	United States Agency for International Development	1994	11
AECI	Spain International Cooperation Agency	1994	11
WildAid	Wild Aid Organization	1998	7
Sea Shepherd	Sea Shepherd Conservation Society	2000	5
FUNDAR	Foundation for an alternative and responsible development of Galapagos	2001	4
IDB	International Development Bank	2001	4
WB	World Bank	2003	2
JICA	Japanese International Cooperation Agency	2004	1,9



Current actions performed by cooperation organizations regarding the conservation of the Galapagos Islands and its Marine Reserve

Charles Darwin Foundation (CDF)

For almost 50 years, the CDF has been the closest partner of the GNP in the challenge of protecting the Galapagos Islands and its Marine Reserve by performing scientific research, education and other complementary actions.

This foundation has developed long-term conservation strategies with the GNP and will continue to work with governmental and non-governmental partners to protect and restore this wonderful archipelago. One very important aspect of the CDF's work is to strengthen and consolidate the participatory management system for the Galapagos Marine Reserve, in partnership with other conservationists, scientists, educators, the fishing sector, the tourism sector, naturalist guides and the responsible government bodies. This foundation recognizes that the current problems are serious and have identified measures, which they believe to be critical to strengthening management and preventing conflict in the long-term, even though some of them may be unpopular with some groups in the short term.

World Wild Fund (WWF)

The WWF's ultimate goal is to build a future where people live in harmony with the nature. Since 1961 WWF has worked with local partners, including the GNP and the CDF, to preserve and protect the Galapagos Islands. To date, WWF has supported more than US \$3 million of conservation actions in the Galapagos including: research, policy, protected area management, species research and protection, and environmental education.

In one of the first grants in its history, WWF contributed funds for the construction of the Charles Darwin Research Station (CDRS). Three years later, WWF contributed funds to CDRS for the conversion of a fishing boat into the station's first research vessel, *Beagle II*, which was eventually followed by an upgraded vessel, *Beagle III*. WWF has continued to provide support for the maintenance and improvement of the CDRS, supporting construction of a visitor's center and lecture hall (Van Straelen Hall), expansion of the station's facilities, and installation of a computer system to facilitate data collection, research and administrative tasks.

Control of introduced animals and plants has been a focus for staff of the CDRS since it began to promote conservation in the Galapagos Islands. Along with efforts to eliminate the threats posed by introduced animals, WWF has sponsored captive breeding and repatriation programs and related conservation activities designed to lobster threatened species, including land iguanas, tortoises, marine turtles, sea and lagoon birds, and the dark rumped petrel.

Educational activities supported by WWF have included: providing teaching material for local schools; holding training courses for teachers; publishing informational materials directed towards the public, colonists and tourists; and providing a means for Ecuadorian university students to conduct research on conservation-related topics. WWF also provided funding for the establishment of a Galapagos information center in the Ecuadorian capital, Quito.

In 1987, WWF negotiated a major debt-for-nature swap to secure long-term funding for conservation in Ecuador. In 1998, WWF joined with other conservation organizations and the GNP to craft sweeping new legislation –the Galapagos Special Law- that establishes a 40-mile marine sanctuary free of industrial-scale fishing and ensures that tourist revenues support conservation. In 2001, WWF committed US \$295,000 to help with the aftermath of the Jessica oil spill.

In the same year 2001, the WWF signed an agreement with the government of Ecuador to transform the Galapagos Islands over the next 10 years into a model for 21st century clean energy use. The mission of this energy plan is to achieve, in 10 years, an Integrated Sustainable Energy System¹⁰ for the Galapagos using the best available technologies with a bridge to still better future technologies. Through an estimated investment of \$25 million, the ultimate aim of the initiative is to move the islands toward meeting their energy needs without the release of carbon dioxide.

Other conservation achievements include:

- Supporting, since 1987, the participatory process to define the marine management plan for the Marine Reserve.
- Working to promote sustainable fisheries, including fishery certification in the Galapagos.
- Developing a "Biodiversity Vision" for the islands with the CDF and 50 of the world's Galapagos scientists.

¹⁰ An integrated System means one that uses various forms of clean energy production –wind power, solar power, synthetic diesel- working together and substitutable for each other within one island, island by island in the archipelago. Integrated systems have lower cost, better efficiency and good economies of scale.

- Providing ongoing support to the GNP for the vigilant protection of the islands by securing donations from companies such as Motorola (US \$200.000 for communications equipment) and other companies (for boat repairs and overflight time to monitor illegal fishing and harvesting of sea cucumbers).
- Publishing the annual Galapagos Report with Fundacion Natura, which identifies and tracks key indicators of the environmental, social, economic, political and institutional aspects of the Galapagos Islands.

United Nations Development Programme (UNDP)

UNDP is the UN's global development network, an organization advocating for change and connecting countries to knowledge, experience and resources to help people build a better life. UNDP is on the ground in 166 countries, working with them on their own solutions to global and national development challenges. UNDP is focus on helping countries to build and share solutions to the challenges of Democratic Governance, Poverty Reduction, Crisis prevention and Recovery, Energy and Environment, HIV/AIDS. In each country office, the UNDP Resident Representative normally also serves as the Resident Coordinator of development activities for the United Nations system as a whole. Through such coordination, UNDP seeks to ensure the most effective use of UN and international aid resources.

In the Galapagos Islands, UNDP has been working for around 15 years, mainly supporting the conservation of terrestrial Galapagos National Park.

UNDP has 5 action lines performing in Galapagos:

Renewable Energies

UNDP is promoting a change from fossil fuel to solar and wind-powered energy.

Galapagos Oil Spill-Environmental Rehabilitation and Conservation

This programme aims to prevent and reduce oil spills, and promote human and environment stability in the islands. On 16 January 2001, the fuel tanker Jessica grounded on Wreck Bay, San Cristobal Island, Galapagos. The vessel carried approximately 240.000 gallons of fuel oil and by 29 January, around 180.000 gallons of fuel oil had escaped from the hull and dispersed to waters within the archipelago. After this ecological disaster, the GNP and all the environmental organizations were worry about how to respond in case another disaster occurs in the future. UNDP started a project of continues training preparation directed to the local institutions and stakeholders in order to implement a program of Mitigation actions for ecological disasters.

PROINGALA Project

UNDP's support to biodiversity conservation and sustainable use in Galapagos includes a project called "PROINGALA" funded by the Government of Italy to promote the integration of human development and biodiversity conservation in the National Institute of Galapagos. With this project UNDP pretends to fortify the GNP, INGALA, Municipalities and other stakeholders that take part in the management of the Galapagos Islands.

Galapagos 2020

This project is focus on looking for funds to attend the priority needs in Galapagos. UNDP pretends to work with the Environmental Ministry providing consultantship in matters regarding the Galapagos Islands management. One of the most important aspects of this project is the aim of guaranteeing a professional and responsible selection of the GNP Directors. It is called "Galapagos 2020" because UNDP wants to make real the vision that many have for the Galapagos Islands in 2020.

Conservation of the Galapagos endemic and native biodiversity

This project is composed by 6 outputs:

1) Inspection and Quarantine:

Strengthening of a coordinated inspection and quarantine system for Galapagos with the full participation of local institutions and with clearly defined procedures and detection techniques for invasive species.

2) Research, prioritization and adaptive management:

Prioritization of adaptive management mechanism investigations to develop and update a scientifically sound, well-programmed and coast-effective bio-invasion control programme.

3) Control and eradication:

Implementation of a series of eradication and control pilot projects to eliminate critical invasive species populations and to strengthen the technical and operational capacity of institutions with invasive species control responsibilities.

4) Financial Sustainability:

Long-term funding for invasive species control activities by the establishment of a fund and the strengthen of the funding capacity.

5) Education and Public Awareness:

Establishment of a community awareness and participation programme for bio-invasion control through the implementation of forums and the institutional and community actions in order to have an effective monitoring and control over the invasive species.

6) Regional Planning:

Support to the development of regional policies about the invasive species control.

Some of UNDP partners working are CDF, AECI, INGALA, GNP, CONELEC, ELECGALAPAGOS and the Government of Italy.

The United States Agency for International Development (USAID)

USAID is the principal U.S. agency to extend assistance to countries recovering from disaster, trying to escape poverty, and engaging in democratic reforms. USAID is an independent federal government agency that receives overall foreign policy guidance from the Secretary of State. USAID works in agriculture, democracy & governance, economic growth, the environment, education, health, global partnerships, and humanitarian assistance in more than 100 countries to provide a better future for all. In Galapagos, USAIDS is supporting the management and conservation of the Islands and the Marine Reserve.

According to USAID, growing populations are placing increasing pressure on the natural resources and many of these resources, once used, are not renewable. USAID takes an integrated approach to natural resources management.

Currently in the Galapagos Islands, since 1994, activities are being undertaken through the CDF in collaboration with the GNP. The goal is to promote the conservation of the Galapagos Marine Biological Reserve. Activities have been organized under two major components:

- 1) Applied Research
- 2) Capacity for Collaborative Management.

Other activities are also being carried out through the GNP for the management and re-establishment of the lagoons and wetlands of the southern areas of Isabela Island. Additionally, USAID support has been provided to the local population of Puerto Villamil and its surroundings for the development of local based ecotourism activities as a productive alternative to fishing. Furthermore, equipment has been purchased and training provided through the U.S. Department of Interior to enhance enforcement and monitoring activities in the Galapagos Marine Reserve. New program activities will also include conflict management.

Another high priority programme will be undertaken by USAID in this UNESCO world heritage site, the project will include technical assistance and training to further enhance local governance, implement the GMR zoning plan, and increase tourism contributions to conservation by providing alternatives to illegal and over-fishing.

In addition, USAID contributed to the establishment of a capital fund for the benefit of the Charles Darwin Foundation in the Galapagos Islands to guide the development of the sustainable, scientifically based, participatory management of the Galapagos ecosystem. USAID is also assisting the Ministry of the Environment to establish policies, strategies and legislation for sustainable forestry development and biodiversity conservation in Ecuador.

Spain International Cooperation Agency (AECI)

The Spain International Cooperation Agency started giving support to the Galapagos Islands in 1994. The AECI aims to strengthen the GNP in the challenge of protecting the terrestrial Galapagos National Park and its Marine Reserve. They pretend to reach their goal by promoting a sustainable management of the natural resources and by getting the participation of the local community.

During these years, the AECI has developed different support actions with the intention of promoting the conservation of the Islands, for example they financed the construction of the Interpretation Center of San Cristobal Island. This center is used as an educative tool to promote the conservation of the Galapagos Islands and the GMR among the Galapagos residents.

The AECI works in Galapagos through the "ARAUCARIA Project" with a budget of USD \$1.2 million. With this project, they have performed the following components:

Protection of the terrestrial GNP and the GMR. With this component Araucaria has strengthened the management actions performed by the GNP. The most important accomplished goal has been the creation of the "New Management

Plan for the Conservations of the GNP”, this is a management toll already approved by the Environmental Ministry. Besides, the AECI carries out regular coastal clean up activities with local fisherfolks and collaborates in the restoring of the high value natural zones.

Support to the productive sectors of the Galapagos Islands. With this component, AECI mainly pretends to support the activities that constitute the main sources: fishing, tourism and agriculture. Regarding the Fishing Community, AECI aims that the main fisheries were economically profitable and environmentally sustainable. They have two action lines concerning the Fishing Community.

a) Invigoration of the Fishing Community by technology transfer and permanent training.

b) Equipment of the “fishing storing centers” of San Cristobal, with the purpose of improving the “whitefish” commercialization.

Infrastructures, basic services and town planning.

Cultural Development Program. With this component, AECI carried out several cultural and artistic activities in order to promote the conservation of the Galapagos Islands through these activities.

At this moment, “Araucaria Project” is in the final phase of its execution, however the AECI is planning another phase of the project.

Inter-American Development Bank (IDB)

The Inter-American Development Bank started the support to the conservation of the Galapagos Islands and its Marine Reserve in June 2001 with the “Environmental Management Programme for the Galapagos Islands”. The main objective of the programme is to strengthen the reversion process of the environmental degradation of the Galapagos Islands. The total cost of the programme is US \$13 millions; the IDB provides a loan of US \$ 10.4 for this project and the rest of the money is provided by local counterparts. The project is strengthening the management programs and also is helping local residents, including the Galapagos Fishing Community. IDB has 4 macro activities:

To support the Management Plan for the Conservation of the GMR in the following matters:.

- 1) Administration of the natural resources use.
- 2) Control and marine security.
- 3) Communication and environmental education.
- 4) Investigation and monitoring.

To support the Inspection and Quarantine Programme
Coordination and institutional management

- 1) UCIGAL strengthening (Coordination Unit of the Galapagos Islands)
- 2) INGALA strengthening
- 3) GNP Direction Development
- 4) Municipal Development

Researches and emergency works concerning basic needs.

Regarding the Galapagos Fishing Community, IDB has concretely provided training about the following issues:

- 1) Cooperatives Management
- 2) Management of Fishing Storing Centers
- 3) Fishing skills development in the GMR

IDB has also provided some training to the GNP personnel who are working in the Marine Resources Department. IDB conducted a course about fishing register, monitoring and databases.

Regarding the studies and researches, IDB has performed the following studies:

- 1) Alternatives for the Artisanal Fishing Community (4 studies)
- 2) Lobster trade.
- 3) Proposal for the Storing Centers and artisanal fishing certifications
- 4) The Galapagos Fishing Community in the Tourism Sector

WildAid Organization (WildAid)

WildAid is a non-profit organization headquartered in San Francisco. They have been working in the Galapagos Islands since 1998 mainly supporting the conservation of the GMR. They have support the Galapagos Fishing Community especially with training and capacity building with the Fishing Cooperatives. They helped COPROPAG in the implementation of their "Fishing Storing Center". Besides they helped COPROPAG and COPAHISA with a communication plan, this support ended in August 2005. Since the beginning they have supported the Women's Groups with some funds and training in administration matters. However they have concentrated their efforts in "Pescado Azul". WildAid's mission is to decimate the illegal wildlife trade within our lifetimes. Unique among the world's challenges, they believe we can end the illegal wildlife trade within an immediate timeframe and realistic economic parameters. Their programs disrupt the trade at every level by reducing poaching, targeting illegal traders and smugglers, and drastically lowering consumer demand for endangered species parts and products.

ALIANZA (WWF, Fundacion Natura, WildAid, FFLA, USFQ, TRAFFIC, CDF, TNC, International Conservancy)

A team of 9 Galapagos donors was conformed with the intention of creating the "Project for the Conservation of the Galapagos Marine Reserve". This group of donors has been performing since August 2003 different actions in favor of the Galapagos Fishing Community, however at this moment they are undertaking at least 10 concrete activities:

To provide support in the implementation of the Fishing Storing Center for the Cooperative "COPESPROMAR". This activity includes training and the development of a marketing plan.

To provide support for starting the operation of the Fishing Storing Center of the Cooperative "COPESAN". This activity includes training, management advice and equipment.

To promote Ecotourism by fishermen. With this activity, ALIANZA pretends to promote the Artisanal fishing as a tourism experience.

To continue supporting the women's group "Pescado Azul" regarding marketing and business management.

To undertake several experiment projects about the open water fishing and Longlining in order to determine the possibility of this fishing arts.

To carry out the proposal for the "Sport Fishing Policies"

To support the Galapagos Fishing Community regarding business plans with the intention of helping the fisherfolks to get into the tourist activities.

To promote the fishing efforts decreasing by buying the rights to fish in order to encourage the change of activity.

To support women's groups in San Cristobal by buying a boat and adapting it as a souvenirs shop.

To create a rotary fund in order to provide loans to the fisherfolks who might need the credit.

Sea Shepherd Conservation Society

In March 1997, the GNP contacted the "Sea Shepherd Conservation Society" to express definite interest in the possibility of joint conservation patrols. The GNP was patrolling the waters of the GMR with the boats *Guadalupe River* and the *Belle Vie*, and they felt "the addition of the *Sirenian*" can be extremely helpful for the conservation of the Islands." Finally in August 2000, the *Sirenian* was ready for patrolling the GMR, and recently in 2005 this patrol ship was definitely donated to the GNP. However the "Sea Shepherd Conservation Society" with its ships and crewmembers are in permanent patrol to help protect the precious marine ecosystems. According to them, heavy damage is being done by longliners going after billfish and sharks.

World Bank (WB)

In the entire world, the WB aims to work for a world free of poverty. They also support the conservation of protected areas which is the case in the Galapagos Islands. Since 2001, the WB has been supporting the GNP in the challenge of protecting the native and endemic species of the damage and impact provoked by the presence of invasive species. Through the "Global Environmental Facilities" Project (GEF), the WB designated US\$ 18.5 million to complement a \$43.33 million Project that aims the implementation of a series of eradication and control actions to eliminate critical invasive species.

The United Kingdom (UK)

The UK is currently involved in a number of projects aimed at preserving the biodiversity of the Galapagos Islands. Since 1993 the British Government has approved funding 24 separate environmental projects. British embassy representatives in Ecuador also take part in regular Galapagos round table meetings

to discuss issues relating to the environmental management of the islands. These are attended by major Galapagos donors and local government officials. The embassy also maintains close contact with the new British Director of the Charles Darwin Foundation.

Foundation for an alternative and responsible development of Galapagos (FUNDAR)

This foundation started its support in 2002 with a project directed to the agricultural sector of San Cristobal Island. At the same time they started working with the Fishing Community mainly in terms of training and capacity building. They have conducted several workshops, forums and training seminars regarding cooperatives management, strategic planning, fisheries management, alternative activities, etc. FUNDAR has the credibility of the Fishing Sector and for this reason this foundation has been a good instrument to reach the basis.

Main complementary actions that should be without delay implemented according to other donors

Join efforts in order to strengthen and consolidate the participatory management system for the GMR, in partnership with other conservationists, scientists, educators, the fishing sector, the tourism sector, naturalist guides and the responsible government bodies. (CDF, AECI, FUNDAR)

For both ecological and economic reasons, the GNP and other stakeholders should promote the declaration of the Galapagos Marine Reserve as a sanctuary for cartilaginous fish i.e. sharks and rays. (CDF)

Provide practical support for the strengthening of stakeholder institutions concerned in the participatory management system. This has hitherto focused on training and institutional strengthening for the fisheries cooperatives. (CDF, WWF, AECI)

Strengthen the GNP and CDF programs of marine education and awareness. These programs should be expanded, especially at the national level. (GNP, CDF, IDB)

Become active and vocal, always peacefully, in defense of the islands and the conservation institutions, especially during conflicts among GMR users. It would be important to form a united front for the defense of the Galapagos Islands and its Marine Reserve. (CDF, AECI, GNP, IDB)

The GMR is one of the most important marine protected areas on the planet and should be recognized as such locally, nationally and internationally, in both word and deed. Communication campaigns should be implemented in order to reach this goal. (GNP, CDF, WildAid, NEGF).

Provide technical attendance and training regarding *“evaluation of fishing resources”* directed to youth professionals who are fisherfolks sons. (ARAUCARIA, GNP).

Provide training regarding the state and functionality of the Galapagos fishing fleet. (AECI, NEGF).

Provide training regarding marine and social security systems as the sustenance of the harmonic development of the Fishing Community. (ARAUCARIA).

Provide training regarding prosecution and quality standards in the “Fishing Storing Centers”. Once the training is received, it will be important to help the sector to implement the quality standards. (ARAUCARIA).

Provide training regarding administration and management of the Fishing Cooperatives and conflicts management. Workshops, forums and permanent visits to the sector should be part of the strategy of strengthening the Fishing Community. (FUNDAR, IDB)

Strengthen the marketing strategies of the “Fishing Storing Centers”. (ARAUCARIA).

Provide training regarding the improvement of the allowed current fishing arts. (ARAUCARIA, IDB).

Support the internal and external communication of the Fishing Cooperatives and at the same time to implement communication plans for the Fishing Community having the basis of the sector as the main target objective. (WildAid, AECI)

Strengthen the administrative and management system of the Galapagos Fishing Cooperatives and promote the formation of new leaders. (ARAUCARIA)

To coordinate the different donors’ activities with the intension of not duplicating efforts and actions performed in favor of the conservation. (WildAid, AECI, UNDP, WWF, NGF, IDB, CDF).

A very important action proposed by UNDP is “Stopping the ballast water stowaways”. Marine species are being carried around the world in ship’s ballast water. When discharged into new environment, they may become invasive and severely disrupt the native ecology, impact economic activities such as fisheries and cause disease and even death in humans. (UNDP)

To support the implementation of the Fishing Storing Centers especially in Isabela Island. By doing this, the Fishing Community will have another fishery alternative (whitefish fishery), consequently the lobster and sea cucumber fisheries could have a break. (IDB)

To achieve the goal of getting an added value for the Galapagos artisanal fishing. Besides it is important to provide training to the Fishing Community about other productive activities. (IDB).

To support the monitoring program for the fisheries in 2006. The WWF has been supporting the monitoring program for the last two years but they have no budget for 2006. They are encouraging other donors to support this program; the year cost is US \$100.000. (WWF)

Priorities for future researches

Fisheries monitoring. Continue the fisheries catch monitoring, database development, data analysis, and training, that was started in early 1997.

Monitor populations of sea cucumbers. Make preliminary observations related to other resource use issues, such as the by-catch problem and the over-exploitation of lobsters. Assist the GNP and JMP to decide if and when to have a further season of legal sea cucumber harvesting and to plan and implement all the necessary prior actions, training, licensing, education, etc.

Research, trials, and training of fisherfolks, to minimize the by-catch problem. Improve current recording by fisherfolks of the incidence of by-catch by the artisanal fleet of Galapagos, and verify it with direct field observations. Monitor the effects of by-catch on vulnerable species. Develop mitigation procedures, including improved fishing techniques for reduction of by-catch, drawing on worldwide experience. Provide education and training to assist local fisherfolks to implement the measures.

Find out about experience elsewhere in shark conservation. Develop a monitoring system for shark populations, including data collection by marine naturalist guides. Estimate shark losses through by-catch and illegal fishing. Advise and assist the introduction of a shark conservation plan, within the framework of the management plan.

Investigate the diversity and distribution of marine and coastal flora and fauna, in order to guide zoning and conservation priorities. The studies will map the distribution of various habitat types (rocky reef, corals, soft bottom, etc.) and the associated flora and fauna, with particular emphasis on benthic fauna.

Undertake research to guide the conservation of endemic coastal and marine species affected by some combination of fishing, tourism, introduced alien species, and "El Niño". Targets for study are the albatross, cormorant, penguin, and marine iguana, plus selected invertebrates and macroalgae.

Identify and monitor ecological indicators in distinct management zones of the GMR, in order to study trends over time and responses to different management regimes.

Undertake the monitoring of the marine, physical, and chemical environmental parameters around the archipelago.

Undertake an investigation about the ballast water stowaways. In ships, ballast is used to maintain balance, stability and structural integrity, especially when the ship is empty of cargo. Modern ships use water as ballast. A problem may arise when ballast water taken on by ship contains unwanted marine organisms.

Regional Planning regarding Galapagos productive activities, specifically regarding the Galapagos Fishing Community. This research must be done with the INGALA.

On the other hand, the different donors and NGOs agree mainly in three actions to avoid with the Fishing Community.

Do not buy the fishing rights to any fisherfolk without offering new alternatives and training about them.

Do not confer to the fisherfolks new tourism rights or authorizations without having the security about their operation capacity.

Do not concentrate in the work with the fishing leaders because these ones have no the credibility of the basis and are usually changed very fast. Instead, any project to be implemented should be discussed directly with the basis of the cooperatives.

Chapter 5

Fisheries and Fishing Communities in the Galapagos Islands

History of the Industrial Fisheries in Galapagos waters

The fishing activities started in the Galapagos Islands at the beginning of the 19th Century with the whales and fur seals hunting. In 1832, the Galapagos marine resources started to be captured with rudimentary methods during the colonization of the Islands.

The more experienced fishermen started to go through the sea to fish the resources of their preference and little by little, fishing became the principal source of life and the full-time work for some fishers. However, for that time, fishing crafts did not have engines and for that reason, fishermen had to salt and dry the fish in order to preserve the product¹¹.

Due the time, the industrial fishing appeared in Galapagos, this type of activity actually has existed for a number of decades carried out by both national and international industrial fleets. Ships from Japan, USA, Panama and Costa Rica primarily operated in Galapagos waters mainly in search of tuna.

¹¹ "Management Plan for the Conservation and Sustainable use of the Galapagos Marine Reserve" published on April 1999.

The presence of these fishing ships during the 1940s and 1950s represented for the colonists a way of frequent communication, supply, trade and commerce. Nonetheless these industrial fishing operations were furtive and clandestine.

This problem of illegal and clandestine fisheries that was happening since the beginning of the 1950s was presented as a central argument for the declaration of "200 miles of territorial water for exclusive economic use". Besides Ecuador, Peru and Chile also made reality this proclamation in 1952 with the creation of the "Permanent Commission of the South Pacific".

On the other hand, Ecuadorian "purse seine" and "long line" fishing boats started to operate in Galapagos since the beginning of the 1970s.¹²

History of the Fishing Communities and the Artisanal Fisheries in the Galapagos Islands.

The establishment of the North American Naval Base in the Island "Baltra" around 1940 promoted the local economic development. As a result, the fishers of Santa Cruz and San Cristobal Islands began to concentrate on selling fresh fish to the fleets so eventually the fishing activities became their principal source of life. By the end of the 1940s, fishing activities in the Galapagos Islands were no longer merely a regular source of sustenance, fishing became a lucrative commercial activity, very attractive to the colonist, due the time the number of people dedicated to the fishing started to increase.

Many facts contributed to the increasing of the Galapagos fishery community between 1945 and 1950, an important milestone achieved for that time was the creation of the "Galapagos Fishing Society" in Puerto Baquerizo Moreno - San Cristobal. This industrial unit was a huge refrigerating camera with a capacity of 1000 tons.

With this brand new infrastructure, vast fishing vessels could now anchor in the recently constructed port in San Cristobal. The presence of ten sloop vessels of 30 foot initiated a new era in the Galapagos colonists, people who were leaving at the high lands started to work as fishers and sell their product to the storing center of the "Galapagos Fishing Society", many of them actually worked directly in the refrigerating plant. Soon, the first Ecuadorian tuna vessel came to Galapagos; her name was "Rose Marie", this boat usually transported to the Continental Ecuador different fishing products captured by Galapagos fishermen.

The future seemed quite promising with the presence of the refrigerating camera of the "Galapagos Fishing Society", unfortunately, because of bad management, "La Predial" began to have internal administrative problems and eventually the installations were abandoned in 1955. The closing of "La Predial" resulted in the lost

¹² In 1985 Ecuador started a program, which accommodated "associated foreign fishing boats" (mainly from Japan and Taiwan) permitting them to long line fish under the national flag in Ecuadorian waters. This program was terminated in 1996.

of many fishermen jobs who were working for the "Galapagos Fishing Society". Immediately, the fishing community felt the effects since they no longer had a storing center where to give the fishing.

Due the time and taking advantage of this situation, two North American industrial fishing ships "Lucy" and "Jane" came to Galapagos at the beginning of the 1960s. For several years, these two ships were dedicated to the harvest of fresh fish captured by Galapagos fishermen. The presence of these vessels represented a new milestone for the Galapagos community, once again, more colonists who were living at the high lands not only in San Cristobal but also in Santa Cruz Island, started to work as fishermen¹³. Soon the fishing community and its fleet increased for the reason that fishing activities were seen for the colonists as a very lucrative and profitable source of life.

Continental investors came to San Cristobal Island with fishing boats to hire local fishermen and capture the most commercial species of fish. By the beginning of 1970, at least 20 new boats of around 30 feet were operating in San Cristobal, the owners of these boats usually worked with local people, however many fishermen from the mainland came to Galapagos on these boats in order to teach new technical and fishing arts.

Between 1970 and 1972, the Galapagos Fishing Community experimented a significant increase in the fishing production when huge Panamanian fishing fleets came to the Galapagos Islands to buy the fishing products to the local fishers¹⁴. The presence of these boats was an important step that resulted in the increasing of the Galapagos fishing community.

However, fishing activities became less intensive during the 1980`s when tourism activities started to be part of the reality in Galapagos. Little by little tourism started to involve more and more Galapagos residents who had previously been working in the fishing sector.

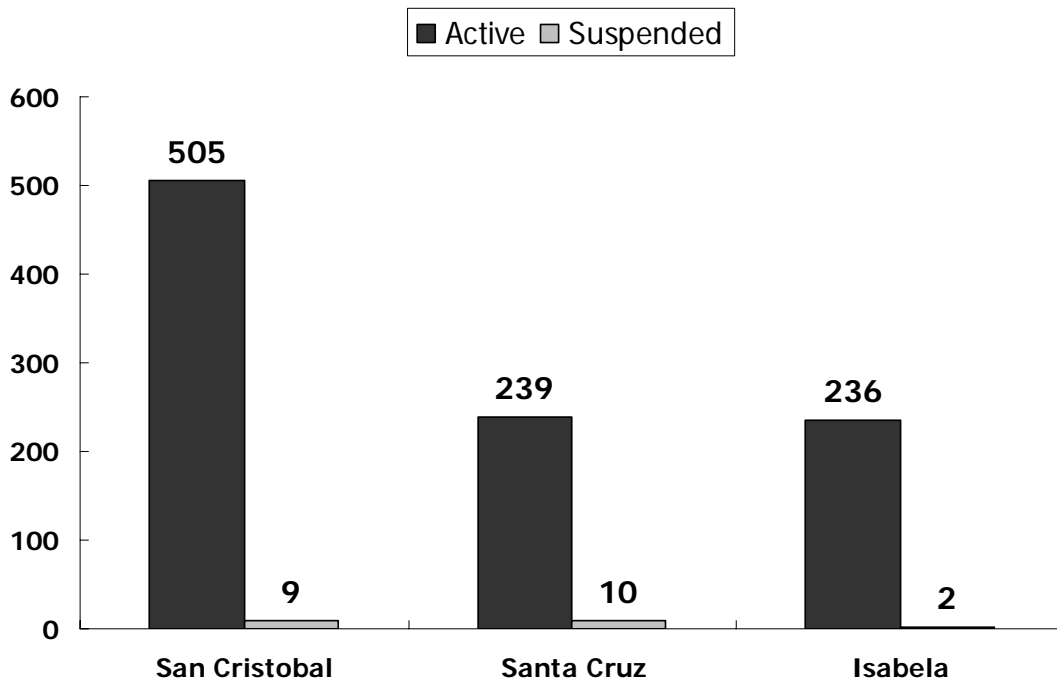
During the last decade the number of fishermen has increased in the Galapagos Islands. At this moment, in 2005, 1001 fishers are registered in the GNP records. From this group of fishers, 980 are active and 21 were suspended for different reasons. (See the following figure)

Number of active and suspended fisherfolks in 2005

Source: JICA Survey 2005 (Fig. 7)

¹³ Only some few colonists were working as fishers in Santa Cruz Island, most of the community as in San Cristobal Island was living at the highlands. However fishermen of Santa Cruz use to sell their product in San Cristobal too.

¹⁴ At least 4 Panamanian fishing vessel were operating in Galapagos in 1972: "Beatriz", "Codiakk", "Chicuzen Maru", "Patao".



History of the most relevant fisheries in the Galapagos Islands and its relation with the immigration effects

Until the middle of the 1980s, fishing activities in the Galapagos Islands were performed basically without alterations; the only exception was the lobster fishery which became more sophisticated with the introduction of the compressed air used for diving.

However, the fishing activities in the Galapagos Islands were mainly concentrated since the past in 3 categories but since 1992 a new fishery was added¹⁵:

- “Fresh fishing” or “whitefish fishing” for the local consumption.
- “Dried or salted fish” for consumption in Continental Ecuador.
- “Lobster fishery” for international exportation.
- “Sea cucumber fishery”.

Fishing was one of the main economic activities in the Galapagos Islands during last century; it was maintained for over 100 years as a traditional, artisanal activity. Until some 50 years ago fishing was largely a subsistence activity.

The most exploited species have been the “mullet”, the “Galapagos cod or bacalao” and some “Serranidae species” which are the base of the **“whitefish fishery”** in Galapagos. This fishery started in approximately 1940 and for several decades it made up 100% of the fisheries catch exported out of the islands. Eventually this

¹⁵ The sea cucumber fisheries started in Galapagos by the middle of 1992.

fishery declined and for this reason many people think that it was because the populations were over fished.¹⁶

The **“dried or salted fishery”** is for consumption in Continental Ecuador during the Lenten season, the favorite and basic fish for this fishery is the “cod” locally known as “bacalao”. For several years, this fish has been also over fished and for that reason today is very common to use other species for the Lenten season. However, some fishermen still are able to find this felt like fish.

The third and actually one of the most important fisheries in the Galapagos Islands is **“Lobster fishery”**. The lobster fishing has been an important part of the economy of the Galapagos fishing community since the establishment of an export-orientated “spiny lobster fishery” at the beginning of the 1960s. Lobstering for local use and export to the continent and internationally developed slowly during the middle of the 1960s to the 1970s.

From then until the early 1980s, spiny lobsters were harvested for export by divers operating from large vessels based in mainland Ecuador and carrying a variable number of small launches locally known as *“pangas”*. The primary diving gear used for commercial harvest of spiny lobster in the Galapagos Islands is hookah gear. Hookah gear consists of a small air compressor in a *“panga”* supplying air to up to one or two divers via long low-pressure hoses to depths of up to 15 meters¹⁷.

Fuelled by an increase in tourism and immigration during the 1980s and retirement of the last remaining large vessel in 1984, the lobster fishery grew rapidly at local level. Initially, divers operated mainly during daylight hours, catching lobsters either by hand in their dens or by handheld harpoons.

In the late 1980s, night diving became more important, as lobsters are more easily taken at night as they forage outside their shelters, and the use of Hawaiian slings also increased. No traps are used, as early trials proved unsuccessful.

The fleet currently consists of approximately 145 small launches (3-5 meters) and 47 mother boats (up to 15 meters), all based in the Galapagos Islands. Most of the mother boats carry two to four small launches with them as operation units and carry several chest freezers on board, operated by a generator that keeps lobsters tails for up to 15 days.

The Galapagos lobster fishery harvests primarily two species of spiny lobster¹⁸:

The red lobster.

The green or blue lobster.

¹⁶ According to the reports of the CDF, by 1973 whitefish made up only 76% of the total annual catch in Galapagos, in 1978 it was approximately 45% and by 1989 fallen to only 20% of the total.

¹⁷ In many cases divers need to go deeper, sometimes depending the areas, fishermen might need dive to depths of up to 30 meters. At this moment lobster population is low and this situation requires more efforts from fishermen. Eduardo Espinoza / GNP.

¹⁸ “Spiny Lobsters: Fisheries and Culture”, second edition by B. F. Phillips. Curtin University of Technology, Western Australia.

Both species are almost entirely exported as frozen tails and middlemen pay the same price for both species. There is also a small incidental catch of slipper lobster which is consumed locally. Lobsters are currently caught either from boats using several small launches on trips that range from several days to a few weeks or by small launches on daily excursions.

These two types of operation are difficult to compare because the nature of the fishing is different. Although both carry divers using hookahs, boats can fish at a greater number of sites, move quickly between them and operate during the night, while small launches mainly fish during the day at one or a few sites close to the harbors.

According to natives and older residents in Isabela Island, the first large immigration of coastal fishermen to the Galapagos coincided with the lucrative boom of lobster fishing from 1982 to 1984 by the middle of 1992. These migrant fisherfolks introduced new fishing techniques that were already being used on the coast, such as the trident, which is used for spearing lobster, and the air compressor, which is used for breathing during diving. Additionally, the investment capital of the lobster exporters and the knowledge of coastal fishermen led to the improvement of boat materials, construction techniques, and means of propulsion.

In 1982, lobster fishery was a semi-industrial activity with only one large ship and numerous small local ones operating when international export opened again. The annual catch of lobster in the early 1980s was approximately 32 metric tons per year. Between 1982 and 1986 lobstering developed rapidly and annual catch increased in 300%. By 1987 it had become clear that considerably greater effort was needed to capture similar quantities to four years before, average size of individuals was considerably smaller, and greater diving depths were required, meaning that the populations were being overexploited. Lobstering attracted new immigrants, 90% of the lobster fishermen came from mainland Ecuador and most of them stayed permanently in Galapagos.

At present it is clear that lobster fishing is extremely difficult and it requires more sophisticated equipment, more effort per person and per day and obviously deeper immersion, because of the reduction of the lobster populations caused by the over fishing.

In the following data (Table 1), we can easily appreciate that lobster in Galapagos has experimented a significant reduction of its populations; this is the result of the over fishing of the resource which represents a serious problem for the preservation of this crustacean.

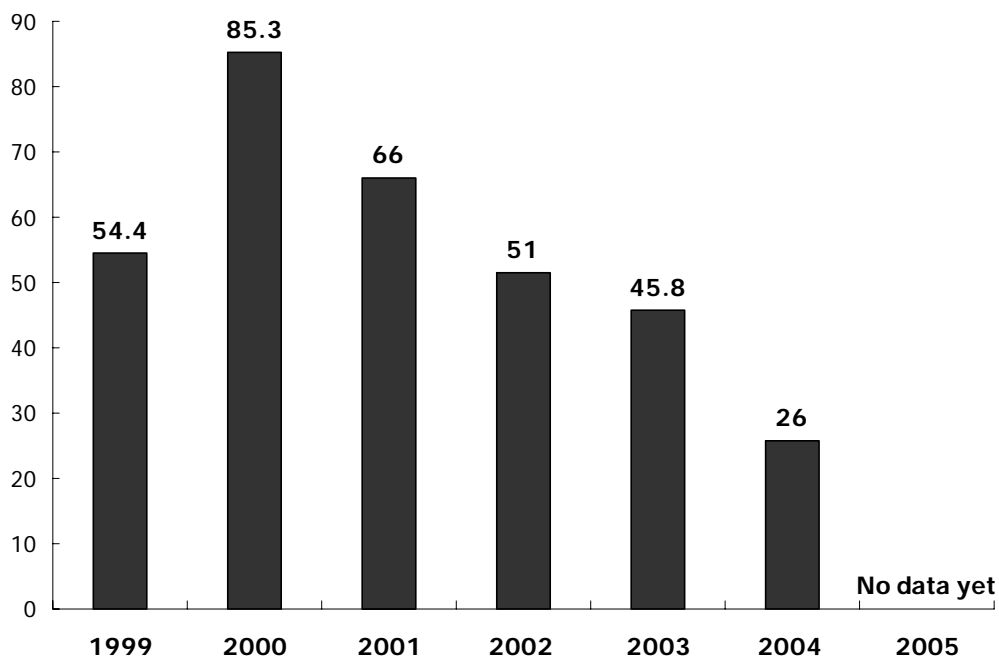
(Table 2)
Data Summary of Galapagos Lobster Fisheries during 1999 – 2004

Source: CDF reports and GNP data base.

Year	Allowed quota	Total catch in metric tons	Gross Income USD	Gross Per capita Income	Active fisherfolks	Registered fisherfolks at GNP	Active fishing crafts	Crafts registered at GNP
1999	35 tons	54.4	900.000	1.320	682	795	No data	222
2000	50 tons	85.3	1'700.000	1.437	1.183	682	328	417
2001	No quota, only 4 months of fishing.	66	1'450.000	1.649	879	834	323	426
2002	No quota, only 4 months of fishing.	51.4	1'200.000	1.860	667	1.059	304	446
2003	No quota, only 4 months of fishing.	45.8	1'000.000	1.550	645	978	248	446
2004	No quota, only 4 months of fishing.	25.7	500.000	761	657	997	309	446

(Fig. 21)
Tons of lobster tails captured during the Galapagos lobster fisheries since 1999 to 2004.

Source: CDF reports and GNP data base / JICA Survey.



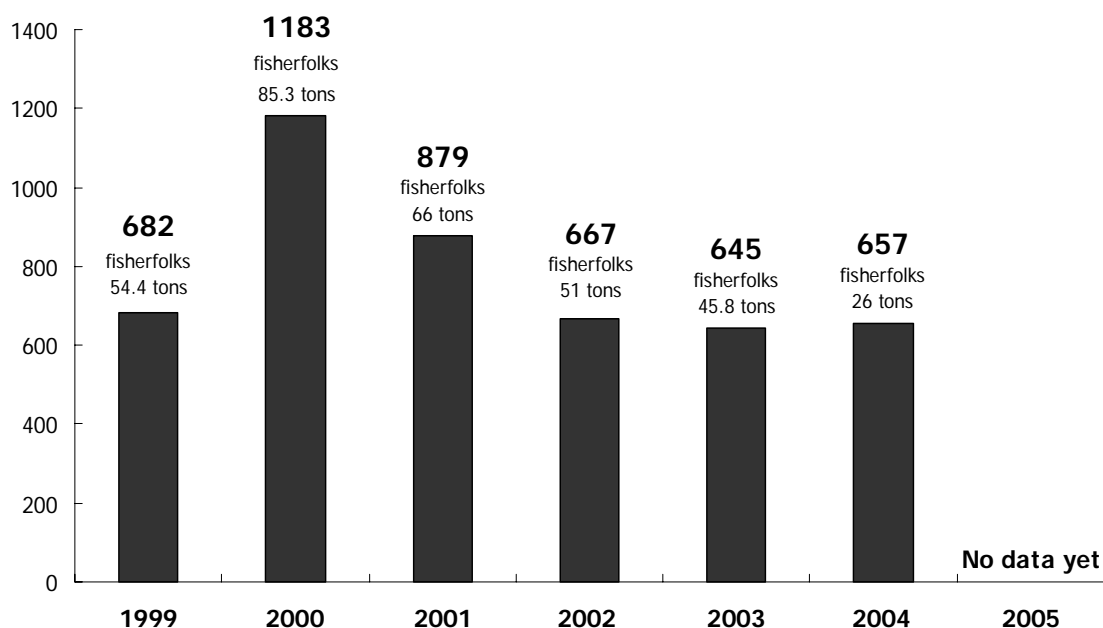


In 1999, 54.4 tons of lobster tails were captured by 682 fisherfolks, in comparison, 657 fisherfolks only captured 25.7 tons last year in 2004; this quantity represents a decreasing of almost the 48% in the lobster fishery. The season 2004 has been the worst lobster fishery in the past 10 years. It is very evident that the process of the population decreasing of the Galapagos lobster is already well underway. The reality is that Galapagos spiny lobsters already have been reduced to a level in which it will take considerable time for their populations to recover and even the same fisherfolks recognized this fact. For this reason, many environmental organizations and even several fisherfolks think that it would be important to give the resource a break until its population is well recovered. However, according to several fisherfolks, since no other alternatives are available, they demand the opening of the log-line fishing in the GMR, many inclusive are totally sure that log-line is the most realistic hope for the entire Galapagos Fishing Community.

(Fig. 22)

Number of fisherfolks who participated in the lobster fisheries since 1999 to 2005

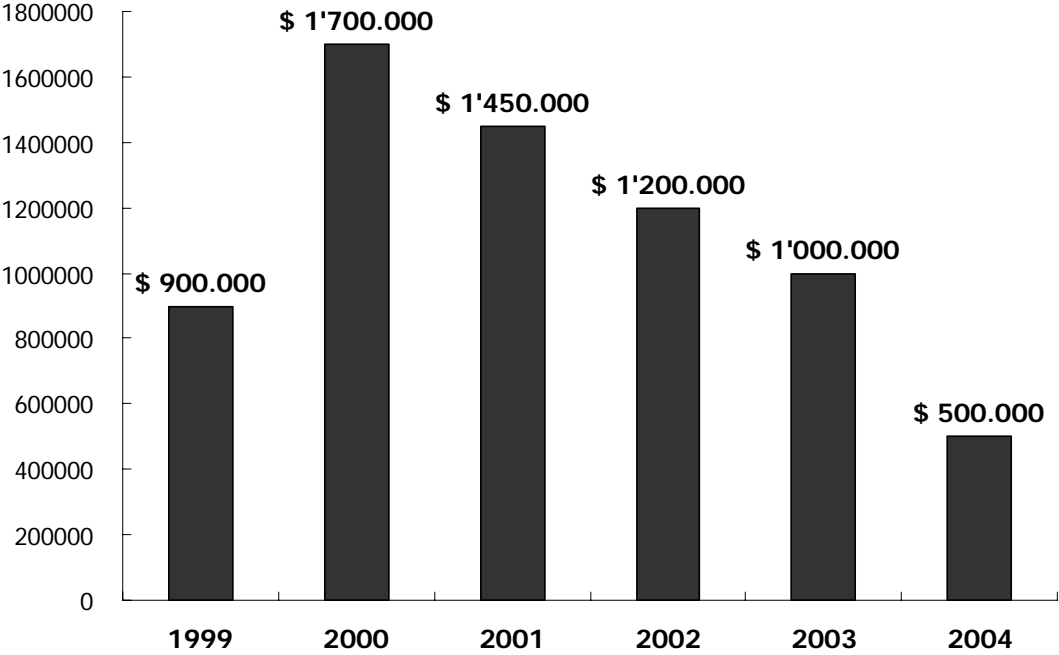
Source: CDF reports and GNP data base / JICA Survey.



As we can see in this figure, not all the fisherfolks participate in the lobster fisheries, for example in the last fishery in 2004, 997 fisherfolks were registered at the Galapagos National Park, however only the 65.8% participated in the fishery.

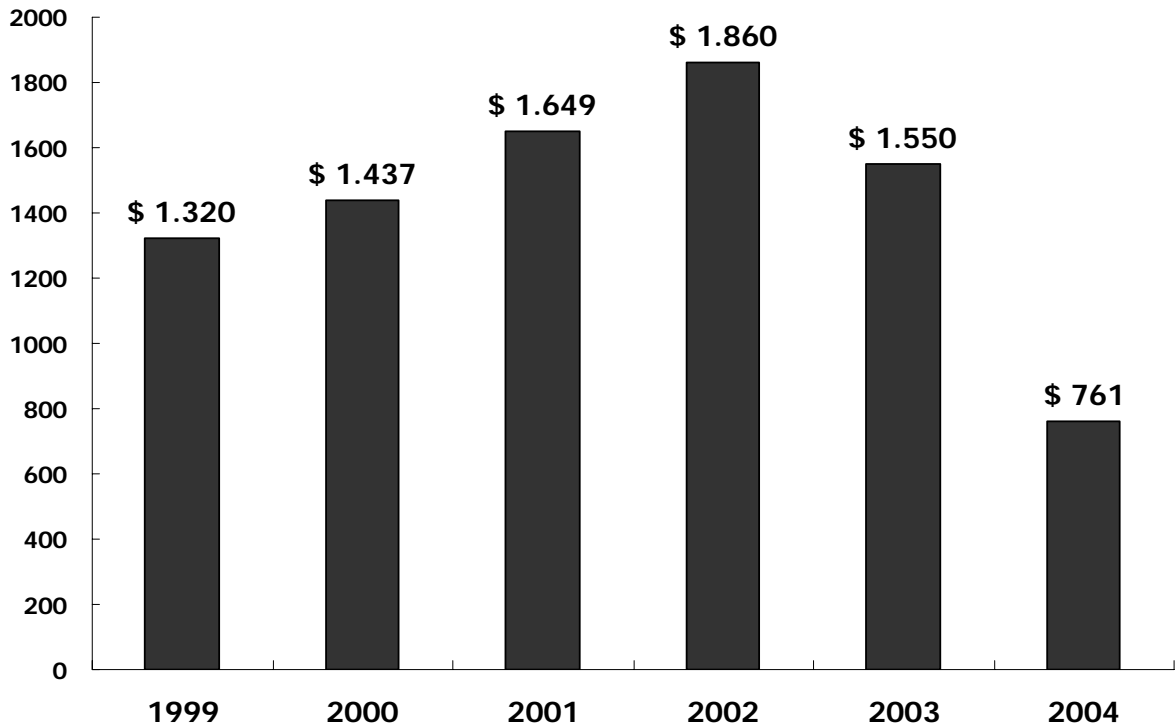
(Fig. 23)
Gross incomes from the 1999 to 2004 lobster fishery seasons.

Source: CDF reports and GNP data base / JICA Survey.



(Fig. 24)
Gross per capita incomes from the 1999 to 2004 lobster fishery seasons.

Source: CDF reports and GNP data base / JICA Survey.



Galapagos fishers say that lobster fishery has declined drastically, this fact can be verified in the data information of Figure 24 (Gross per capita incomes from the 1999 to 2004 lobster fishery seasons). The information was taken from the fisheries databases of the CDF and GNP. For example, the average gross income for each one of the 657 fisherfolks who participated in the 2004 lobster fishery was about \$ 761 dollars; fishers just caught 26 metric tons of lobster during the whole season.¹⁹

All the fishers who were interviewed in the 3 islands said that 700 dollars for the 4 months of work was not worthwhile, one of them emphasized that “in this time, lobstering is just a waste of time, the fishery is too dangerous and very risky and the profits are very low”. A new lobster fishery season was opened this year in 2005, it started September 1 and it will finish December 31. Again, the Galapagos Fishing Community is very disappointed, this time not only because the lobster population is low but also because of the bad conditions of the climate and the bad conditions of the sea. The results and evaluation of the 2005 lobster fishery will be ready for March 2006.

Besides “lobster” and “whitefish” fisheries, in the last 15 years new fisheries have been opened. One of the most important and representative for the fishing community has been the *“sea cucumber fishery”*. With the arrival of sea cucumber fishery to the Galapagos Islands in 1991, after commercial depletion in mainland Ecuador, Galapagos fishing activities, as a whole, changed their direction. The “sea cucumber fishery” created big expectation for the entire Galapagos fishing community. Originally, this fishing activity was concentrated in the “Bolivar

¹⁹ Since 2001, the GNP does not usually establish a quota for the lobster fisheries. Instead of that, fisherfolks have four months of fishing.

Channel"²⁰, focusing entirely on "*Isostichopus fuscus*"²¹ as the commercially important species. According to one Galapagos fisherman, the fishing community has seen the sea cucumber littering the floor of the shallows for years. It did not take long to calculate that the low effort, low expense, and high price fetched by sea cucumber equated to lucrative profits.

Both the older resident fishermen and the new migrant fishermen began to invest in the necessary equipment for sea cucumber fishing. In the early 1990s, as the fishery of the sea cucumber "*Isostichopus fuscus*" became established, concerns grew regarding the growing number of sea cucumber fishers, fishing in sensitive waters, the presence of sea cucumber processing camps in restricted national park areas, and the potential ecological effects of a declining sea cucumber population. As a result, conservation organizations were able to convince the Ecuadorian government to declare a ban on sea cucumber fishing in 1992.

The political and economic pressures to open the fishery, however, were very strong, and in 1994 the government opened an experimental three-month season for sea cucumber. A quota of 500,000 sea cucumbers was established. This number quickly was dismissed as too conservative, and estimates of the true catch for that season are between 5 and 6 million²². In a short amount of time the sea cucumber became the most lucrative fishery in the islands, and was reported to have been extremely profitable for the relatively small number of fisherfolks participating²³.

Park administrators and conservation organizations were alarmed at the size of the total sea cucumber catch in that first season, and were able in 1994 to establish an indefinite ban on sea cucumber fishing, an order of official closing was given by a Presidential decree. Sea cucumber fishermen, including both natives and new migrants protested for the government restrictions on the fishery. Despite political pressure and protests, the sea cucumber fishery remained closed for the next five years.

During the closure, government organizations and conservation groups searched for effective policies to regulate the sea cucumber fishery. In 1999 and 2000, in the context of political instability and an economic crisis in Ecuador, the sea cucumber fishery was reopened without a quota, but fishers had 60 days to fish and as a result, 4'401.657 individuals were captured by 796 fishers. In preparation for the opening of the 1999 season, export companies provided fishermen with loans that were invested in new fiberglass boats and fishing equipment.

Native fisherfolks, migrant fisherfolks, and other people who were not traditionally fisherfolks quickly became engrossed, indebted, and fully dedicated to the sea

²⁰ "Bolivar Channel" (Canal Bolivar in Spanish) is located at the east site of Isabela Island. It is one of the most productive fishing zones in Galapagos, because of the abundance of nutrients upwelling. At the present, sea cucumber fishery is permanently prohibited in this zone because of the over fishing.

²¹ "*Isostichopus fuscus*" is the scientific name of the commercial species of Galapagos sea cucumber. This species has been captured by local fishermen since the 1990s.

²² According to the perceptions of the GNP and CDF.

²³ Sea cucumber fisheries records indicate that during the first legal fishing season in 1994 there were only approximately 400 fishers. Despite being an activity intended only for locals, the sea cucumber fishery has enticed fishermen from mainland Ecuador to fish illegally and there is a constant introduction of new fishers.

cucumber season. During these seasons, in contrast to the season of 1994, conservation organizations established systems with fishers to monitor, manage, and patrol the sea cucumber fishery.

However, the fishing grounds were extended to Floreana, Española, Fernandina, Isabela, San Cristobal and Santa Cruz Island with potential expansion to the rest of the Archipelago. Since 2000, every year the government has opened a sea cucumber fishery season usually with a specific quota of individuals or 60 days of fishery. The sea cucumber is collected from the bottom of the sea floor by divers on a hookah, at depths ranging from 1 to 30 meters. Lately in this year, a total of 703 fishers and 271 fishing vessels were active in the last sea cucumber fishery, 2005 season²⁴.



(Table 3)
Data Summary of Sea cucumber Fisheries during 1999 – 2005

Source: CDF reports and GNP data base.

Year	Allowed quota	Captured individuals	Gross Income USD	Gross Per capita Income	Active fishers	Registered fisherfolks at GNP	Active fishing crafts	Crafts registered at GNP
1999	No quota, only 60 days of fishing. 4500000 or 2	4'401.657	3'400.848	4.272	796	795	222	222
2000	months of fishing. 4000000 or 2	4'946.947	3'600.000	2.929	1229	682	377	417
2001	months of fishing. No	2'672.345	1'392.223	2.332	597	834	230	426
2002	quota, only 60 days of fishing.	8'301.449	2'686.675	3.453	778	1.059	275	446

²⁴ Fishing Season: According to the results from the population density participatory studies it will be decided whether a fishery will be opened each year. If a sea cucumber fishery were to happen, it should take place between March and May each year for 60 days.

2003	4700000 or 2 months of fishing.	5'005.574	3'356.840	3.972	845	978	313	446
2004	4000000 or 2 months of fishing.	2'959.091	4'438.636	5.078	874	997	326	446
2005	3000000 or 2 months of fishing.	1'400.368			703	1.001	271	446

The Galapagos sea cucumber "*Isostichopus fuscus*" can be found in the eastern Pacific, from Baja California, Mexico to Ecuador. Unfortunately in mainland Ecuador the populations are overexploited and the only viable populations are found in the Galapagos Marine Reserve. In the Archipelago of Galapagos the "*Isostichopus fuscus*" can be found in all islands where there are rocky bottoms down to 40 meters depth approximately.

Since the beginning of the 1990s, the sea cucumber fisheries have been one of the most important economic activities of the fishing community. In the last 7 years, an average of 831 fishermen has participated every year in the sea cucumber extraction.

Around 30'000.000 individuals have been captured during the last 7 years, the sea cucumber fisheries have produced a total gross income of around USD \$ 3'145.870 per fishery. Interviews with fishermen revealed that they believe that growth in the number of fishers has caused declines in per capita profits. Even using the conservative data for the number of registered fishers, per capita profits have declined by more than 50%.

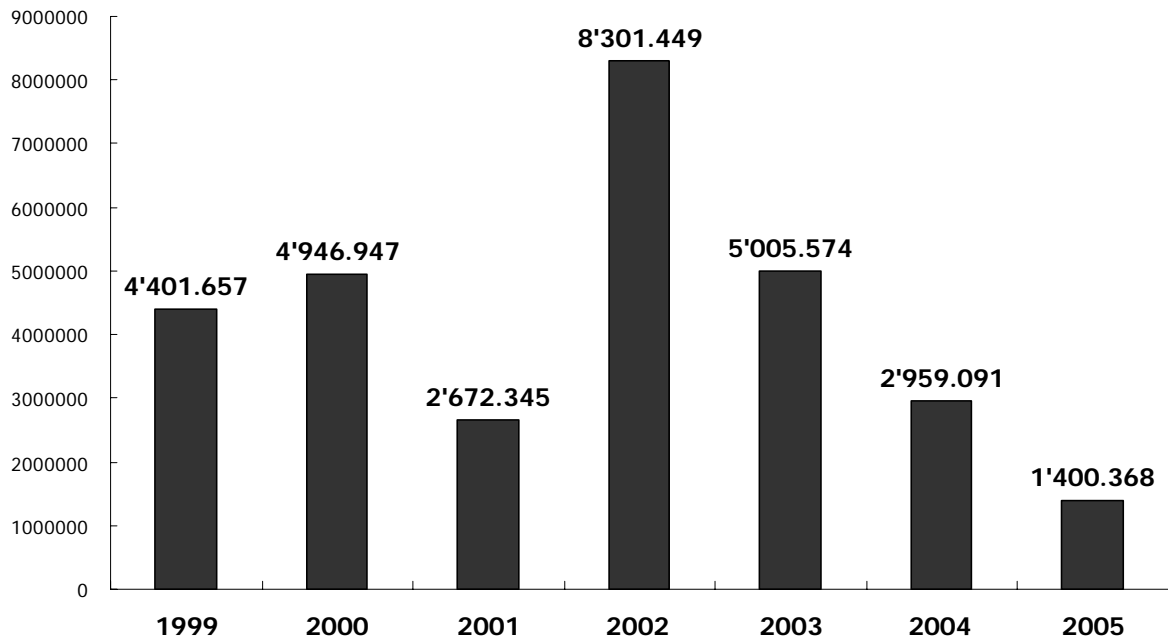
According to fisherfolks, decreases in profits coincide with growing debt that has been accumulated in order to invest in more boats and equipment. Decreases in profits also have been accompanied by an increase in the effort that fishermen must make to capture sea cucumbers.

In conclusion, the rapid exploitation of the sea cucumber has in the past been blamed on the arrival of migrant fishermen from the coast. It is true that new migrants played a role in the start of sea cucumber fishing. However, the key factors that allowed for the efficient exploitation of the new resource were not the fisherfolks themselves but rather the new fishing techniques and access to credit and markets.

This suggests that the annual sea cucumber crisis is due to factors more complex than that there are simply more fisherfolks generating greater sea cucumber catches. In fact, data shows that despite the substantial increase in fisherfolks, fishing quotas have limited the overall catch. In addition, limiting the arrival of new migrants has not eased tensions.

(Fig. 25)
Total of the individuals captured during the Galapagos Sea cucumber fisheries through 1999 and 2004.

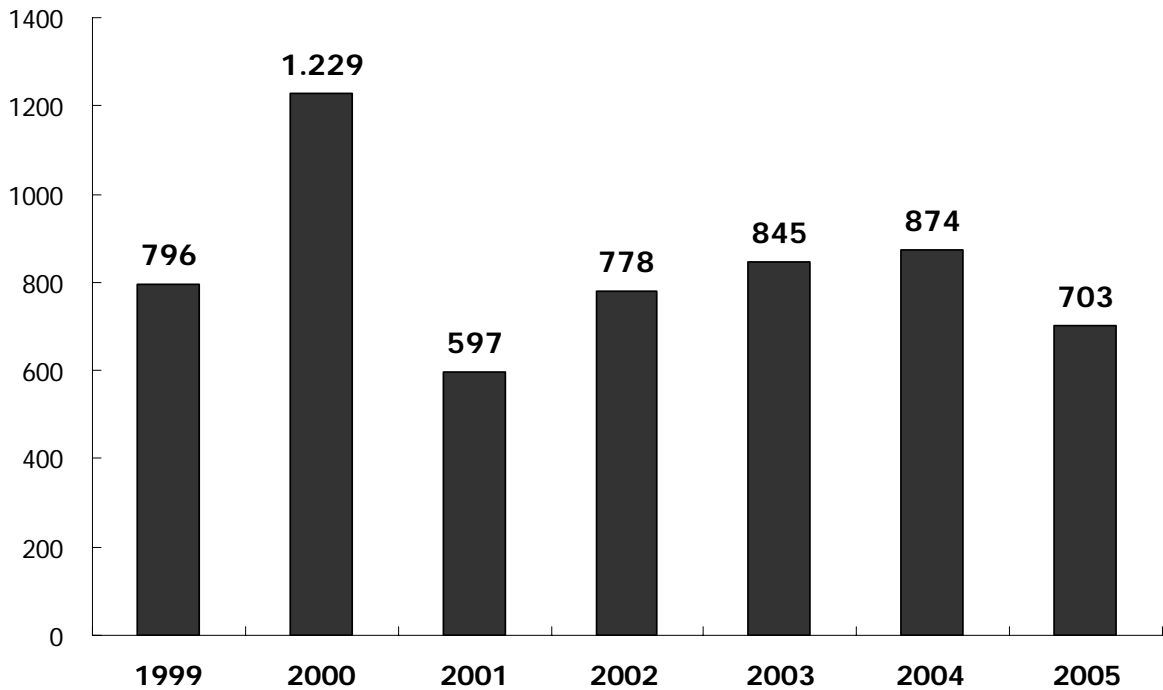
Source: CDF reports and GNP data base / JICA Survey.



(Fig. 26)

Number of fishers who participated in the sea cucumber fisheries since 1999 to 2005

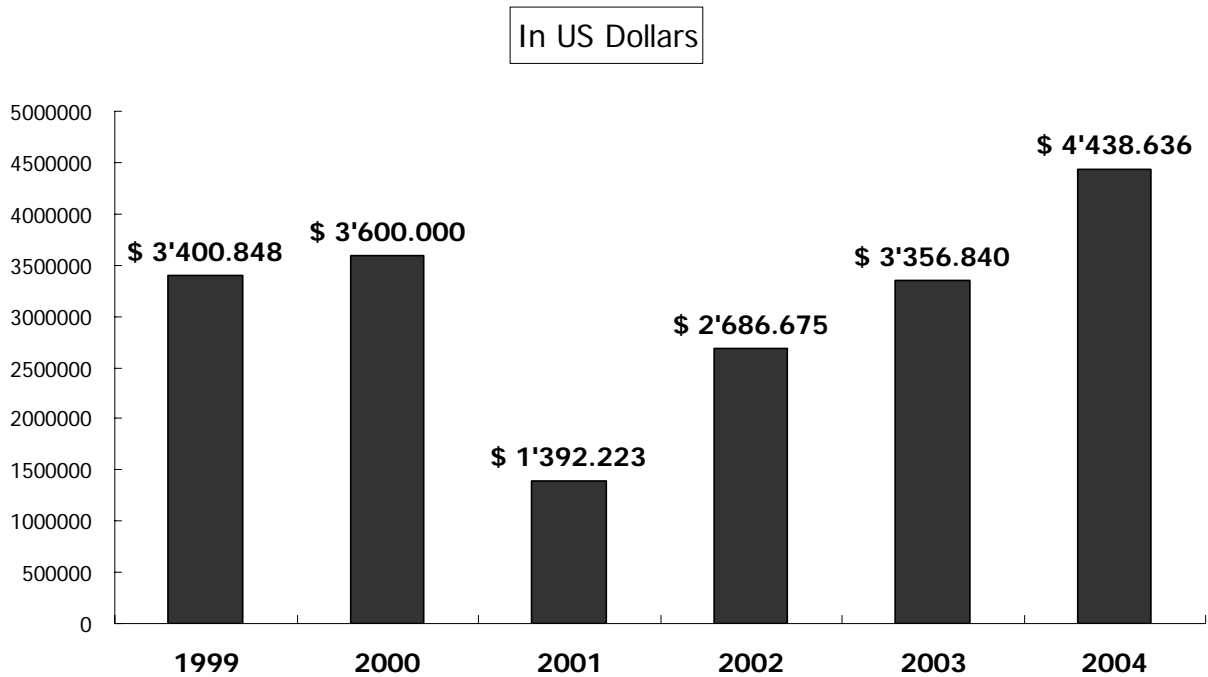
Source: CDF reports and GNP data base / JICA Survey.



(Fig. 27)

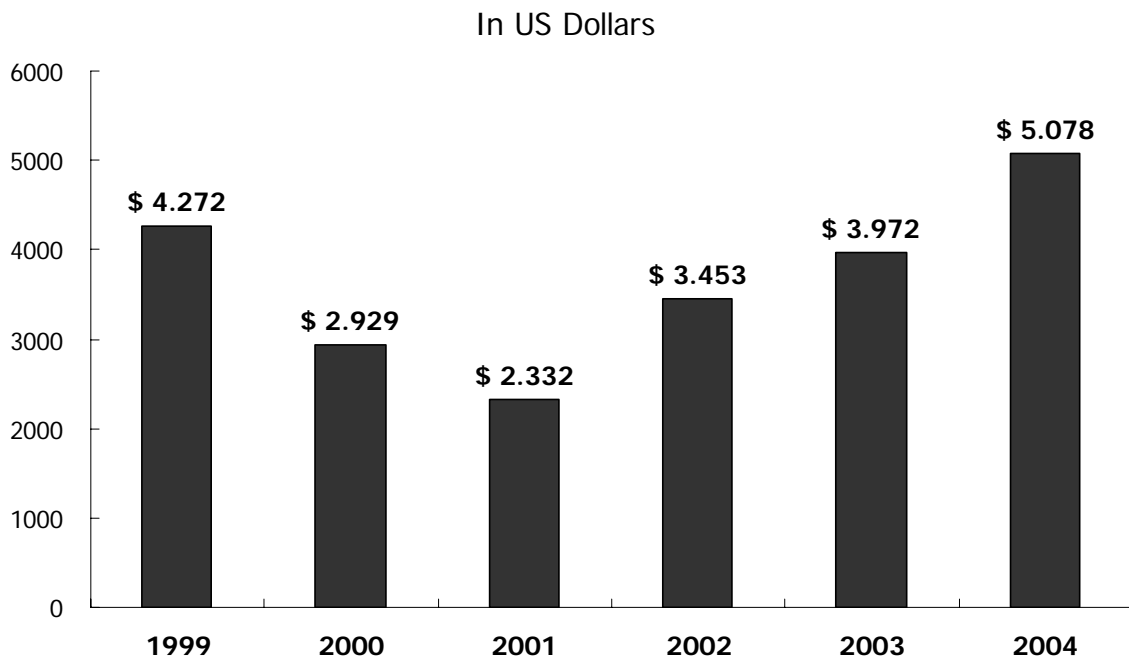
Gross incomes from the 1999 to 2004 Sea cucumber fishery seasons

Source: CDF reports and GNP data base / JICA Survey.



(Fig. 28)
Gross per capita incomes from the 1999 to 2004 Sea cucumber fishery seasons.

Source: CDF reports and GNP data base / JICA Survey.



According to Fig. 28, in the sea cucumber fishery season 2004, Galapagos fisherfolks who participated in the fishery had a gross per capita revenue of around \$ 5.078

dollars for the whole fishery; in 2005 the incomes were much lower, the 703 fisherfolks who participated in the fishery just captured only 1'400.368 individuals²⁵.

It is very important to mention that, there exist practically 6 months of fishery period for the fishing community in Galapagos, 4 months for the lobster fishery and 2 months for the sea cucumber fishery.

In these 6 months, most the fishers tried to make the money that will let them survive for the whole year. Of course, they have the option of "whitefish fishing", anyway, according to many fisherfolks who were interviewed in the three islands, this fishery is not profitable because there is not enough market for the sale of the product and there are too many fisherfolks.

For this reason, in the 3 islands, the majority of the fishing community is obligated to have a second activity in order to be able to sustain their families. However, the problem is also the over fishing of the main commercial resources, for that reason, in 1997, the Charles Darwin Foundation initiated a "fisheries monitoring program" with the support of the Galapagos National Park and the Galapagos Artisanal Fishing Community.

Fisheries Monitoring Program

The "Fisheries Monitoring Program" (FMP) pretends to establish the bases of scientific information on the magnitude and variation over time of the artisanal fisheries in the Galapagos Marine Reserve.

This information permits the evaluation by the Participatory Management Board and the Inter-institutional Management Authority of the ecological and economic tendencies, in order to improve the management of the resources and the fisheries.

For the monitoring, an inter-institutional team has been formed with the growing participation of biologists, fisheries observers, and members of the fishery sector, who collect daily biological-fishery data by means of surveys, forms, and sampling.

Monitoring is done simultaneously on the three main islands and in the different ports of disembarkation, on board ships, and with the vendors of fishery products. This abundant daily information is stored in a computerized database that records the fishery information and biological data in order to facilitate analysis and interpretation of the data.

According to the CDF, the fisheries in Galapagos focus mainly on the capture of fish and invertebrates, principally lobster and sea cucumbers, but unfortunately because of the over fishing, the populations of these species are declining. Fisherfolks have noted the same tendency in the preferred species of whitefish, for example groupers and mullets. The main conclusion to be drawn from these

²⁵ Until the first week of October 2005, the GNP and CDF did not have the results yet about the gross incomes of the sea cucumber fishery, season 2005.

historical tendencies is that measures are lacking to achieve sustainability in Galapagos fisheries and thereby to conserve the ecosystem and biodiversity.

In 1999, for the first time a formal evaluation of the year's fisheries was used to plan the fishery calendar for 2000. Not only were dates for the fisheries proposed, but also a series of actions for sustainability, among which are the establishment of non-extractive zones in accordance with the Management Plan, the introduction of mechanisms to limit the growth of the fishery effort, and, with the establishment of such mechanisms, the improvement of commercialization in order to increase the economic benefit of each captured organism.

Year by year, the GNP and the CDF have continued working with the monitoring program activities. It is important to highlight that every time a better participation of the fishing community is evidenced in the monitoring program.

This fact indicates the clear concern in the care of the resources on the part of many fishermen who willingly participate and collaborate with the information required for a good management of the marine resources.

This program since its beginning has been sustained by different NGOs and international donors, for example the WWF supported this program since 2004, however there is no budget for 2006 and for that reason the WWF and CDF are looking for support for being able to keep undertaking the "Fisheries Monitoring Program". Till the moment any NGO has accepted to support this program which has a year budget of US \$100.000.

Socio economic information about the Galapagos Fishing Community

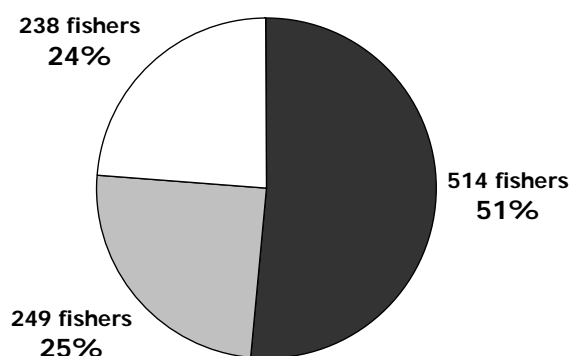
The Galapagos Fishing Community is conformed by 1001 fishers who are legally inscribed in the "Galapagos National Park", 18 members of the fishing sector are woman who basically are fishing crafts owners. However, the majority of the sector resides in San Cristobal Island which is the Capital city of the Province of Galapagos. 51% of the members of the fishing community live in that Island, for this reason two of the four fishing cooperatives are operating in San Cristobal.²⁶

(Fig. 29)
Percentage of fisherfolks according to the Island where they live

Source: GNP reports, Fishing Cooperatives and JICA Survey 2005

Total: 1001 fisherfolks

■ San Cristobal □ Santa Cruz □ Isabela



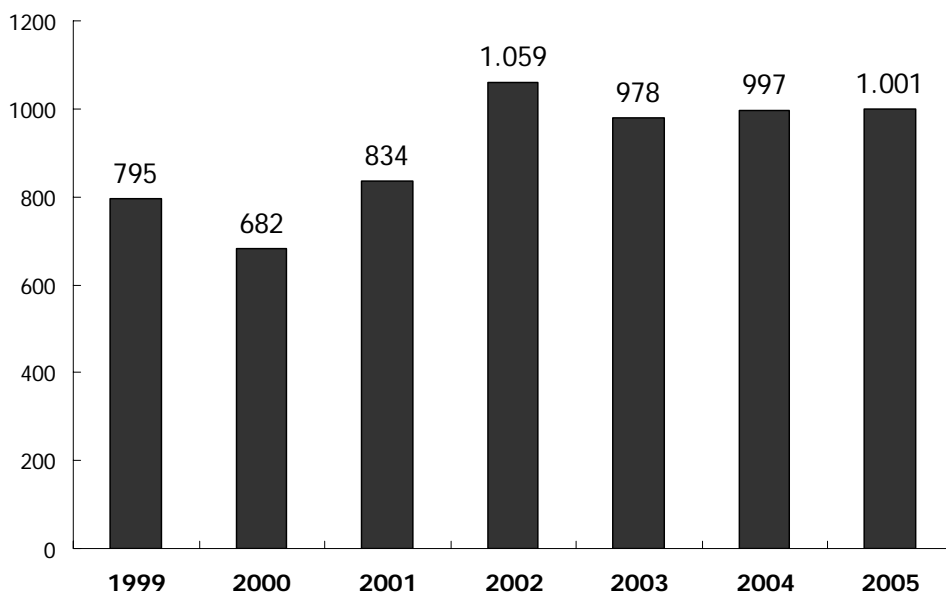
The number of Galapagos fishermen has been increased, especially during the last decades. For different reasons but mainly for fishing interests at least 56% have moved to the Galapagos Islands. According to the investigation in the Section "Effects of the Immigration in the Fishing Community"²⁷, only 44% of the fishing community is from Galapagos. In the past 7 years, the fishing sector increasing has been more controlled than before; however in 1999, 795 fisherfolks were inscribed at the GNP but at this moment in 2005 the fishing community has 1001 fisherfolks legally registered. This means that during the past 7 years, the sector has been increased in 26%.

(Fig. 30)
Increasing of the Galapagos Fishing Community between 1999 and 2005

Source: GNP reports, Fishing Cooperatives and JICA Survey 2005

²⁶ There are four fishing cooperatives operating in the Galapagos Islands: "COPELAN" and "COPEPROMAR" in San Cristobal, "COPROPAG" in Santa Cruz and "COPAHISA" in Isabela Island.

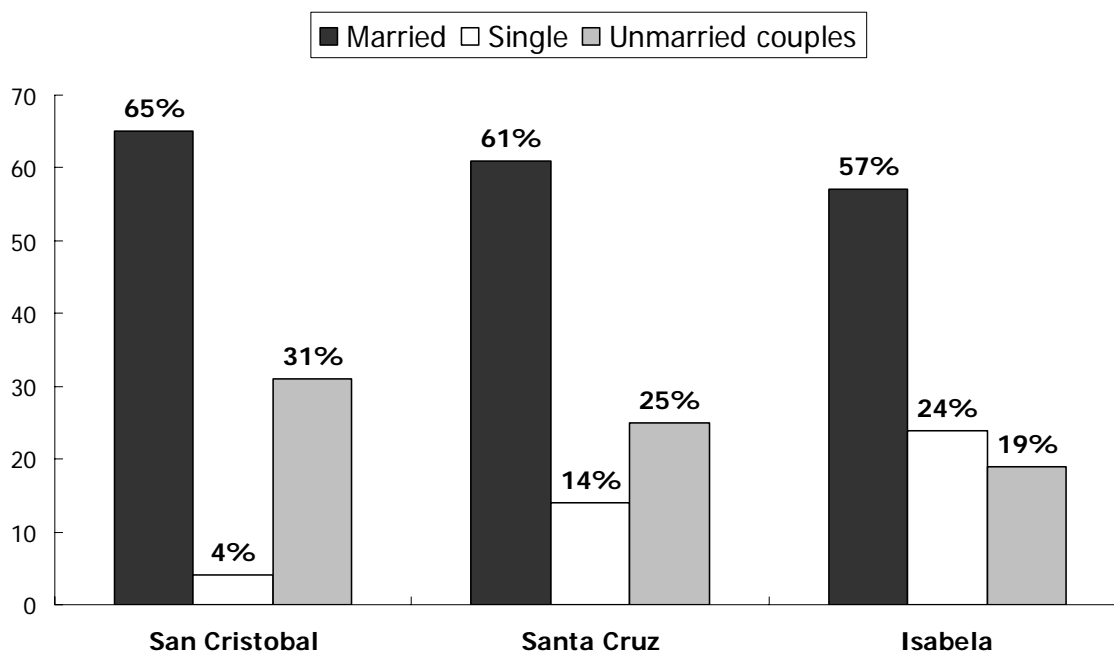
²⁷ See "Comparison of the number of Galapagos fishers versus fishers from others provinces" (Fig. 30).



About the civil status of the Galapagos Fishing Community, the results of the investigation indicate that the majority of Galapagos fisherfolks are “married”, however a significant number of them are “unmarried couples”²⁸ and only a 10% of the fisherfolks are “singles”.

(Fig. 31)
Percentage of Galapagos fishers according to their civil status

Source: JICA Survey 2005 – Opinion Polls / question 3

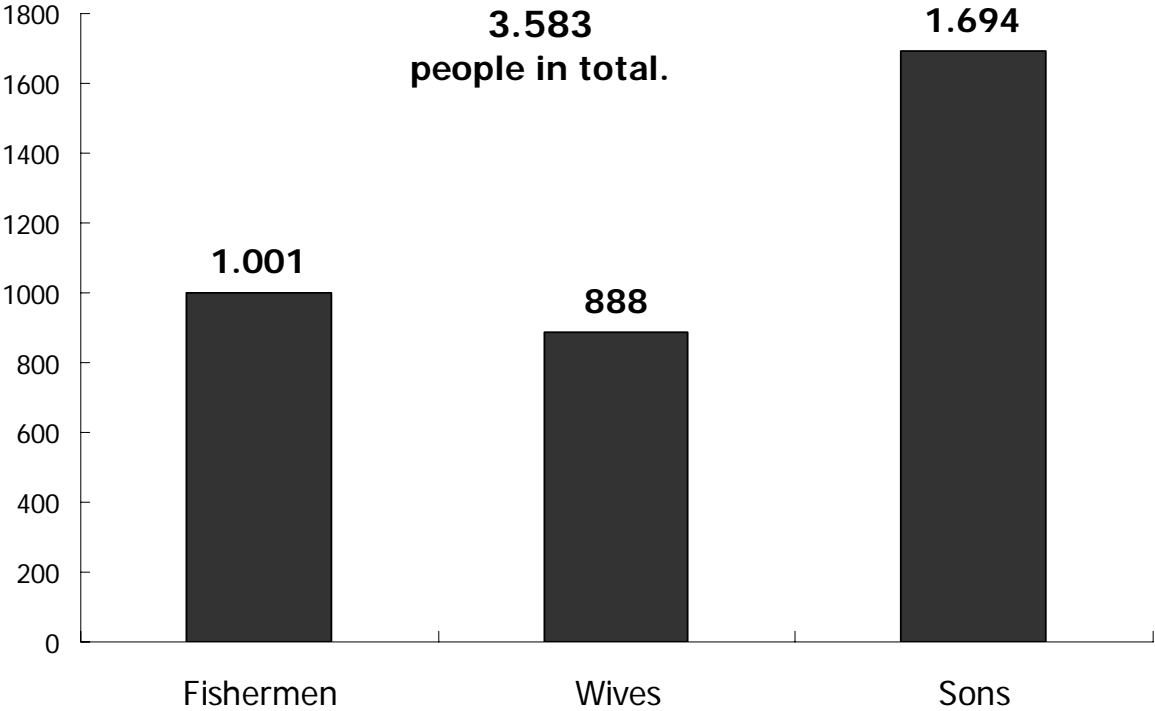


According to the investigation and database of the GNP, we can also realize that 67% of the fishers have families depending on them. The majority of the fisherfolks have at least 2 sons so in total there are 1.694 sons²⁹.

²⁸ Civil Status known as “Free Union” or in Spanish “Union Libre”.

Therefore, to sum up the results about the number of people who are part of the fishing community, we must mention that at least “3.583” people conforms the Galapagos Fishing Community.

(Fig. 32)
Number of people that are part of the Galapagos Fishing Community
 Source: GNP data base / JICA survey.



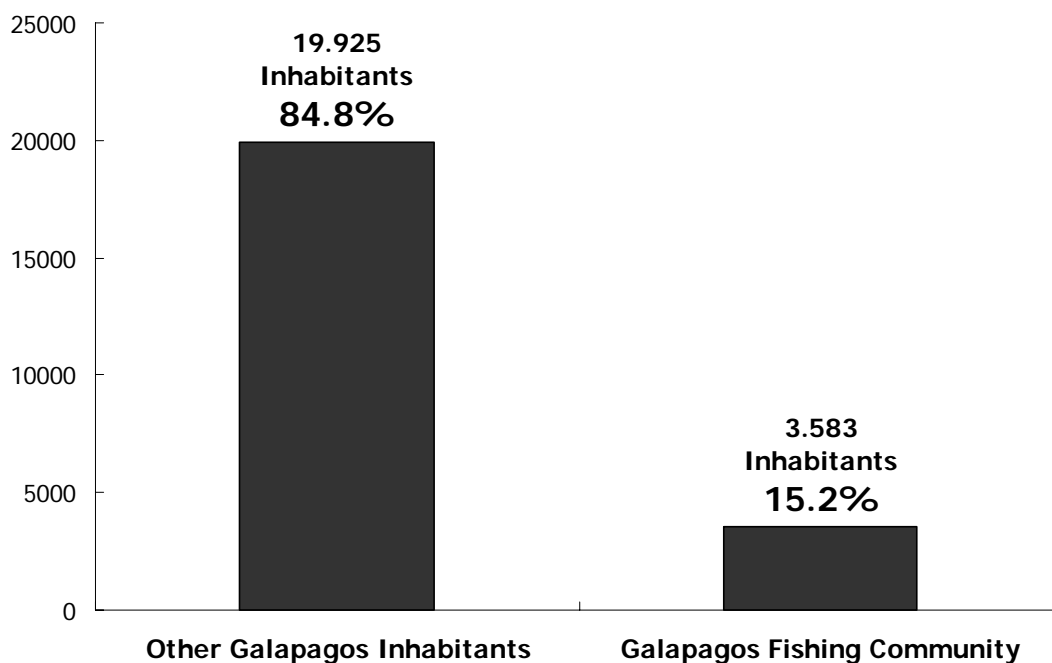
About the results indicated in the following Figure No. 33, it is very important to clarify that this number does not include other members of the fishers’ families who also depend on them, it is very common within the Galapagos Fishing Community that cousins, brothers, sisters and even parents depend on the fishing activities since many fisherfolks supports not only their wives and sons but also others relatives.

If we compare these results with the total population of Galapagos Islands, we realize that at least a 15.2% of the Galapagos residents are part of the fishing Community. (If we just consider the fisherfolks without their sons and wives we have a result of 4.2%)

(Fig. 33)
Average of people who are part of the Galapagos Fishing Community in relation to the entire Galapagos communities

²⁹ See “Number of Galapagos fisherfolks’ sons (Fig. 13).”

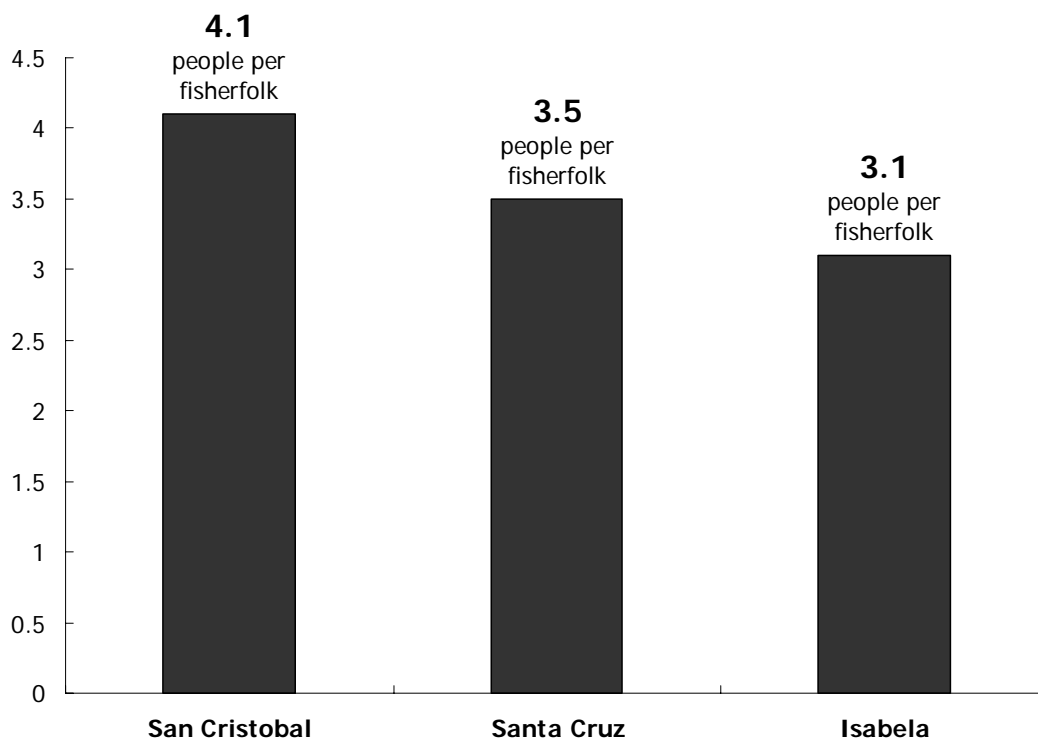
Source: GNP data base / JICA survey.



(Fig. 34)

Average of the number of people who depends on the Galapagos fishers

Source: JICA survey – Opinion Polls / question 8.



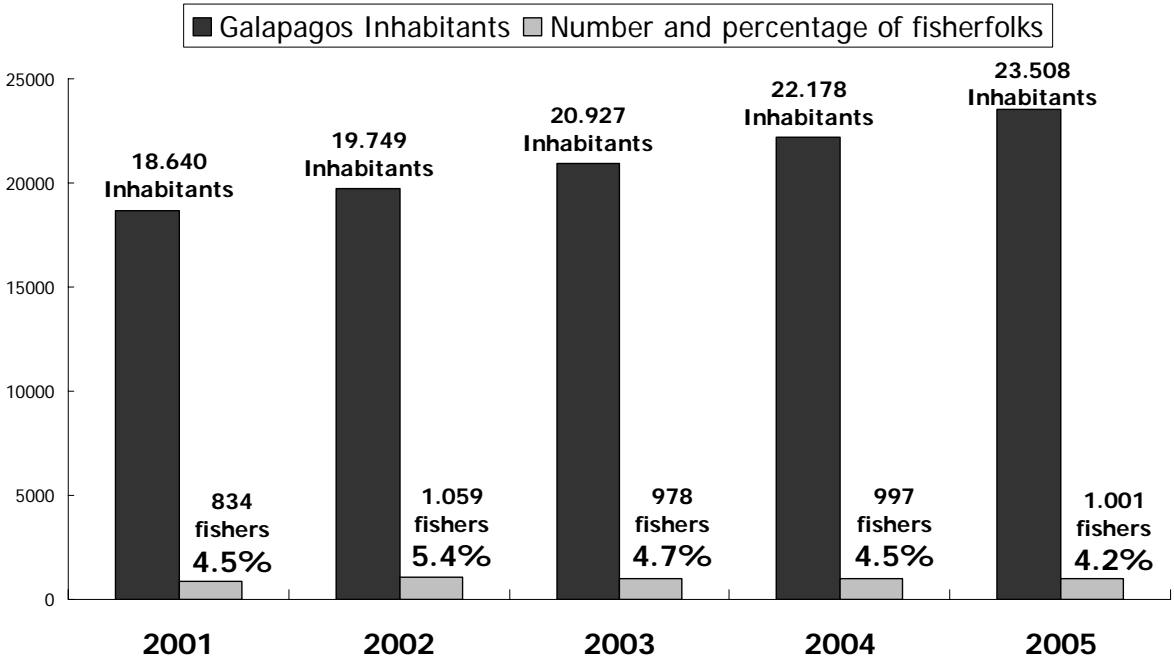
On the other hand, the last census of the Galapagos Islands residents was performed in 2001. For that year, it was calculated that 18,640 people were living in Galapagos. Nevertheless, according to more recent calculations and according to the statistical

data of the “Ecuadorian National Institute of Censuses” (INEC), at least 23.508 inhabitants are living in Galapagos at this moment in 2005.

(Table 4)
Galapagos Inhabitants during 2001 and 2005³⁰
 Source: INEC and JICA Survey

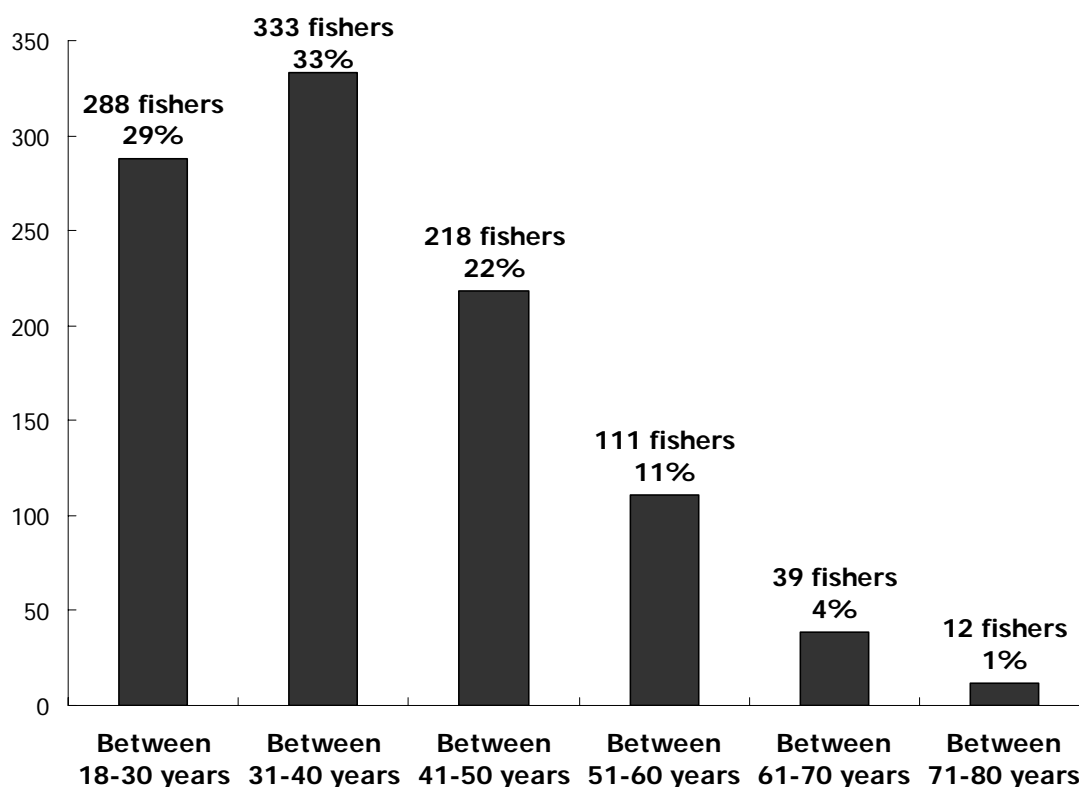
	2001	2002	2003	2004	2005
San Cristobal	5.633	5.864	6.104	6.355	6.615
Santa Cruz	11.388	12.174	13.014	13.912	14.872
Isabela	1.619	1.711	1.809	1.912	2.021
Total	18.640	19.749	20.927	22.178	23.508

(Fig. 35)
Average of the number of fisherfolks registered at the GNP versus Galapagos Inhabitants during 2001 and 2005
 Source: INEC, GNP data base and JICA survey.



(Fig. 36)
Number and average of fisherfolks according to their ages
 Source: GNP database - JICA survey – Opinion Polls / question 5.

³⁰ This table was calculated according to the “Annual Growth Percentage” of the population in Galapagos provided by the “Ecuadorian National Institute of Censuses” (INEC). For San Cristobal is the 4.1%, for Santa Cruz is the 6.9% and for Isabela the 5.7%.



As we can see in Figure 37 (Number and average of fisherfolks according to their ages), the majority of the fishing community is conformed by people between 20 and 40 years old, actually 62% of the sector is among these ages. However, fisherfolks in general have an average of 15 years dedicated to the fishing activities.

Thanks to the survey with the fishing community and by comparing the results obtained in the investigation about the “Number of fisherfolks per island and category in 2005” (Fig. 6)³¹, with the results of the “Number and average of fisherfolks according to their ages” (Fig. 38) and Table 4, we can realize that 428 fisherfolks (almost 43% of the sector) are people *between 20 and 40 years old*, all of them are in the category of “fisherfolk”, some others 168 fishers (17% of the sector) are also part of this group, but these ones are in the category of “Fisherfolk – Boat Owner”. In another group with more than 41 years, there are 165 fishers (16% of the sector) in the category of “Fisherfolk” and 176 fishers (18% of the sector) in the category of “Fisherfolk – Boat Owner”.

The other 6% are mainly fishers who just have a fishing craft but them selves are not working as fishers, they are part of the category “Boat Owner”. 24 fishers are in the group of people between 20 and 40 years old and 34 fishers with more than 41 years who are manly over the 50 years.

(Table 5)
Number of fisherfolks per age according to their category

Source: PNG database and JICA Survey

³¹ Chapter 2, “General Aspects of the Galapagos Artisanal Fishing Sector” Fig. 6 -Number of fisherfolks per island and category in 2005-.

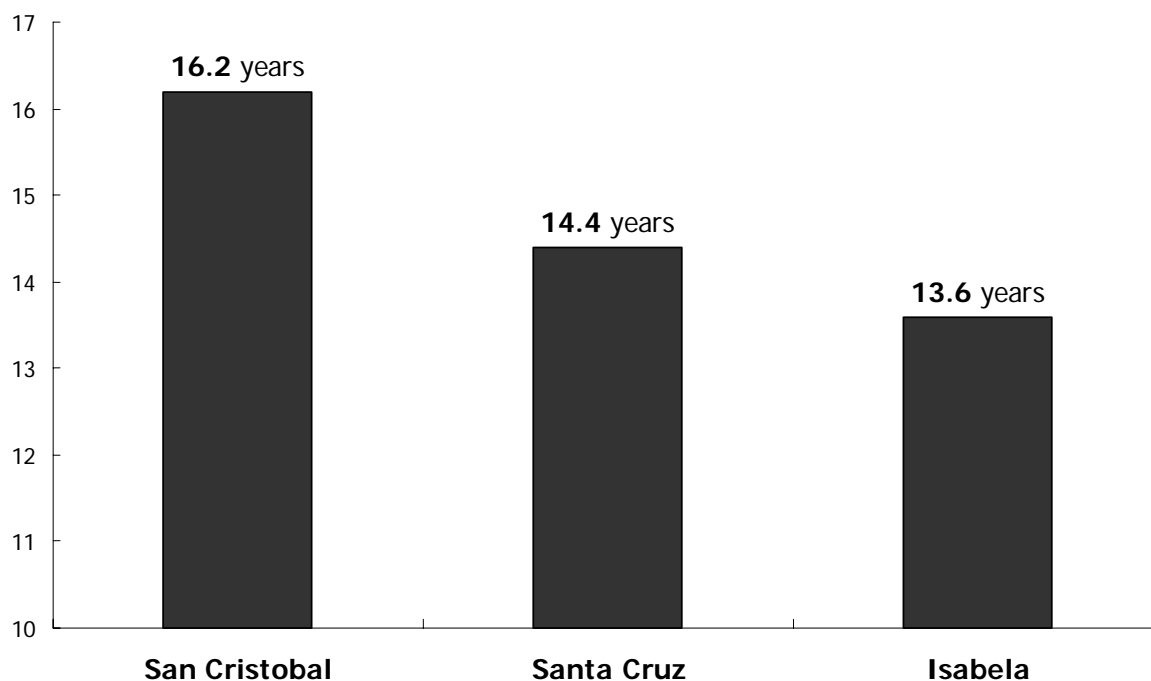
Boat Owner		Fisherfolk – Boat Owner		Fisherfolk	
Age	Number of fishers	Age	Number of fishers	Age	Number of fishers
20	2	22	1	16	1
25	1	23	5	17	1
26	1	24	1	18	2
29	1	25	3	19	2
31	2	26	6	20	11
32	1	27	5	21	8
33	2	28	8	22	16
34	2	29	6	23	27
36	2	30	11	24	17
37	3	31	12	25	30
38	2	32	14	26	23
39	3	33	23	27	32
40	2	34	4	28	27
41	2	35	10	29	22
42	2	36	12	30	23
44	5	37	6	31	23
45	1	38	13	32	15
46	2	39	12	33	21
48	2	40	16	34	27
49	1	41	9	35	15
50	1	42	12	36	20
52	1	43	12	37	19
53	2	44	8	38	12
54	1	45	10	39	21
55	1	46	10	40	19
57	2	47	11	41	15
58	2	48	7	42	16
59	1	49	3	43	13
60	1	50	10	44	10
61	1	51	6	45	10
65	1	52	11	46	9
68	1	53	5	47	4
70	1	54	7	48	5
71	1	55	7	49	12
72	1	56	7	50	14
78	1	57	8	51	7
	58 fishers	58	3	52	8
		59	4	53	7
		60	4	54	1
		61	3	55	4
		62	5	56	2
		63	1	57	1
		64	3	59	7
		65	2	60	1
		66	1	61	2
		67	1	62	2
		68	2	63	2
		71	1	64	3
		75	1	65	1

77	1	66	2
78	1	67	3
344 fishers		72	1
		75	2
		76	1
			599 fishers

Another important issue to consider about the Galapagos Fishing Community is the number of years that fisherfolks have been working in this activity. According to the survey we have the following results:

(Fig. 37)
Average of years per island according to the time that fisherfolks have been working in the fishing activities.

Source: JICA Survey – Opinion Polls / question 6.



In reality, fishing activities started in the Galapagos Islands in the 1940s and 1950s, but most of the fishers from that generation have already died. However, even when there are more than 200 fishers with more than 20 years working as fishermen, the percentage of the number of years is much lower because of the big number of new fisherfolks who have recently become part of the sector in this last decade.

Definitively, one of the focal problems of the Galapagos Fishing Community is the low profitability that fishermen receive from the fisheries. There exist two main fisheries in Galapagos which are usually performed in 6 months, starting in July and

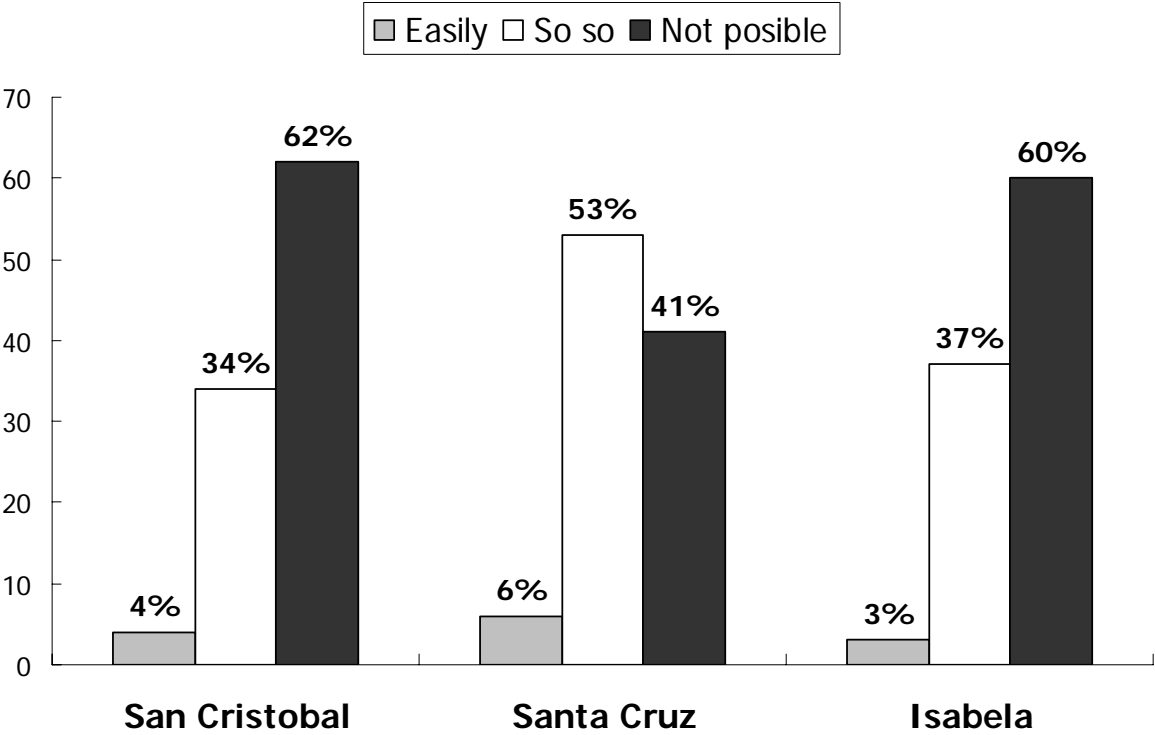
August with the sea cucumber fishery and from September to December for the lobster fishery. Fisherfolks say that these months of the year are not the best period for the fisheries because during this season, there are very bad weather conditions.

According to the last reports we can realize that for example during the Lobster fishery season 2004, the average gross income for each one of the 657 fisherfolks who participated in the fishery is \$ 761 dollars. Fishers only were able to captured 26 metric tons of lobster during the whole season. As everybody thinks, \$ 761 dollars for the 4 months of work was not worthwhile. About the sea cucumber fishery season 2004, the fishers who participated in the fishery had a gross per capita income of around \$ 5.078 dollars for the whole fishery (2004 was the best year since the last 7 years in terms of the profits from the sea cucumber fisheries).

If we amount both incomes, we have an average of \$ 5.839 dollars per fisherfolk (In the case that the fisher participated in both fisheries). We must understand that this profit is for the whole year, especially for the ones who depend only on these two fisheries, nevertheless, the majority of the fisherfolks have a second job.

The following information about the actual economic situation of the sector is important:

(Fig. 38)
Percentage of fisherfolks who can live with the fishing activities profits
 Source: JICA Survey - Opinion Polls / question 9



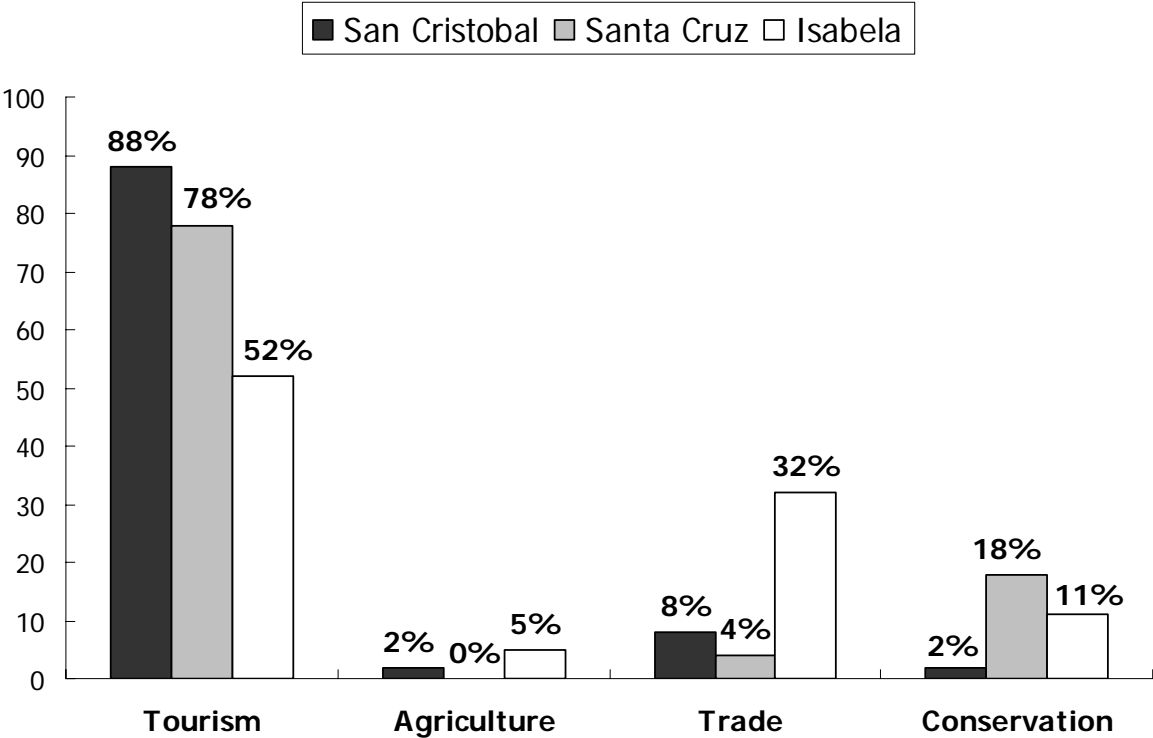
As we can see in Fig. 38, an average of the 54% of the fishing community in the three islands indicates that practically it is impossible to live in the Galapagos Islands working as a fisherfolk. In fact there are only a 4 or 5% of the fishing community

who say that it is easy to make a living in Galapagos with the fishing activities. These fisherfolks are mainly the owners of big fishing boats who give employment to other fishers.

Anyway, the majority of the fisherfolks would like to change ob activity in order to be able to maintain their families.

(Fig. 39)
Percentage of fisherfolks in search of others alternatives of work

Source: JICA Survey – Opinion Polls / question 10.



As we can see in this Figure No. 39 we can realize that only 52% of the fishing community of Isabela Island is interested in tourism activities in comparison to a representative 32% that prefers to have their own business. However, fisherfolks in Isabela are very realistic; according to many of them, it is not that they are not interested in the tourism but the boom of tourism in Isabela will not be soon, it will take time not only to be prepared but also to promote the Island.

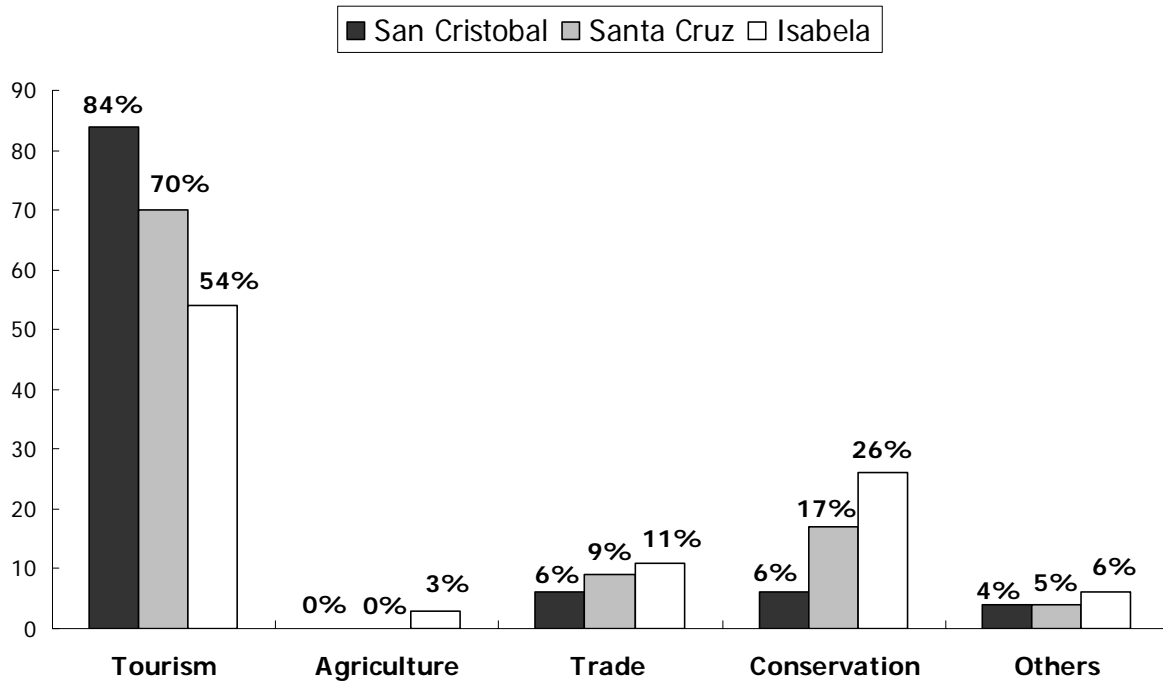
Besides, fisherfolks will need money for investing in the tourism and definitely, they need a lot of patient in order to obtain all the legal permits. For this reason many fisherfolks just prefer to look for a work in other sectors such as trade, agriculture or even conservation.

However, the majority of the fishermen, not only in Isabela but also in the entire archipelago agree that what the Galapagos Fishing Community needs is mainly “fishing alternatives”, for example the “long line fishery”.

(Fig. 40)

Percentage of fisherfolks according to the sector in which they would like their children to work

Source: JICA Survey – Opinion Polls / question 11.



An average of 69% of the fishing community would like their children to work on the Tourism Sector, and a 16% would like their children to work in the Conservation Sector. Most of them agree that the future of Galapagos is the tourism specially diving tourist activities; in any case, several fisherfolks just prefer to live the decision to their children.

About this matter and thinking of the future of the children, not only about fisherfolks' children but also about the future of the rest of the Galapagos young, the study "*Hardner & Gullison Associates, LLC*" performed in November 2004, reveals important details about the future and potential tourist activities that could be implemented in the Galapagos Islands. For example, the study indicates that "Sport Fishing" is the first in the list, followed by "Snorkeling" and "Surf".

Anyway, the Galapagos Fishing Community is concerned about the future of their children; they believe that every year the fishing activities are less and less profitable, and even when the tourist sector seems to be an alternative for the fishing community, it is not so realistic because, still they need money in order to invest in any of the activities proposed by the "Galapagos Tourism Chamber" (CAPTURGAL) in the "*Hardner & Gullison Associates, LLC*" Study.

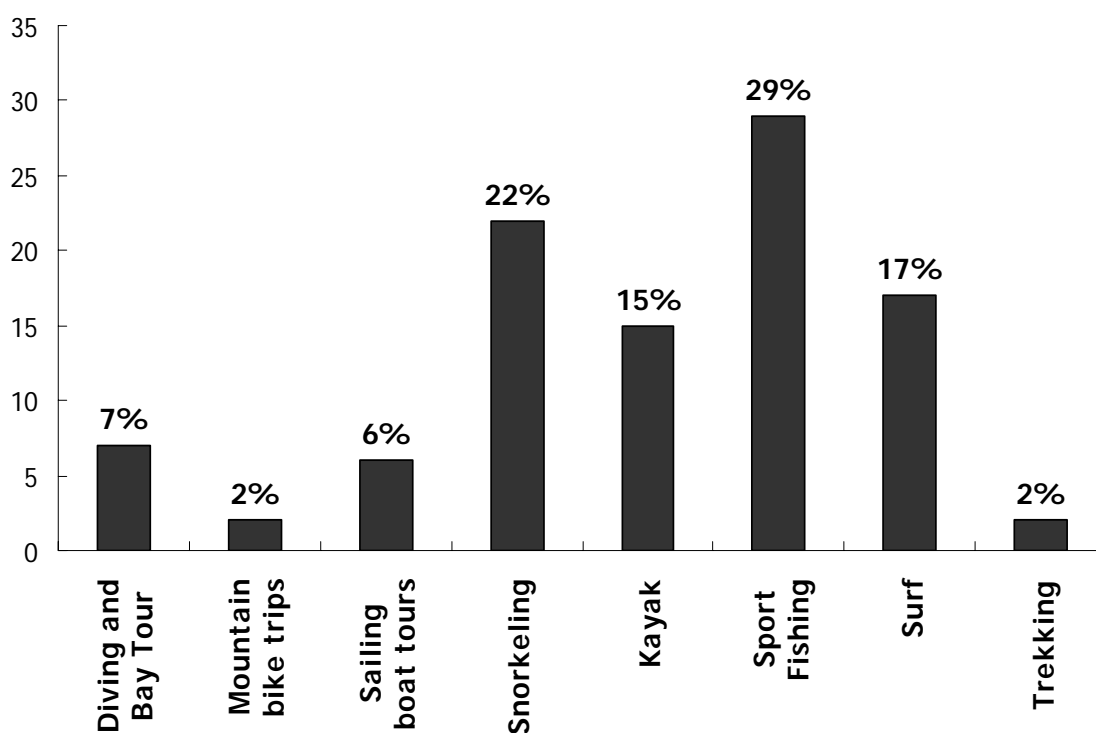
(Fig. 41)

Possible new tourist modalities as potential alternatives for the near future in the Galapagos Islands

Source: CAPTURGAL / JICA survey.

Percentage of Galapagos people of the Tourist Sector who believe that these

new tourist activities could be successful



On the other hand, there are several studies about the annual remunerations of the Galapagos fishermen, however, according to the local fishing community; most of the studies are outdated and in some cases the results do not show the reality of the sector. For example a recently study performed by "CAPTURGAL"³² indicates that the annual revenues of the Galapagos fisherfolks is USD \$9.682 per fisherfolk and USD \$14.363 for a fishing boat owner. This kind of information irritates the fishing community since it does not reflect the truth about the current economic situation of the Galapagos fisherfolks³³.

To mention an example, in 2004 (the year in which CAPTURGAL performed its survey), the annual remunerations average was around \$ 5.839 dollars per fisherfolk. This amount could be superior in the case of the fisherfolks who also participated in the "whitefish fishery", however, according to the investigation, this fishery could had increased the amount of 2004 earnings only in a 15%, which means a monthly income no bigger than USD \$146³⁴ from the "whitefish fishing" in the months of January to June. This average of 15% of the "whitefish fishery" is also corroborated by the Socioeconomic Study performed in 2002 by Juan Carlos Murillo from the Charles Darwin Foundation in the "Base Line Study of the GMR"³⁵.

³² CAPTURGAL is the "Galapagos Tourism Chamber". This institution performed in November 2004, a socioeconomic study with the support of "Hardner & Gullison Associates, LLC".

³³ These comments are given by the Directives of the Fishing Cooperatives.

³⁴ This amount is an average in the three islands, but if we consider the case of Santa Cruz Islands separately, we can realize that around 50 fisherfolks depend exclusively of the "whitefish fishery". According to them, they can make around USD \$400 per month since the local market for fresh fish is big enough for them. This group of fisherfolks is not looking for other work alternatives.

³⁵ Base Line of the Galapagos Marine Reserve, Chapter 24.

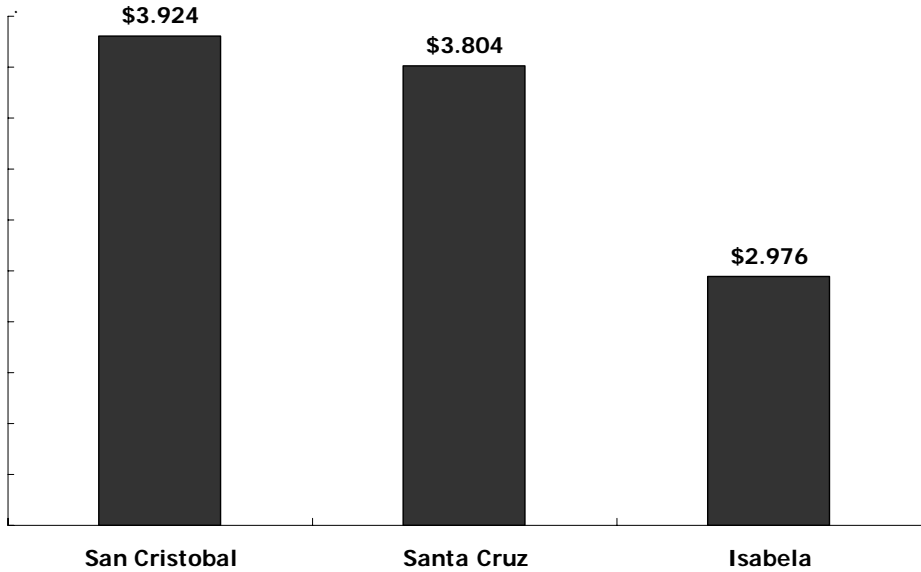
The "Base Line Study" indicates that USD \$663.704 was the gross income for the whole year of "whitefish fishery" in 2000; this quantity represents the 11% of the total fishing revenues in that year. However, the "Base Line Study" also emphasizes that a 33% of the fishery is not reported, many boats and wooden small crafts go fishing without the authorization of the Navy and for that reason it is not possible to carry out the monitoring. So according to this study, there is a 33% of error that has to be added to the results of the data collected in the "whitefish fisheries", this means that a from the total gross incomes of the Galapagos fisheries, a 14.3% comes from the "whitefish fishery".

This average is very close to the information obtained from the hearings and interviews with fisherfolks from the entire archipelago, according to "JICA Survey" performed in 2005, as it was indicated before, a 15% of the total gross incomes come from the whitefish fisheries. This result is similar than the one from the "Base Line Study." In any case, the average of the "whitefish fishery" profits varies from Island to Island.

- San Cristobal - 21% of 2004 profits came from "whitefish fishery".
- Santa Cruz - 17% of 2004 profits came from "whitefish fishery".
- Isabela - 6% of 2004 profits came from "whitefish fishery".

Comparison of the annual revenues of the fisherfolks per island

Source: JICA Survey 2005 (Fig. 20)



According to the "Comparison of the annual revenues of the fisherfolks per island" (Fig. 20), fisherfolks who live in Isabela Island have the lowest annual earnings; one of the reasons is that fishing operation costs (gasoline for example) are more expensive than in the other islands.

Besides "whitefish fishing" in Isabela is only performed by a few number of people because of the lack of market, and capture is usually more than enough. The whitefish fishing is mainly for local people and in Isabela Island there are only 2021 inhabitants and the cost of life is definitively more expensive because of the

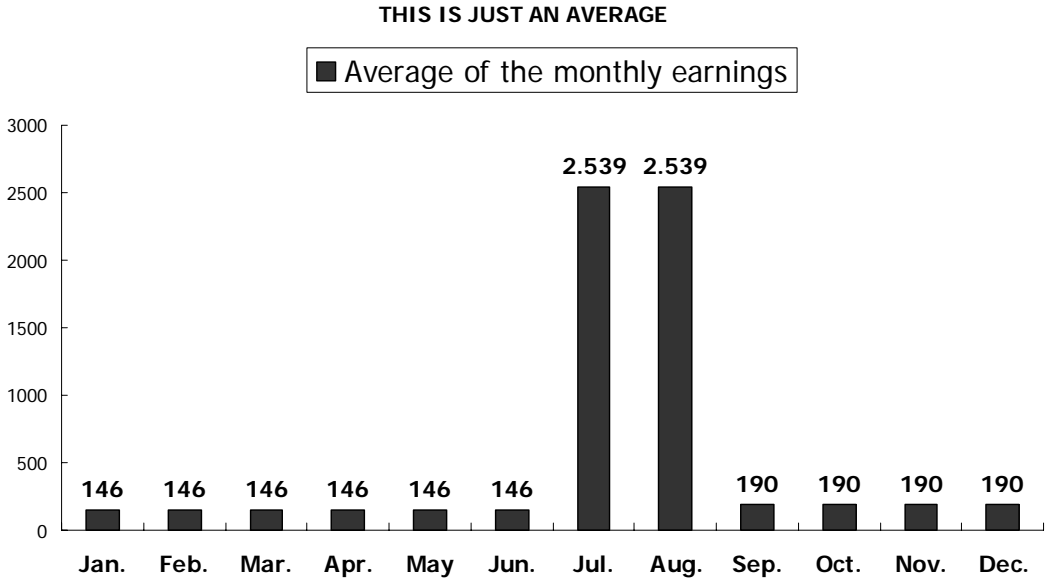
geographic situation. Isabela is the most far-away inhabited Island of the Archipelago, everything is more expensive.

According to local fisherfolks, most of the total earnings, at least the 85% comes from the main fisheries, sea cucumber and lobster fisheries so they need to be very careful with their expenses since they must save the money obtained from these fisheries for the rest of the year. This means that, at the present time, and according to the fisherfolks who were interviewed, Galapagos fisherfolks have a monthly earnings average of about USD \$297 dollars. However there are differences from one island to another.

Galapagos Fisherfolks monthly earnings per island.		
San Cristobal	Santa Cruz	Isabela
USD \$327	USD \$317	USD \$248

These quantities are just an average of the money that fisherfolks receive from the fishing activities; in fact the averages differ from month to month as we can see in the following figure:

(Fig. 42)
Earnings monthly average of the Galapagos fisherfolks in 2004 (USD dollars)
 Source: GNP Database and JICA survey – individual survey to fisherfolks.



The first 6 months of the year local fisherfolks only have the “whitefish fishery” option, but in July and August they might have the sea cucumber fishery and from September to December the lobster fishery, from this two fisheries, the sea cucumber fishery is the most profitable.

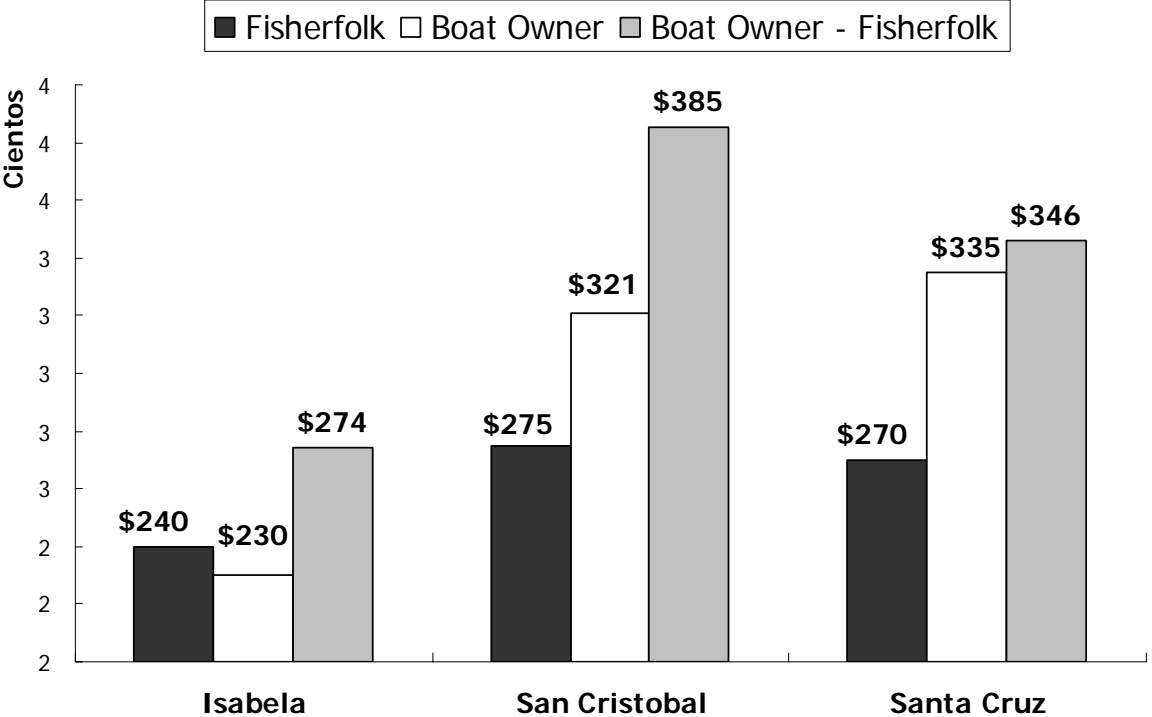
In 2004, the fishing conditions were pretty good for the sea cucumber fishery, and maybe that is why the CAPTURGAL study indicates good earning for the fishing community, however the situation has changed; the resource has been over-fished

so the profits are evidently lower. In the same year the lobster fishery was very bad, scarcely USD \$761 per fisher was the profits of four months of work.

Another important thing to mention, it is about the existent incomes differences among fisherfolks. According to their category and Island where they live, fishermen will make more or less money³⁶. Once again, fisherfolks from Isabela Island are the ones with fewer profits from the fisheries. For example meanwhile a fisher of San Cristobal in the Category of "Fisherfolk - Boat Owner" makes USD \$ 4272 in the year; a fisher of Isabela in the same category makes USD \$ 3.278. There are many reasons, but once again we must mention that operation costs are more expensive in Isabela.

Let's see for more details the following data information according to the results of the hearings and individual polls to the fishing community.

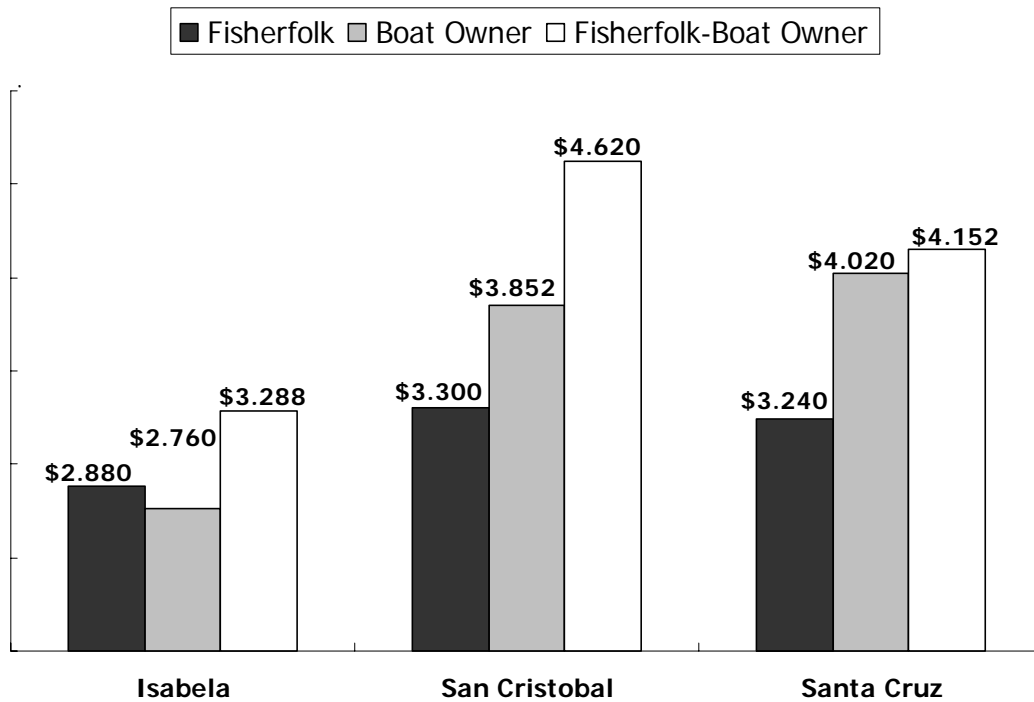
Monthly revenues of the fisherfolks per category and island (in US dollars)
Fig. 19 – Chapter 2



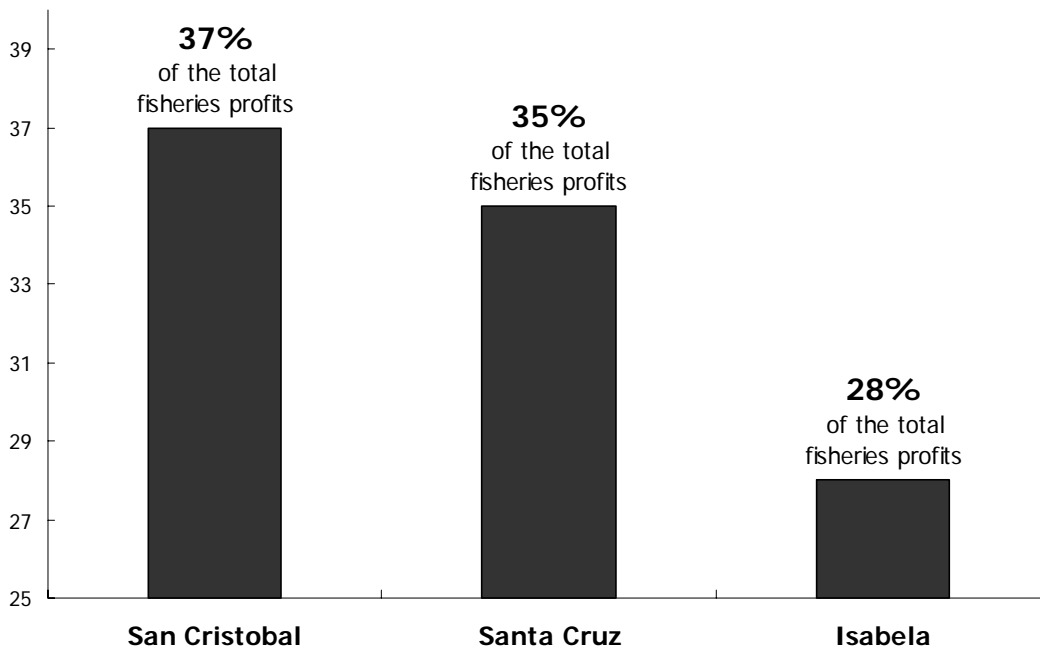
(Fig. 43)
Annual Earnings of Galapagos fishermen per category (in USD dollars)

Source: JICA survey – individual survey to fisherfolks / questions 12, 13.

³⁶ According to the Administrative Statute of the GNP, there exist 3 types of fishers' categories: 1) Fisherman, 2) Fishing Craft Owner and 3) Fisherman- Fishing Craft Owner.



(Fig. 44)
Percentage of the total fishing profits that fisherfolks receive, according to the Island where they live
 Source: JICA survey.



According to the results, we can see that fisherfolks from San Cristobal Island usually make more money than fisherfolks from Isabela and San Cruz. Anyway in Santa Cruz,

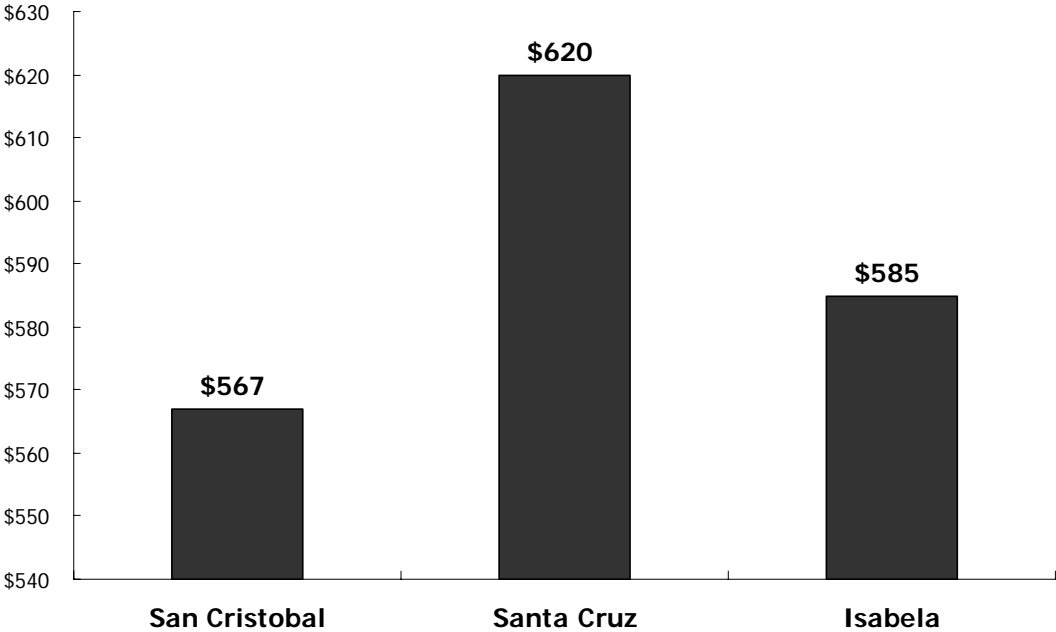
there are more alternatives for the local community, for example, business and tourism activities have a good potential.

On the other hand, the situation is not that good for the fisherfolks in Isabela Island, actually the situation is really sad for many of them because the possibilities are very limited, there are no tourist activities well developed so fisherfolks can see them as an alternative and the business are not so profitable since the local market is already saturated of small business. This reality generates a local problem since most of the economy in that Island depends on the fishing sector, if fishers have money they will buy at the stores and use the different services found in Isabela, but since that does not usually happen, most of the time, fisherfolks and their families live indebted.³⁷

However, in general we can realize that the average of the economic revenues per fisher in the three islands is very low and for this reason most of the fishers have a second job or at least are looking for other alternatives in order to be able of subsist and maintain their families.

(Fig. 45)
Average of the minimum quantity of money that a fisherfolk needs to live in Galapagos and maintain his family every month
(In USD dollars)

Source: JICA survey – Opinion Polls / question 14.



In this Fig. 45, we can see that fisherfolks of Santa Cruz Island need more money than fisherfolks of Isabela and San Cristobal Islands; this is because the prices for renting an apartment are very high in Santa Cruz.

³⁷ This critical situation is also seen in many fishers from Santa Cruz and San Cristobal. Several Galapagos fishermen live indebted, but of course many of them also need to use the money wisely.

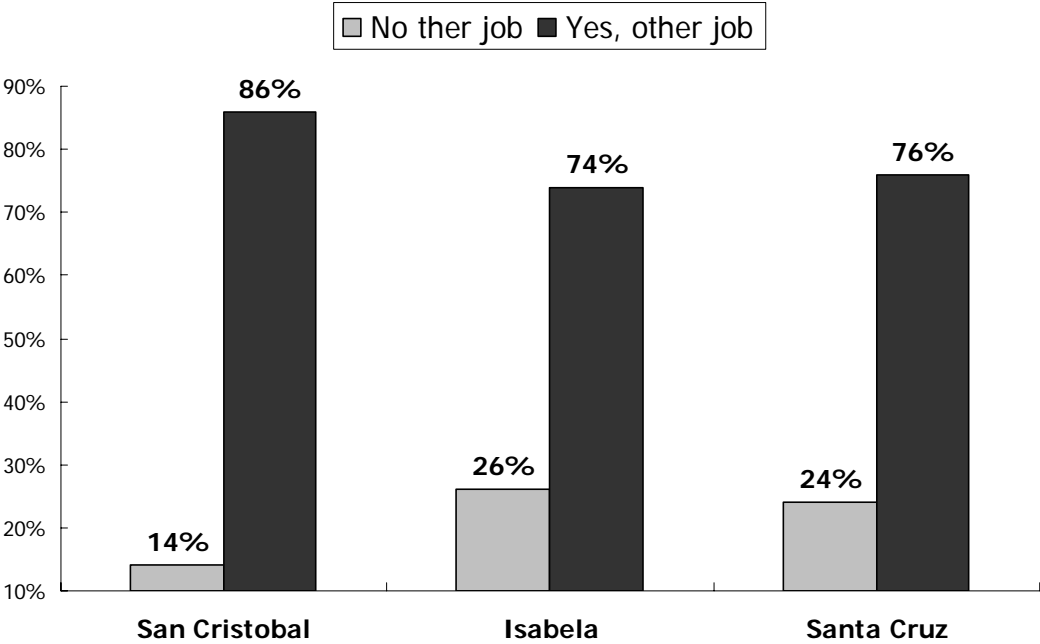
On the other hand, in Isabela Island, even when the prices for renting a house are less expensive, the prices of the food, medicine and other basic needs are definitively more expensive.

In conclusion, in the three islands, fisherfolks are obligated to have a second job to be able to live in Galapagos. For example, in Santa Cruz, the majority of the fishers looks for alternatives in the tourist sector or tries to start their own business.

In San Cristobal Island the tourism is not as good as in Santa Cruz, however they also have more opportunities than fishers of Isabela Island where most of the fisherfolks are just obligated to survive with the money that they make from the fisheries.

(Fig. 46)
Percentage of the Galapagos fisherfolks who supplement their revenues with other activities

Source: GNP Database and JICA survey – Opinion Polls / question 15.



There is a very important fact that we must understand about the data of Figure 46. The 26% of the fishing community in the range “No other job” in Isabela Islands, it does not mean that these fisherfolks do not need other job, this neither means that their revenues are good enough to survive. Thus, we must be clear that this 26% of fisherfolks are in this category because they are not able to find a job, so the reality is that in Isabela Island almost 100% of the fisherfolks need to supplement their revenues in order to survive in that Island.

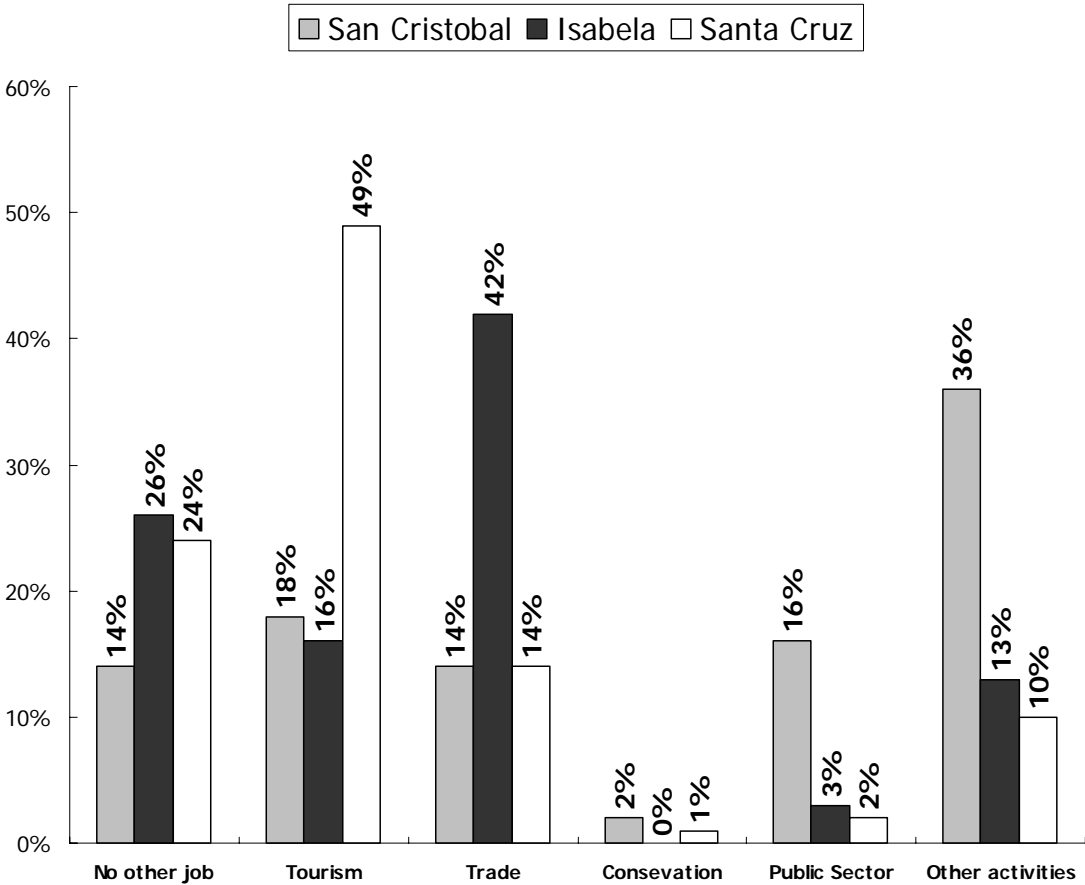
On the other hand, there are a 14% in San Cristobal and a 24% in Santa Cruz of fisherfolks who are in the same range of “No other job”. In both cases, generally the profits that fishers receive from the fishing activities are almost enough, at least to

cover the basic needs. However in these two Islands, fisherfolks are also looking for other alternatives of job. According to the results of the survey, there are at least 5 other activities that fisherfolks usually carry out in order to supplement their revenues, in order of preference, these are the following:

- Tourism Activities.
- Trade Activities³⁸.
- Conservation Sector³⁹.
- Public Sector⁴⁰.
- Others⁴¹.

(Fig. 47)
Percentage of the Galapagos fisherfolks who supplement their revenues with other activities / detail of activities

Source: GNP Database and JICA survey – Opinion Polls / question 15.



Chapter 7

³⁸ Small businesses, only for local market.
³⁹ There are some fisherfolks who participate from time to time in Coastal Clean ups.
⁴⁰ Some fisherfolks have a job in government's institutions, the Municipality for example.
⁴¹ In some cases, fisherfolks work as carpenters, bricklayers, bakers, etc.

Social structure and internal differences of the Artisanal Fishing Community

The differences about history, economy, social structure and psychology among the populations of the three Galapagos inhabited islands, are also found in the fishery community. Basically there are four important factors to consider:

The island where a fisherfolks resides is one of the principal facts to consider about the internal diversity and social characteristics of the fishing sector. For example, fisherfolks of San Cristobal Island, in general, feel proud of living in the Capital of the Province and having the most artisanal and ancient fishing traditions. This fact, sometimes, results in a condition of superiority in some individuals.

Probably for this is the reason in the Study "The Beliefs & Perceptions of Fishermen Regarding Management Actions, Regulations, and the Protection of the Galapagos Marine Reserve, Ecuador", carried out in 2002 by Ryan Finchum it is emphasized that fisherfolks of San Cristobal support more frequently the legal actions taken against people who makes environmental crimes such as sharks fins fishing.

The biggest number of fishing boats and fisherfolks are in the capital of the Galapagos Islands, "Puerto Baquerizo Moreno", eventually the biggest number of fisherfolks dedicated to the traditional fisheries of "cod" and "white fish" are mainly part of the San Cristobal fishing community. However there exist a small group of fisherfolks in Santa Cruz Islands who are only dedicated to the "whitefish fishery".

The incomes that fisherfolks of San Cristobal can get from the fisheries are not enough to make a living so even when they put their expectative on the sea cucumber and lobster fisheries, they are obligated to have a second job. However, many fisherfolks of San Cristobal go fishing everyday on small launches.

They usually fish the following types of fish: "Galapagos thread herring", "almaco jack", "wahoo", "yellowfin tuna", "misty grouper", "swordfish", "giant hawkfish", "white salema", "black and blue marlin", "cod" and the traditional "Galapagos mullet" .

The dry-salted fish for consumption during Easter is one of the principal fisheries in San Cristobal too; this fishery is developed by 7 or 12 fishermen per each big fishing boat. There are 34 boats in San Cristobal in comparison to San Cristobal with 22 and Isabela only 9 boats.

According to many fisherfolks of San Cristobal, one of the advantages, especially for the fishing commercialization is the existence of a private storage center" named "GRUMODUS". This center belongs to a man from Guayaquil who manages the

business through a resident of San Cristobal. They buy all the fish from the local fisherfolks and then they export it to the mainland. However, the leaders and some fisherfolks say that this Storage Center is just a second alternative because for them it would be definitively better to have their own Storage Centers operating.

Differing from the fishermen of San Cristobal who usually go fishing in big boats to the "white fishing" and others go to the daily fishing on small launches, the majority of the fisherfolks of Santa Cruz Island have big expectations and they are mainly dedicated to the sea cucumber and lobster fisheries when the authority opens the fisheries. They go fishing on small launches and just a few join the 22 fishing boats that exist in Santa Cruz.

Of course, in Santa Cruz there also exist a small group of around 50 fisherfolks who are dedicated exclusively to the daily "whitefish fishery", they usually sell the fish to the community on a traditional place called "Muelle de Pelican Bay".

A good advantage of this group of fisherfolks is that they do not depend on the sea cucumber and lobster fisheries, besides this group of fishers do not have a second job since according to them, they are quite satisfied with the profits they receive of this fishery. They sell all the fresh fish to the local community which is the biggest in the Galapagos Islands, 14.872⁴² people live in this Santa Cruz, so the local market is quite enough for the 50 fisherfolks dedicated to whitefish fishing.

In any case, most of the fisherfolks of Santa Cruz as in the other islands have extra activities so they can be able to make a living. We need to note that fisherfolks of Santa Cruz have more possibilities to find alternatives in the tourism sector, since Puerto Ayora is the principal island in terms of tourism.

Most of the tourist boats operate from this island and the trade businesses definitively have better possibilities than in San Cristobal and Isabela.

About fisherfolks of Isabela we can mention that the fishing community of this island is the smallest one, only 24 percent on the whole sector, exactly 238 fishermen live in this Island. Anyway, Isabela is a small community, only 2.021⁴³ people live over there and 200 families depend on the fishing activities so practically the economy of the island is straight connected to the fisheries.

An unfortunately reality of Isabela Island is that, at this moment there are no many choices and potential incomes sources for the community of Isabela, so we can say that there exist a certain level of poverty in Isabela. Cost of life in this island is definitively more expensive, and the general gross income of the fishing community in Isabela is very low, fisherfolks are just obligated to survive with an average of a monthly income of around USD \$250⁴⁴.

⁴² See Table 4 "Galapagos Inhabitants during 2001 and 2005" in Chapter 6.

⁴³ See Table 4 "Galapagos Inhabitants during 2001 and 2005" in Chapter 6.

⁴⁴ See Fig. 20 "Comparison of the annual revenues of the fisherfolks per island" in Chapter 3.

In some cases fisherfolks are able to have a second job but most of them do not have other alternatives. Maybe this is the reason why according to the records of the GNP many cases of illegal fisheries of sea cucumber and lobster and sharkfins fishing are common in Isabela, but of course these kinds of illegalities are also seen in the other islands.

On the other hand, several residents have a lot of expectations on the tourism activities however, it will take time to develop the tourism in Isabela, in reality people will need not only the money but also training and the legal permits of the Galapagos National Park so they can perform tourist activities. Anyway, the fishing sector has a very open mind to the change of activity and many of them are very enthusiastic about Ecotourism.

In general, as we can see, there exist marked differences inside the fishing community depending where the fisherfolks resides. The three islands San Cristobal, Santa Cruz and Isabela have different realities so it is a fact to consider about the internal diversity and social characteristics of the sector.

A second bound factor of the internal variety which is connected to the first one is the geographical origin of the fisherfolks. A significant number of fisherfolks moved to the Galapagos Islands or at least started to fish once they moved to the Archipelago during 1982 and 1984. In fact according to natives and older migrants, the first large in-migration of coastal fisherfolks to the Galapagos coincided with the lucrative boom of lobster fishing.

On the study "A Case Study of Human Migration and the Sea Cucumber Crisis in the Galapagos Islands" carried out by Jason Bremner M.P.H., and Jaime Perez it is mentioned that these migrant fisherfolks introduced new fishing techniques that were already being used on the coast, such as the trident, which is used for spearing lobster, and the air compressor, which is used for breathing during diving.

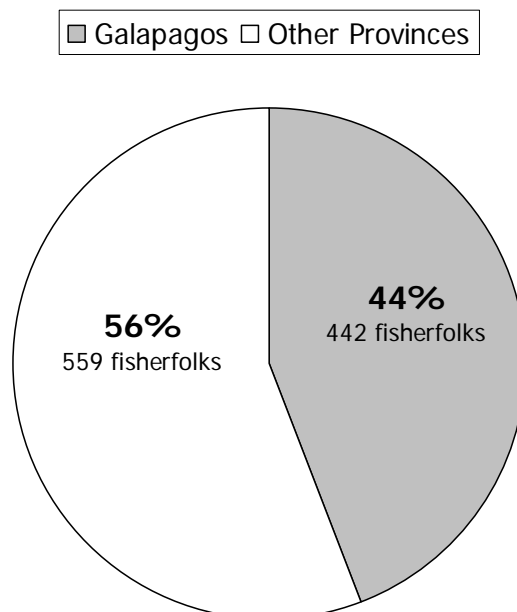
Additionally, the investment capital of the lobster exporters and the knowledge of coastal fisherfolks led to the improvement of boat materials, construction techniques, and means of propulsion. During the same period, there was a dramatic increase in international trade of sea cucumbers for food⁴⁵. The fishery grew rapidly, and by 1991 was exhausted commercially along the Ecuadorian mainland.

Again many fisherfolks moved to the Galapagos Islands during the beginning of the boom of the sea cucumber and in due course these fishermen influenced in the Galapagos fishing community. Inside the Galapagos fishing community there is not evidence of the existence of fisherfolks without permanent residence; according to the law, all of the members of the fishing sector are to be legally recognized for the INGALA as permanent residents. At this moment more than 50% of the Galapagos Fishing Community comes from the Continental Ecuador.

⁴⁵ "A Case Study of Human Migration and the Sea Cucumber Crisis in the Galapagos Islands" carried out by Jason Bremner M.P.H., and Jaime Perez.

(Fig. 48a)
Number of Galapagos fisherfolks according to their origin Region.

Source: JICA Survey - Opinion polls / question 4



According to the research and confirmed by the database of the Galapagos National Park, only 442 fishers are natives of the Galapagos Islands, the rest of the fishing community, 559 fishers that represents the 56% of the entire sector are from other provinces of the Continental Ecuador, mainly from the Coast⁴⁶.

On the other hand, among the fishing community there are only 18 women who represent the 2% of the sector, these women are in the category of "Boat Owner", however, some fisherfolks wives usually support their husbands performing different economic activities by different organized women's groups⁴⁷.

A third aspect to consider about the internal diversity and social characteristics of the Galapagos Fishing Community is the time that fisherfolks have been performing fishing activities. In general, Galapagos fisherfolks have started fishing once they moved to the Archipelago; however, there is a significant number of fisherfolks who have started fishing when they were young so these ones have between 15 to 20 years in the fishing activities.

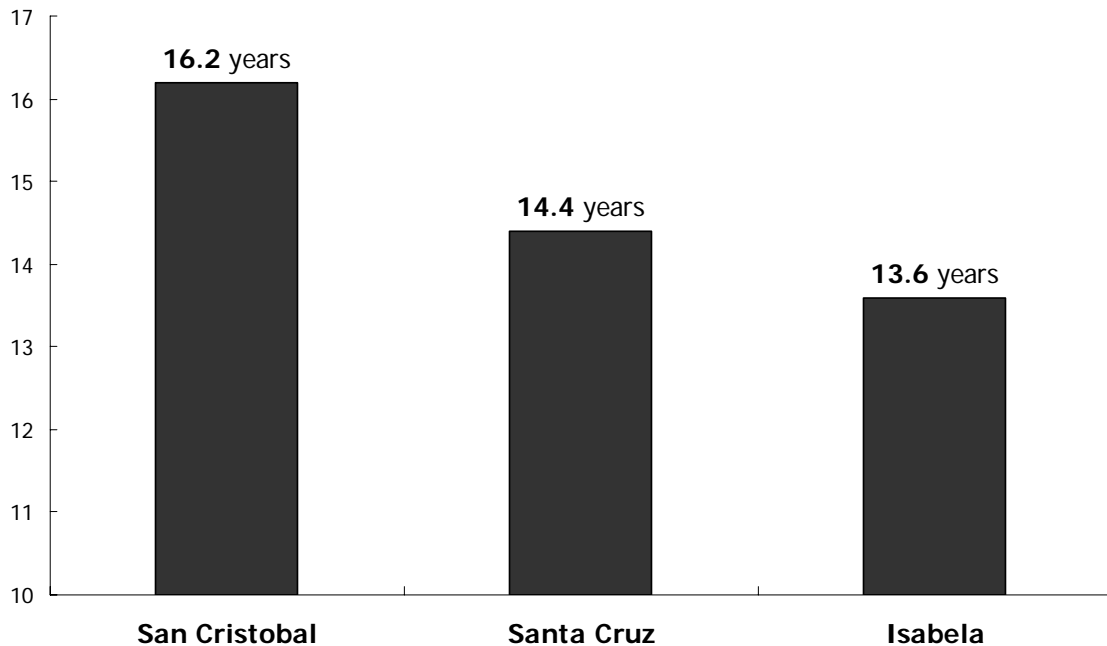
In Fig. 37 we can see that fisherfolks of San Cristobal Island have the highest average concerning the number of years working in the fishing activities, the average is 16.2 years, followed by fisherfolks of Santa Cruz with an average of 14.4 years and finally fisherfolks of Isabela Island with an average of 13.6 years. These results are according to the history of the Galapagos Artisanal Fishing Community, San Cristobal is indubitably the oldest Island in terms of fishing activities.

⁴⁶ See Fig. 48b "Number of Galapagos fisherfolks according to their origin Region" in Chapter 7.

⁴⁷ See Chapter 11 "The Women's organized groups and the Galapagos Fishing Community".

Average of years per island according to the time that fisherfolks have been working in the fishing activities.

Source: JICA Survey - Opinion polls / question 6 – Fig. 37



A forth aspect to consider about the social structure and internal diversities of the Artisanal Fishing Community is the status of the fisherfolks, these ones could be active or inactive fishers. There are several fisherfolks who are active only during the “sea cucumber and lobster fisheries”; but during the rest of the year are inactive. In general this type of fisherfolk usually has a second job but still they take advantage of the main Galapagos fisheries.

Fisherfolks of Isabela Island are also part of this first group, but we must be clear that, they are in this group because they have no other choice. So, in some cases fisherfolks only participate in the “sea cucumber and lobster fisheries” because they have other alternatives and jobs for the rest of the year.

On the contrary in the case of fisherfolks of Isabela, many of them become inactive 6 months in the year because of the circumstances; no other work alternatives are available in the Island where they live.

This situation represents a problem, of course they still can participate in the “whitefish fishing”, and however it is not really participate because the local market is too small, so it is not realistic to depend the rest of the year on the “whitefish fishery”.

There is another type of fisherfolk who depend all the year exclusively on the fishing activities. Besides “sea cucumber and lobster fisheries”, these fishers participate in the “whitefish fishery” too. This type of fisherfolk is found mainly in San Cristobal and

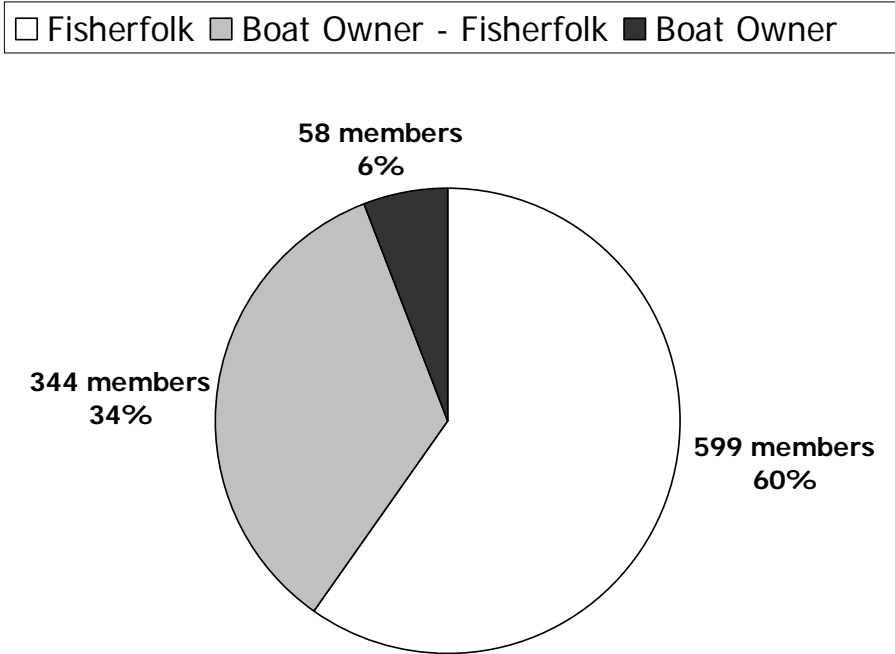
Santa Cruz. For example, Santa Cruz has a permanent group of 50 fisherfolks who are active in the fishing activities the entire year, they carry out "whitefish fishing" mostly all the year. According to them, they have no necessity of changing of activity, they prefer to keep fishing.

Finally, there is a fifth important aspect to consider about the social structure and internal diversities of the Artisanal Fishing Community. This is the different categories of fisherfolks. There are 3 categories of fisherfolks well defined by the GNP and the Fishing Cooperatives:

- Fisherfolk.
- Boat Owner – Fisherfolk.
- Boat Owner.

According to the database of the GNP, 60% of the entire Galapagos Fishing Community are in the Category "Fisherfolk", but the 34% of the sector besides being the boats owners they also participate in the fisheries, so these ones are in the Category "Boat Owner – Fisherfolk". Only a 6% of the Fishing Community is in the Category "Boat Owner", these one do not fish, they just rent the boats.

(Fig. 5)
Number of fisherfolks per categories in 2005.
 Source: JICA Survey - Opinion polls / question 2



Category No 1.

Fisherfolks in the first group "Category Fisherfolk" does not need to invest in the fisheries; they just go fishing in the boats or launches that belong to other fisherfolks. However they receive fewer profits and usually these are the ones with more financial problems.

Once the owner separates from the earnings the money for the operation costs, fishers in this Category 1 usually receive 50% of the fishery profits; however this percentage could vary according to the decision of the Owner. In the case of Isabela Island it happens something singular, "Boats Owners" need to invest in the operations costs almost 100%, so the profits are very low for them too.

Category No 2.

"Boat Owner – Fisherfolk" is the name of fisherfolks in this category given by the GNP. 344 Galapagos fisherfolks are "fishing boat owners", anyway this type of fishers besides having the boats or launches, they participate directly in the fisheries too. Mainly is because, just renting the launches is not enough to make a living or survive in Galapagos, for that reason they also go fishing.

Relationships between first group and fisherfolks of this category are quite normal; boats owners can see the efforts of their fishing partners so is easier for them to recognize the work of the fishers in Category No 1. It is not usual to hear complaints about boats owners because these ones also participate in the fisheries.

Category No 3.

Only 58 fisherfolks that represent the 6% of the Galapagos Fishing Community are in this Category. These fisherfolks usually have more than one fishing boat. In several cases, they possess big boats so they just rent their fishing fleet. There exist complains about this group of fisherfolks, particularly in the sense that this group is the one that takes the best piece of the fisheries.

However, the truth is that fisherfolks of the Category "Boat Owner" need to invest a lot of money in the fisheries, and sadly sometimes they lose their investment because of bad weather conditions. Fisherfolks in this Category usually have a second job in other sectors or they have their own business.

Effects of the Immigration in the Fishing Community

According to the "Human Population impacts in the Galapagos Islands Study" of the "American Association for the Advancement of Science, Washington, D.C.", fisheries in Galapagos are presently in a critical situation. There exist many reason, such as the over fishing, but one important aspect to mention is the effects of the immigration.

With increased migration to Galapagos, one of the fallouts has been growing interest from mainland Ecuadorian fishing companies and middlemen buyers in what resources could be extracted and sold on the international market. This has been fueled by Asian markets for many of these products as well as capital from those countries. These interests have moved into Galapagos from the mainland and are using the local traditional fisherfolk of Galapagos as their labor source, and loaning them money or arranging bank loans to purchase boats and equipment.

The local fishermen are abandoning their traditional fisheries in favor of these new short-term, rapid economic gain, export product ones. Likewise, these lucrative operations caused a rapid influx of poor fishermen from the mainland of Ecuador as new migrants. This interest in making rapid profits from massive extraction of certain marine species for export to specialized foreign markets has reached Galapagos precisely because of the condition of fisheries worldwide.

Interested parties from mainland Ecuador and their foreign market contacts already are looking for new species to exploit in massive fashion in Galapagos. These are true rape and pillage fisheries. The end result is that a small number of companies and individuals end up considerably wealthier.

The poor fisherfolks who are involved in the process experience a brief increase in living standards, but most of them fall back into poverty once again when the resources are reduced to economically and, almost always, biologically unsustainable levels. The intermediary buyers and companies abandon the fisherfolks. The government is left with another group of poor for whom it must somehow look for alternatives. The pressure is even greater than before because many migrants have flooded into the area and brought their families and even relatives, when the fishery was expanding.

The marine environment is ever more impoverished in terms of its biodiversity, with far reaching consequences in terms of long-term destruction of ecosystem structure, functions and dynamics, and, therefore, elimination or severe reduction of the country's future potential and options for economic and social development.

Interviews revealed that a large part of this wave of migrants arrived through family networks that already had been established through earlier migrations to the Galapagos. Families who had migrated to the Galapagos during the lobster boom or earlier helped family members and neighbors migrate to the islands.

Although the Asian exporters arrived in the Galapagos with their own divers, they also taught the resident fishermen the techniques of collecting, drying, and cooking the sea cucumbers. It is indisputable, that growing numbers of fishermen are changing the social, political, and most importantly, economic context of the Galapagos.

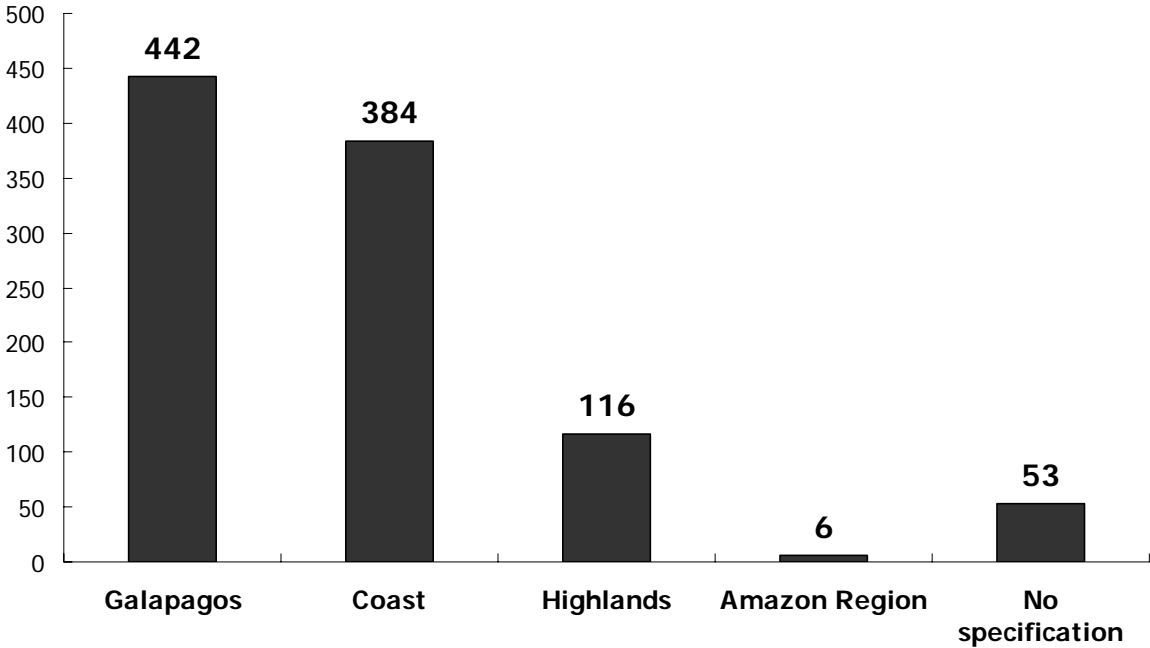
A fisherfolk interviewed in San Cristobal declared that at the beginning of the 1990s the fishing community was relatively small but suddenly because of the lobster and sea cucumber fisheries, the number of fishers was increased.

Many fishers from the Continental Ecuador moved to Galapagos with their families to make a living here in the archipelago. For that time, there was not a good migration control so it was not so difficult to move to Galapagos. At this moment, the fishing community is formed by 1001 fishers⁴⁸ with a total of 1694 sons⁴⁹.

According to the database of the Galapagos National Park, only 442 fishers are from Galapagos, the rest of the community, 559 fishers are from other provinces of the Continental Ecuador⁵⁰.

(Fig. 48b)
Number of Galapagos fisherfolks according to their origin Region.

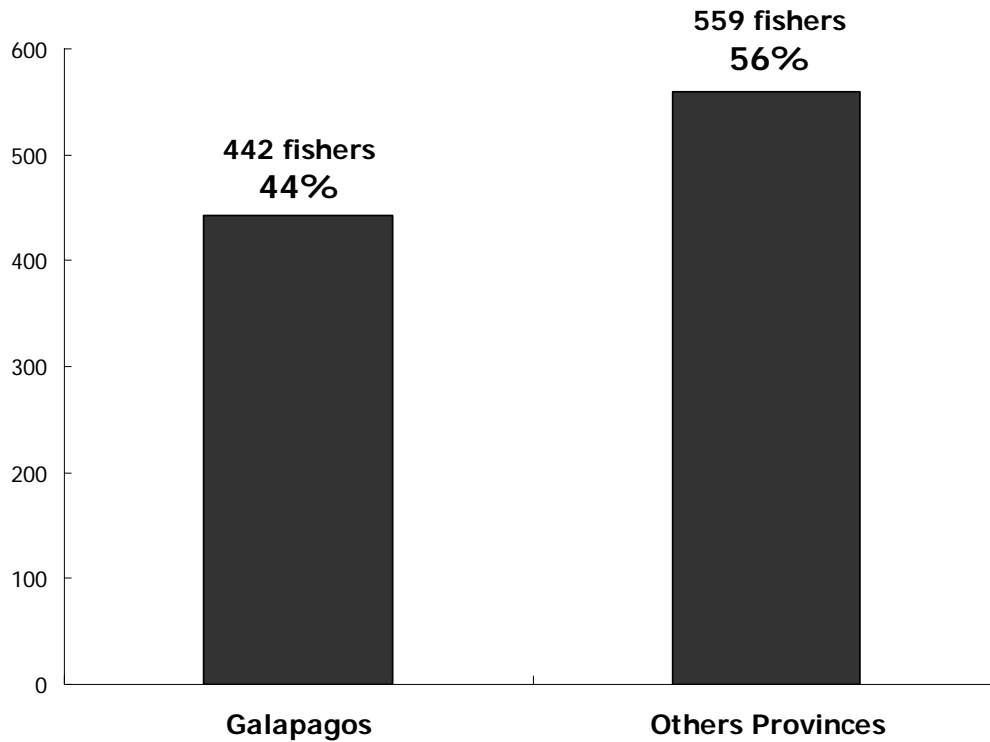
Source: GNP reports and JICA Survey 2005.



⁴⁸ See Fig. 7, "Number of active and suspended fishermen in 2005", Chapter 3.
⁴⁹ See Fig. 13, "Number of Galapagos fisherfolks' sons", Chapter 3.
⁵⁰ See Fig. 12, "Number of Galapagos fisherfolks according to their origin Province", Chapter 3.

(Fig. 49)
Comparison of the number of Galapagos fishers versus fishers from others Ecuadorian Provinces.

Source: GNP reports and JICA Survey 2005.



As we can see, only 44% of the Fishing Community is from Galapagos, the rest, 556 fisherfolks which represents a 56% of the Fishing Community have moved to the Galapagos Islands for different reasons and interests but mainly because of fishing motives.

However, according to the version of many fisherfolks, the increasing of the Galapagos Fishing Community occurred during the boom of the lobster and sea cucumber and eventually this immigration has generated several conflicts for the entire fishing sector.

Past, present and future of the Galapagos Fishing Cooperatives

At the beginning of the 1980s, the Galapagos Fishing Community reached an important and significant achievement, fisherfolks started to organize themselves into "Fishing Cooperatives".

The first Galapagos Fishing Cooperative was "COPESAN", created in San Cristobal Island. This cooperative started its activities and operations at the end of 1970; however, it was legally recognized in 1983. It is not strange that the initial impulse for creating the fishing cooperatives took place in San Cristobal, since this is an island with the oldest fishing traditions (See Chapter 5 "History of the Fishing Communities and the Artisanal Fisheries in the Galapagos Islands").

At its beginnings, "COPESAN" was an isolated case and its existence was very nominal until 1990. An important impulse for the Cooperative "COPESAN" and eventually for the whole fishing sector took place at the beginnings of the 1990s when the cooperatives of the other islands were founded; with this impulse, also the Cooperative COPELAN was revitalized. The origin of the real operation of the fishing cooperatives was connected to the conflicts related to the fishing activities restrictions, for example the seven years banning of lobster fishery and the banning of sea cucumber fishery were decreed in 1992, these prohibitions made the fishing sector to act in response and eventually the cooperatives started to work together. Initially the president of COPELAN was Mr. Carlos Ricaurte who lives in San Cristobal Island; he managed the cooperative in the middle of internal conflicts trying to help the sector to reach their goals.

The last fishing cooperative created in Galapagos is "COPEPROMAR"; this cooperative was born as a result of internal problems that finished in the separation of the oldest Galapagos fishing cooperative "COPELAN". This happened at the beginning of 1996 as a result of internal problems and because of political discrepancies among a group of fisherfolks. Up to 1997 the four Galapagos fishing cooperatives COPELAN, COPAHISA, COPROPAG and COPEPROMAR were still relatively small. None of them was founded with more than 35 members. The first managerial project managed by the Galapagos fishing cooperatives arose with support of the recently created Provincial Council of Galapagos. By the middle of 1997 the "Provincial Prefect" made a donation of \$ 90 millions of sucres (Ecuadorian currency before the dollar). This budget was given to all the fishing cooperatives (except COPEPROMAR in San Cristobal) so they can install a fishing storehouse. None of those fishing storehouse survives at the present time because of bad administration⁵¹.

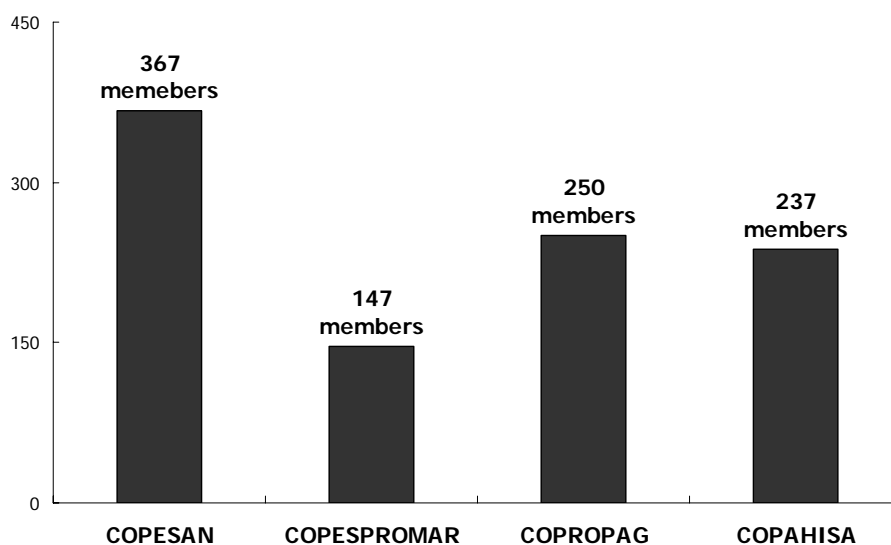
⁵¹ Local newspaper "El Colono" Year 3, August No. 23.

According to several fisherfolks, fishing activities in the Galapagos Marine Reserve were great during the decade of the 1990s but at the same time the fishing community started to increase very quickly. During the existence of “El Grupo Nucleo” (1996-1998) the fishing leaders impelled that their cooperatives had representation in the management instances for the GMR created by the Galapagos Special Law (the Participatory Management Board “JMP”, the Inter-Institutional Management Authority “AIM” and the “Council of INGALA”). An important achievement reached during that time was to obtain a decree given by the “Ecuadorian Environmental Ministry” in 1998 in favor of the Galapagos Fishing Community . This decree establishes that any fisherfolk who wants to fish in the Galapagos Marine Reserve, must be obligatorily member of any of the Galapagos Fishing Cooperatives and also be permanent resident of the Galapagos Islands⁵².

However, even with this governmental Decree, the Galapagos fishing cooperatives started to increase rapidly, mainly because of the boom of the sea cucumber and lobster fisheries. At this moment, there are 1001 fisherfolks inscribed in the 4 Cooperatives and registered in the GNP database. (See Fig. 2)

Number of the Galapagos Fishing Cooperatives registered members 2005.

Source: GNP reports and JICA Survey 2005



COPESAN: Cooperativa de Pesca San Cristóbal.

COPESPROMAR:

COPROPAG: Cooperativa de Producción Pesquera Artesanal de Galápagos.

COPAHISA: Cooperativa de Pescadores Artesanales Horizontes Isabela.

In Isabela Island, the fishing cooperative “COPAHISA” since 1997 had a normal increased. At this moment there are 238 fisherfolks. In this Cooperative, 236 are active fishers even though they are not able to survive with the revenues of the fisheries. COPAHISA has a new President since August 19th 2005. Mr. Simon Morales, native of San Cristobal Island was elected as the new president for the period August

⁵² Ecuadorian Environmental Ministry Decree, Article 43-1998.

2005 - August 2007. With this new administration, fisherfolks of Isabela Island are more enthusiastic, they also have different expectations about the future of the fishing community and they hope that the new President is going to do his best to accomplish their expectations and satisfy their needs.

On the other hand, the Cooperative "COPESAN" experimented a fast increasing in the last years, at this moment 367 members conformed this cooperative and it is the biggest cooperative in number of members. Some fisherfolks say that, years ago, the president of this cooperative was a candidate to be the Mayor of San Cristobal so it was hard for him to refuse the applications for being a new member of the Cooperative. Eventually this cooperative started to increase, but at the same time internal management conflicts also appeared. About the Cooperative "COPROPAG" located in Santa Cruz Island, 250 members are part of it at this moment, most of them trust in their leaders and at least 95% of the fisherfolks are active in the fishing activities. The last and smallest cooperative is "COPESPROMAR" with 147 members; this cooperative is located in San Cristobal Island. The entrance and exit of fisherfolks to the Galapagos fishing cooperatives are much more dynamic than the established regulations, according to which the fishing activity would be inherited from parents to first-borns. Anyway, the increasing of the cooperatives members makes the management more problematic and it complicates the taking of internal decisions. This situation affects the normal administration of the cooperatives and generates communication problems between themselves.

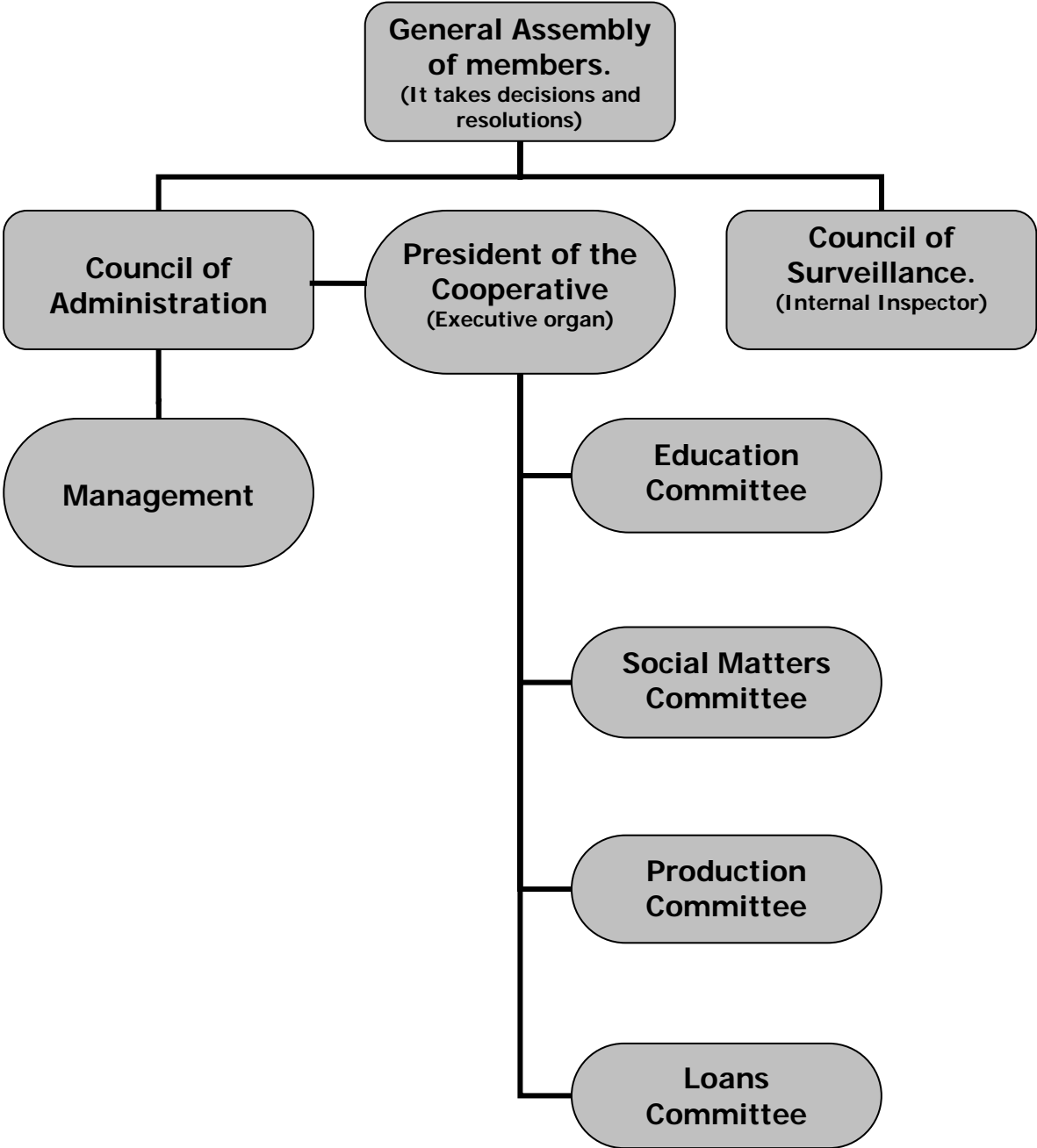
The Galapagos fishing cooperatives have an institutional flowchart defined by the Law of Cooperatives. The key organisms are the General Assembly, the Council of Administration and the Council of Surveillance. In all the Galapagos Fishing Cooperatives, the "General Assembly" is integrated by all the fishing members of the cooperative. Besides of being in charge of taking important decisions and regulations, the "General Assembly" elects the "Council of Administration", which is a group of nine fisherfolks, in turn, the "Council of Administration" is in charge of electing the President and the Manager of the Cooperative. The managers of the Galapagos fishing cooperatives are merely a kind of administrative assistants for the President, except in the case of Santa Cruz Cooperative "COPROPAG" whose manager Mr. Klever Lopez is the general administrator of the Cooperative and a key person in terms of management.

Most of the Galapagos fisherfolks have lost the confidence in the managements of their cooperatives because of bad past administrations, for this reason it is very common that the majority of the members do not attend their cooperatives meetings, which results in communication conflicts. However, leaders of the fishing cooperatives can not take critical decisions without the approving of the cooperative bases, this means that before taking decisions of significant importance, leaders have the obligation and responsibility to summon a General Assembly.

The leaders, more than almost any other actors of the Archipelago, are subject to the constant verdict and decisions of the cooperative unionized members and in many cases, the leaders are changed or destitute. It is expected that the leaders are to be posted for two years, nevertheless, sometimes because of internal conflicts and communication problems among leaders and bases, leaders could be changed or

even deprived of their positions. For example recently in San Cristobal Island at the beginning of September 2005, the President of the Cooperative "COPESAN", Mister Francisco Guamanquishpe was deprived of his position. Instead Mister Elvis Zavala, who was born in Galapagos, was designated as the new President of the Cooperative. Once the new President was elected, the members of this cooperative "COPESAN" have new expectations and they believe that the new administration will work and fight seriously for the interests of the fishing sector.

Flowchart for the management of the Galapagos Fishing Cooperatives



Source: Elvis Zavala – COPESAN President / Simon Morales – COAHISA President. September 2005.

The continuous changes of the fishing cooperative leaders show a sign of weakness inside the cooperatives management but also, at the same time, it testifies that the directive ones are permanently subject to the control of the General Assembly, at least in the most critical topics, for example regarding the most profitable fisheries. Regarding the topics of daily decision, the directive ones have much autonomy to make decisions.

The operation of these formal organs is quite different according to the reality of each cooperative, anyway, when the Galapagos Fishing Community feels the pressure of the tourist and conservation sector; fisherfolks deposit their trust in their leaders and give them the support of the whole sector.

The last organizational milestone achieved by the Galapagos Fishing Cooperatives was the creation of the "Union of Fishing Cooperatives" (UCOOPEGAL) in 2002.

The necessity of a unique representation of the fishing sector was first mentioned in the "Fishing Convention" carried out in Isabela in 1997. The Cooperatives COPAHISA and COPESPROMAR began the administrative procedures and eventually in 2002 the "Social Well-being Ministry" approved the statutes and conformation of the "Union of Fishing Cooperatives".

The first president of UCOOPEGAL was Mr. Alfonso Lozada. Since its foundation, the "Union of Fishing Cooperatives" has had some financial difficulties for its normal operation, anyway, UCOOPEGAL officially represents to the Galapagos Fishing Community in the management instances: the Inter-Institutional Management Authority "AIM" and the "Council of INGALA". The current president of UCOOPEGAL is Mister Angel Mejía who is also the President of COPESPROMAR.

All the Galapagos Fishing Cooperatives, except COPESAN of San Cristobal, belong to the "National Federation of Fishermen Cooperatives" (FENACOPEC). The "FENACOPEC" is conformed by around 9.000 Ecuadorian fisherfolks and more than 2000 Fishing Cooperatives. However, the participation of the Galapagos Fishing Cooperatives is quite nominal. The expectation of the fishing leaders was to receive political supports, help in the implementation of projects, and consultantship from FENACOPEC; however, those expectations had not been satisfied, therefore, the interaction with the Ecuadorian Fishing Federation is very sporadic.

Regarding the daily operation of the Galapagos Fishing Cooperatives, at this moment they have their own place where they operate; all the cooperatives have a manager, a secretary and support for the accounting. In general they have organized files with the records, the official regulations and press releases.

However, the participation of the unionized members of the cooperatives is very limited, just a few of them pay the monthly quota and only a minority attends regularly to the meetings.

The monthly payment of the quotas are in general a problem for the Fishing Cooperatives, according to several fisherfolks who were interviewed during the survey, it was realized that fisherfolks do not usually pay the quotas because they

have doubts about of the cooperatives administration. Anyway, in order to charge the quotas, the Fishing Cooperatives work in coordination with the GNP during the sea cucumber and lobster fisheries with the intention of requiring the payment of the quotas so fisherfolks can receive the legal documents to participate in the fisheries. Nevertheless, concerning the quotas, fisherfolks usually complain and protest that they do pay the quotas but unfortunately they receive nothing in back. On the other hand, the cooperatives leaders complain that the members do not pay the quotas and for that reason is not possible to manage the cooperatives appropriately.

The matter of the money is one of the main problems indoors the fishing cooperatives, many members do not have confidence in the leaders so it is very common to hear from local fishermen accusations about bad management of funds. These accusations do not have to be truth; however they show the lack of communication and confidence among the cooperatives leaders and their bases. The lack of funds is a significant problem inside the fishing cooperatives, they have low budgets and for this reason they cannot operate as self-financed companies. According to the leaders, with such a low budgets is not possible to do what they would like to do in order to support the members, for this reason Galapagos Fishing Cooperatives usually demand external support⁵³.

Since 2000, all the Galapagos Fishing Cooperatives charge a tax for the sea cucumber and the lobster commercialization. Thanks to this tax income known as "Voluntary Contribution", the fishing cooperatives are able to survive financial and administratively. In general terms, the Galapagos Fishing Cooperatives have an enormous deficit about managerial administration, anyway the cooperatives continue functioning trying to do their best with low budgets.

According to Mr. Elvis Zavala the President of COPESAN, the Cooperatives need to concentrate in giving more support to their members, not only waiting or hoping that other organisms do something for the fishing community but concentrating their own efforts on the real necessities of the sector, for example, health and life insurances for local fisherfolks. The reality is that every single fisher is interested and worried about improving the quality of life. Mr. Zavala also emphasized the importance of improving the interaction and relationships with the others Fishing Cooperatives, according to him, it is very important to join efforts in order to reach their goals.

Another important milestone achieved by the Galapagos Fishing Cooperatives was the creation of the "Storing Centers". At this moment, all the fishing cooperatives in Galapagos have their own "Storing Center"⁵⁴. At the beginning it was planned to build only one Storage Center for all the cooperatives but unfortunately the cooperatives could not come to an agreement and for that reason, each cooperative built its own Storage Center with the support of PRODEIN, the Development Inter American Bank (IBD) and The Spain Cooperation Agency through the Project ARAUCARIA.

⁵³ Personal hearings with Elvis Zavala the President of COPESAN and Simon Morales who is the new President of COPAHISA. The hearings were performed in September 2005.

⁵⁴ Unfortunately the "Storing Centers" are merely constructions because of the lack of funds. The cooperatives have been trying to implement the centers but still they need more budget in order to make them operative.

There exist many doubts about the functionality of the Storing Centers of the fishing cooperatives, anyway, if these centers are well managed, they could constitute a good opportunity for the cooperatives and eventually for the entire fishing community. Local fisherfolks think that the Storing Centers are a very good opportunity for the sector; nevertheless, some fisherfolks do not feel trust in the administration.

The four Galapagos Fishing Cooperatives have received support for the operation of the Storing Centers, for example, recently, on September 12, 2005; the Cooperative "COPROPAG" from Santa Cruz received 5,300 dollars from the USAID (United States Cooperation Agency). With this money, COPROPAG will buy prosecution, storage and transport equipment so they can be able to start the operation of the Storing Center. Once they get the equipment, COPROPAG will sell fishing products to the tourism boats and to the local community, fisherfolks will be able to bring fresh fish to the Storing Center and eventually the fish will be sold to the customers.

Mr. Kléber López, COPROPAG manager says that initially, a 40% of the fisherfolks the Cooperative will benefit of this project but eventually with a good management of the Storing Center, this percentage will increase. They expect that the entire cooperative will benefit with the Storing Center.

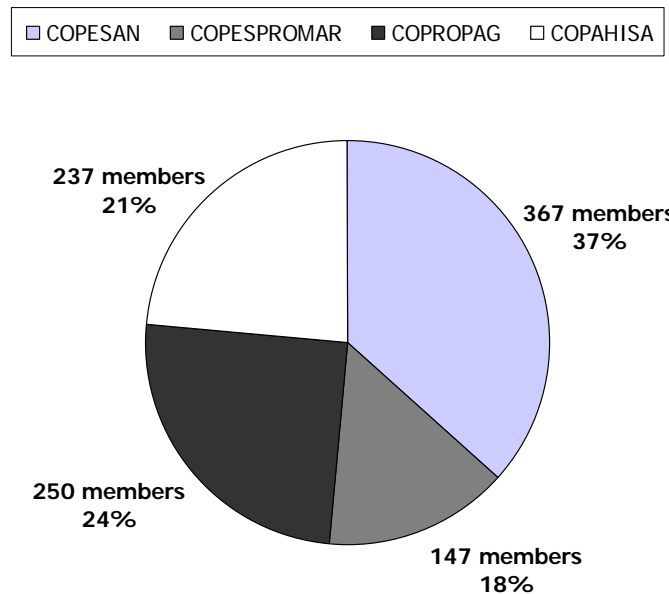
In the case of the others cooperatives, they are also making efforts and still looking for support in order to operate successfully the Storing Centers. The Municipalities for example are trying to support the sector in this issue; at least this is the case of the Municipality of Santa Cruz⁵⁵.

According to the hearings and results of the survey, most of the fisherfolks recognize that their cooperatives urgently need to improve their internal communication and solve their internal problems. Besides, another priority for the cooperatives is the search of new alternatives for the sector; all the fisherfolks interviewed agreed in this issue and think that the Galapagos Fishing Community without delay needs to find alternatives of work.

On the other hand, in the conversations with the leaders of the cooperatives, they recognized the importance and necessity of improving the relationship with the members of their cooperatives and also among the others cooperatives so the whole sector could be a solid group in Galapagos. As Mr. Zavala, the president of "COPELAN" said "We need to join all the cooperatives and work together in the search of solutions and alternatives for the fishing community".

⁵⁵ Mr. Leopoldo Bucheli, the Mayor of Santa Cruz, assured that the Municipality of Santa Cruz will support COPROPAG next year with a donation of USD \$50.000. This money will be used for the implementation of the Storing Center of this Cooperative.

Results of the survey concerning the Galapagos Fishing Cooperatives

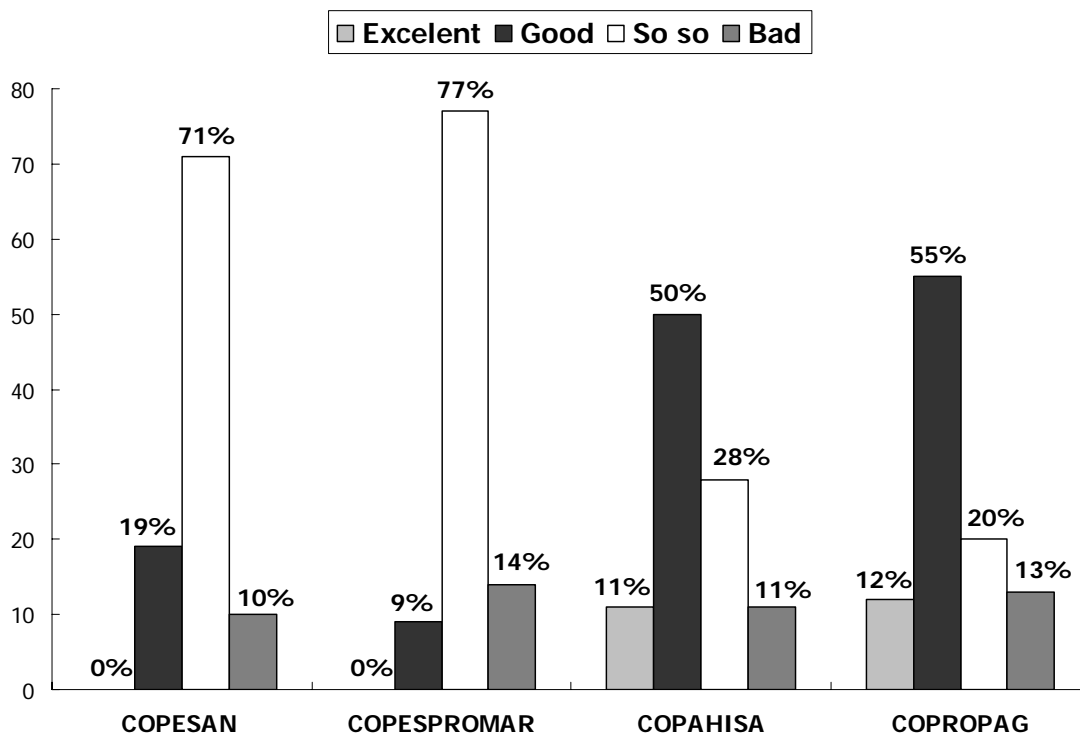


The biggest Galapagos Fishing Cooperative is COPAHISA with 367 members which means that a 21% of the entire fisherfolks registered at PNG database are in this cooperative located in San Cristobal Island.

(Fig. 50)

Relationship among fisherfolks and leaders of their cooperatives

Source: JICA Survey - Opinion polls / question 16



According to the results, we can realize that more than 70% of the fisherfolks of San Cristobal Island (COPESAN and COPESPROMAR) consider that their relationship between themselves and their leaders is not so bad, but at the same time is not as good enough as to trust them. However, leaders were recently changed in this year so the answers of the fisherfolks could have been influenced by experiences with the past leaders. However, still it is evident that the fishing cooperatives of San Cristobal need to improve their communication channels.

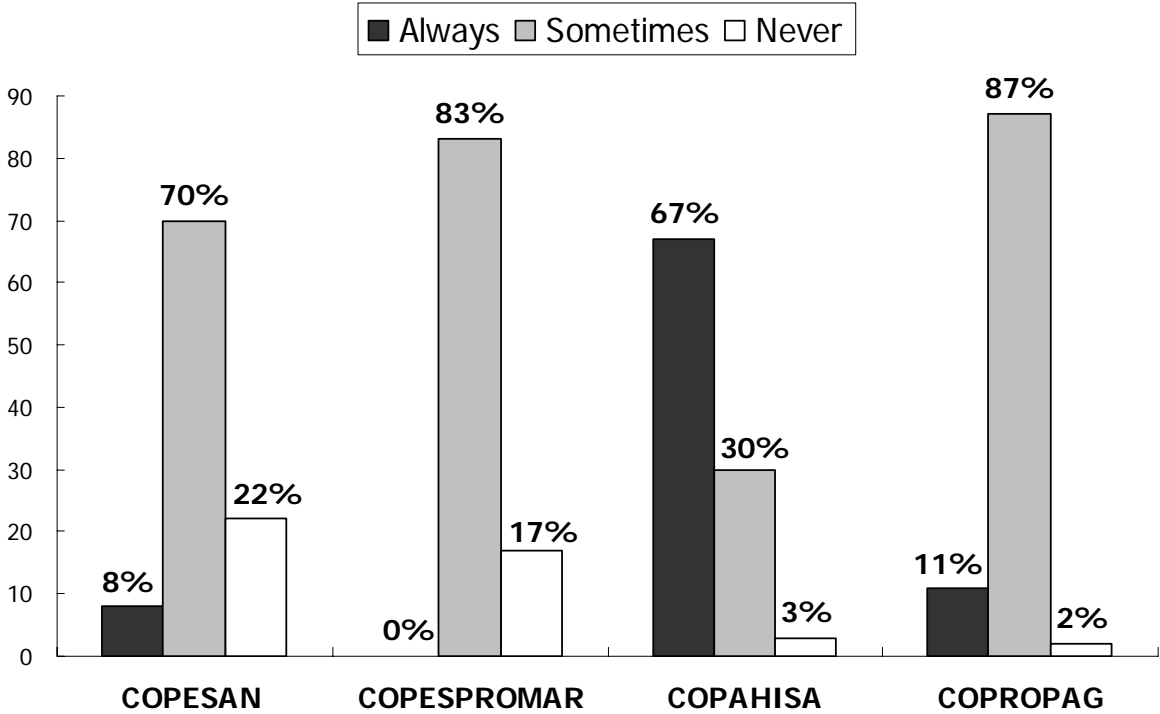
The situation is quite different in Santa Cruz and Isabela where more than 50% of the fisherfolks in both Islands consider that they have a good relationship with their cooperatives leaders (COPROPAG and COPAHISA). On the other hand in the four cooperatives, more than the 10% of the Fishing Sector believe that their relationship with their leaders is bad, this is around 100 fisherfolks.

Fisherfolks interviewed said that their bonds with their leaders do not only depend of the leaders but also depend of the interest of the same fishers, unfortunately even when apparently seems that there is a good relation among leaders and bases, the communication channels are very poor and the relationship is merely an external appearance.

The very truth according to several fisherfolks is that there exist internal conflicts in all the Galapagos Fishing Cooperatives and these conflicts consequently generate internal communication problems among the Cooperatives members and their leaders.

(Fig. 51)
Are the decisions taken by the Fishing Cooperatives leaders shared with the rest of the members?

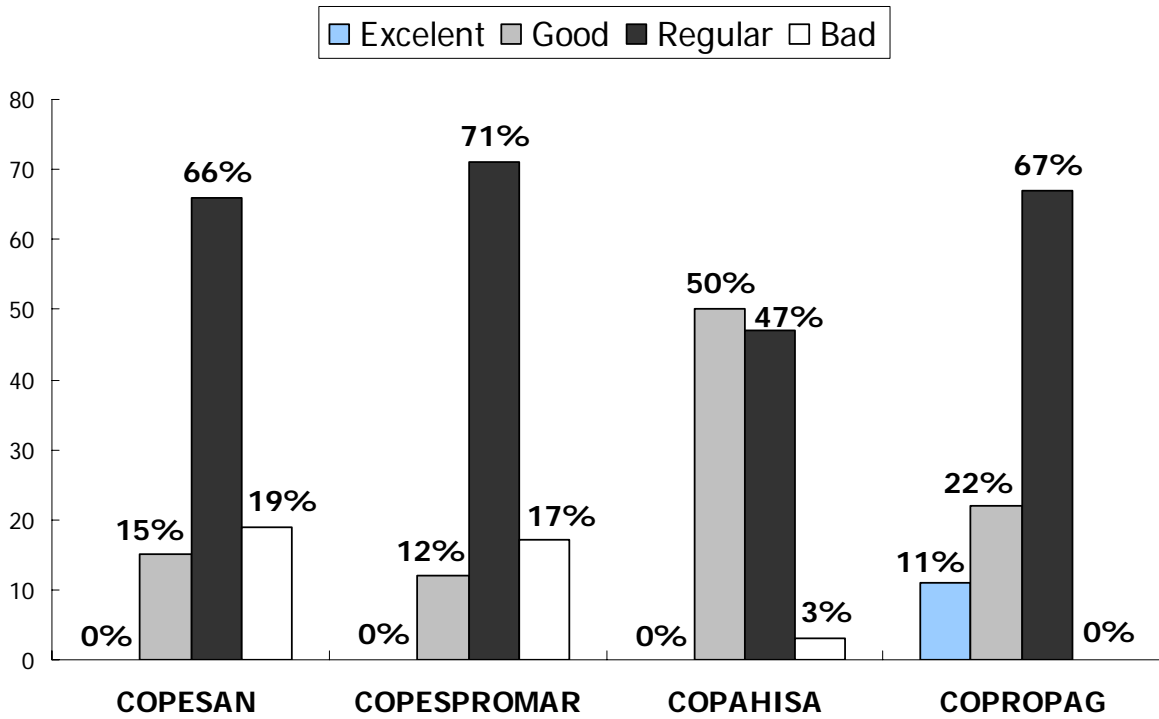
Source: JICA Survey - Opinion polls / question 17



(Fig. 52)

How would you qualify the internal communication of your cooperative?

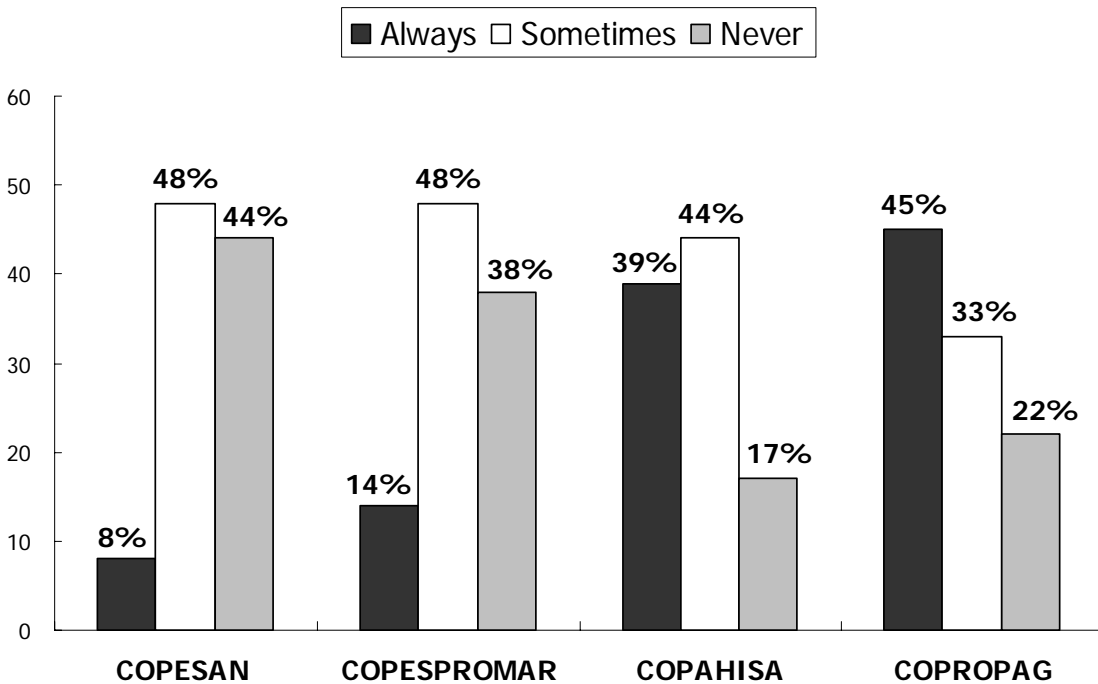
Source: JICA Survey - Opinion polls / question 18



(Fig. 53)

Do you feel well represented at the decision making meetings in the AIM and JMP?

Source: JICA Survey - Opinion polls / question 19



(Tab. 6)

Which are the main necessities of the Galapagos Fishing Community?

Source: JICA Survey - Opinion polls / question 20

Island	Fishing Sector Necessities
San Cristobal	<ul style="list-style-type: none">➤ Fisherfolks of San Cristobal Island are mainly worried about having new alternatives of work. They demand the GNP to support them in the change of behavior so they can be able to start their own business related to the tourist activities.➤ Another claim of fisherfolks of this Island is the importance of having "life and health insurances". They say that fishing activities are not easy to perform and most of the time they have to take the risk.➤ Fishing is a danger activity and the accidents are very common, for that reason they want to have a hyperbaric chamber in San Cristobal.➤ Many fisherfolks believe that Long-line fishery is one of the main niceties of the fishing sector.➤ Several fisherfolks coincide in that their Cooperatives need to be strengthened. Since their communication channels are not good, they believe that the Cooperatives need good leaders and good communications skills.
Santa Cruz	<ul style="list-style-type: none">➤ Most of the fisherfolks of Santa Cruz Island think that the fishing community mainly needs to find new alternatives because at this moment it is almost impossible to live with the fisheries incomes. As in the case of fisherfolks of San Cristobal, they demand too the GNP to support them in the change of behavior so they can be able to start their own business related to the tourist activities.➤ Several fisherfolks of this Island claim for the opening of Long-line fishery. According to many, this is the only realistic possibility and alternative for the fishing community.➤ They coincide too in that their Fishing Cooperative need to be administratively and financially strengthened.➤ In this Island fisherfolks request assist and budget in order to able of operating the Storing Center.
Isabela	<ul style="list-style-type: none">➤ Fisherfolks of Isabela Island are very concerned about their future. They claim for new alternatives, however, they well know the local reality so they know that tourist activities will not be their work alternative for the near future. For that reason, they claim for fisheries alternatives, especially the opening of the "long-line fishery".➤ In this Island some fisherfolks requested support to able of opening their Storing Center.➤ As in the other Islands, several fisherfolks in Isabela coincide too in that their Cooperative need to be strengthened administratively and financially. Besides many are convinced that their communication channels are very poor, so they demand support in developing communications skills for their cooperative.➤ Fisherfolks of this Island were very honest to say that they themselves need to be more organized in order to contribute to the success of their cooperative.

The Artisanal Fishing Community and the Participative Management in the Galapagos Marine Reserve

The most important aim of the Galapagos Marine Reserve management is to protect and conserve the coastal & marine ecosystems of the archipelago and its biological diversity for the benefit of humanity, the local population, science and education.

The administrator of the GMR is the Galapagos National Park; this governmental institution has two important responsibilities concerning the Galapagos Fishing Community⁵⁶:

To guarantee the maintenance and preservation of the populations of the different fishing resources species who are very important for the fishing community interests.

To facilitate and support to the Galapagos fisherfolks so they can improve their social and economic condition by assuring the performing of fishing activities that are compatible with the biodiversity.

It is not easy for the GNP to accomplish these two responsibilities in benefit of the Galapagos Fishing Community; actually it is really a challenge to manage the fishing resources species successfully. This is a team work where both actors should cooperate together. The GNP needs the collaboration and support of the Galapagos Fishing Sector but also the Galapagos Fishing Sector needs of the GNP, so, both play a key roll in the management of the GMR fishing resources. To work in team is not a reality that we can see in the Galapagos Islands, actually there are continuous conflicts between the Fishing Community and the GNP and it is very common that fisherfolks do not trust in the GMR managers.

Let's remember that between 1996 and 1997, many important changes were made to the Ecuadorian administrative structure, which directly influenced into the management of the GMR. In May 1997, the leaders of the Galapagos Fishing Cooperatives signed an Act of Compromise in the National Congress⁵⁷. In this pact, THE Galapagos Fishing Community officially recognized the importance of control and vigilance activities within the GMR. They even requested the continuity of these activities in order to avoid the exploitation of the fishing resources.

⁵⁶ Management Plan for conservation and sustainable use of the Galapagos Marine Reserve. Chapter 2, literal d and literal e.

⁵⁷ This act was signed on May 9th 1997.

This request of the Galapagos Fishing Community was projected to the future creation of the Galapagos Marine Reserve. And finally, in March 1998, the "Republic of Ecuador" created one of the world's largest protected areas: the 133000 square kilometers, "Galapagos Marine Reserve". In consequence it was established a legislative framework for management and control of the GMR.

The management of the GMR is based on a two-level system, involving both local and national stakeholders. On the local level, the Participatory Management Board (JMP) or "*Junta*" includes five direct stakeholders: Artisanal Fishers Cooperatives Association, Galapagos Chamber of Tourism, Naturalist Guides, Charles Darwin Foundation (CDF) and the Galapagos National Park Service. At this level, all decisions involving any activity within the GMR must be taken by consensus. Decisions are taken with regard to any activities that may influence the GMR as a whole, not just the direct ones of the stakeholders.

The CDF provides the scientific information used for informed decisions. Scientific data, such as population density, size classes and depth distribution, are collected on trips to the six islands under legal exploitation and include the active participation of the direct stakeholders of the GMR. This information is analyzed and presented to the participatory forum with the direct input of all stakeholders.

All decisions taken by the JMP are presented to the "Inter-institutional Management Authority" (AIM) which comprises government authorities and Galapagos-based stakeholders:

- The Ministry of the Environment or a delegate thereof, who acts as chairman.
- The Ministry of National Defense or a delegate thereof.
- The Ministry of Foreign Trade, Industrialization and Fisheries or a delegate.
- The Ministry of Tourism or a delegate thereof.
- The Provincial Chamber of Tourism of the Province of Galapagos.
- The Local Fishermen Sector of the Province of Galapagos.
- Conservation, Science and Education Sector of the Province of Galapagos.

The CDF acts as a scientific assessor to the AIM as per agreement with the Ecuadorian Government. The GNP serves as technical secretary during all AIM meetings. All decisions brought by the JMP are generally evaluated by the AIM that in turn makes a final resolution based on a voting system. Both the GNP and the CDF provide guidance, opinions and criteria but cannot vote.

When a resolution or a decision is taken it is the GNP responsibility to enforce it. Most of the decisions taken by the JMP are approved by the AIM, helping to strengthen the process and to encourage the local stakeholders to continue with co-management.

However, the Galapagos Fishing Community is an important part of this management tool. The fishing sector has representatives who normally attend the meetings where important decisions for their sector are taken, for example the approving fishing schedules, volumes, sizes, species and nets allowed in Galapagos.

This kind of management decisions are taken exclusively by the AIM. However, even when there is a participatory management system for the Galapagos fisheries, the Galapagos Fishing Community in general is not satisfied with the decisions taken in the AIM. For this reason sometimes fisherfolks complain and many cases the sector claims its rights by strikes against the decision taken.

According to the results of the opinion polls and conversations with several fisherfolks, besides not having much trust in their representatives, they do not trust neither in the members of the AIM and JMP.

In the following Table about how fisherfolks fell concerning the decisions taken at the AIM and the JMP, we can realize that almost 30% of the entire fishing sector does not fell well represented in those meetings. Especially, in the case of San Cristobal Island fisherfolks, since 41% of them do not believe in the AIM neither in the JMP.

(Table 7)
Percentage of fisherfolks confidence in the AIM and JMP
 Source: JICA Survey - Opinion polls / question 19

	San Cristobal	Santa Cruz	Isabela
Always	11%	45%	39%
Sometimes	48%	33%	44%
Never	41%	22%	17%

On the other hand, there was a 39% in Isabela, 45% in Santa Cruz and 11% in San Cristobal Island who said that they trust in their leaders in charge of representing them at the AIM and JMP. However the same fisherfolks do not feel confidence in the rest of the members of the AIM and JMP. So, this group of fisherfolks is sure that their representatives are going to fight for their interests; however they know that the final decisions are not in their hands.

According to the Special Regime Law for the Preservation and Sustainable Development of the "Province of Galapagos", the AIM has the following powers related to the Galapagos Fishing Community:

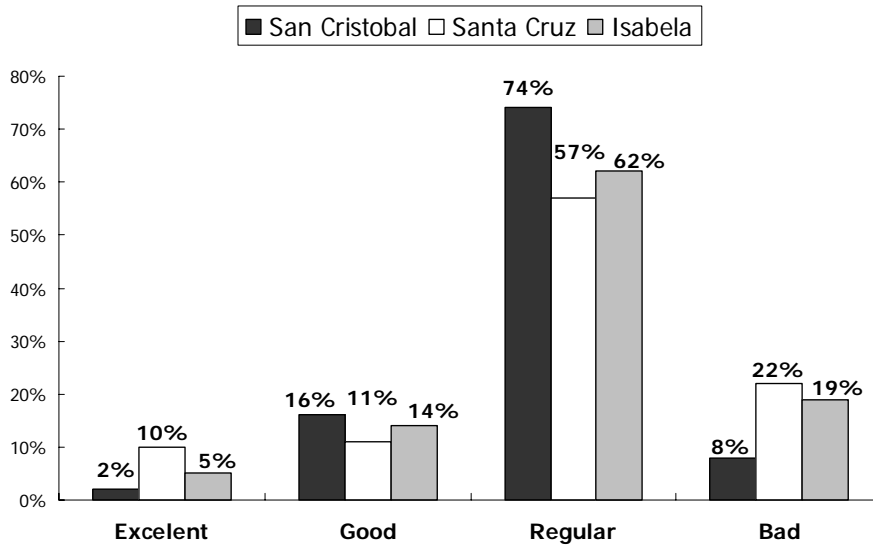
- Approving fishing schedules, volumes, sizes, species and nets allowed in Galapagos, with the advice of the National Fisheries and Fishing Development Council, and
- Authorizing participating scientific research studies aimed at improving conservation and developing marine fishing policies.

The following results of the survey give us additional perceptions that reflect the current feeling of the Galapagos fisherfolks concerning the Management of the GMR and its fishing resources.

(Fig. 54)

How would you qualify the management of the GMR and the fishing resources?

Source: JICA Survey - Opinion polls / question 25

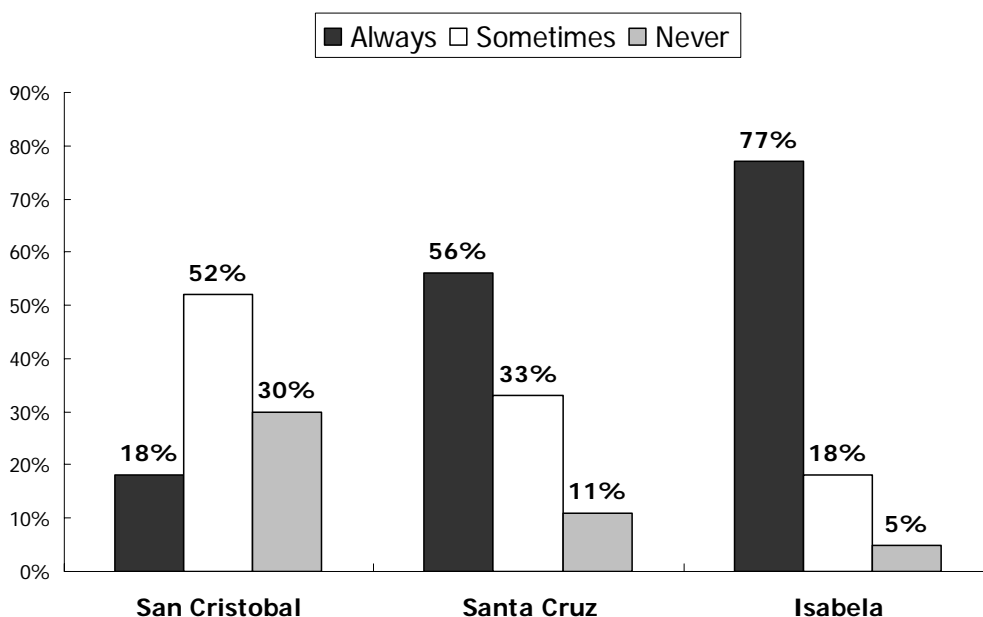


As we can see in Fig. 54, the majority of the Galapagos Fishing Community thinks that the management of the GMR and its fishing resources is not as well as they would expect. In reality, according to several fisherfolks, they just do not consider that the fishing resources are being overseen in a good and responsible manner. Many consider that there are politic interests behind the management of the GMR; some even say that most of the decisions taken are usually against the interests of the Galapagos Fishing Community and for that reason there is not a good relationship among fisherfolks and the GMR managers.

(Fig. 55)

Do you agree with temporary fishing ban of the fishing resources?

Source: JICA Survey - Opinion polls / question 26



We can see in Figure 55 that in general a 50% of the fishing sector understands that the importance of banning some fisheries. It is particularly interesting the results in Isabela Island where 77% of the fisherfolks answer that they agree with the banning seasons, several recognize that the populations of the main resources are very low and these ones need to recuperate, however they claim and demand another fishery alternative.

According to them, "Longline fishing" is the most indicated fishery. In Isabela only a 5% does not agree with the resources banning in contrast to the fisherfolks of San Cristobal Island where a 30% of them are not pleased with any ban. In the three islands, the fishing community recognizes that sea cucumber and lobster resources need a break, the last two fisheries were not profitable and in many cases some fisherfolks even lost money.

Nevertheless, they still claim to continue with these fisheries manly because no other alternatives are available. Once more time, Longlining fishery is the biggest expectation for the entire fishing community.

On the other hand, concerning to this particular fisherfolks claim, the "Conservation Sector" emphasizes that "Longline fishing" is their major concern in the Galapagos Islands because of its effect on birds, sharks and related species, and mammals. For example, they say that the Galapagos Islands support over 10.000 breeding pairs of Waved Albatross, the largest and most important colony in the world for this threatened species, "Longline fishery" could affect the protection of this endemic bird.

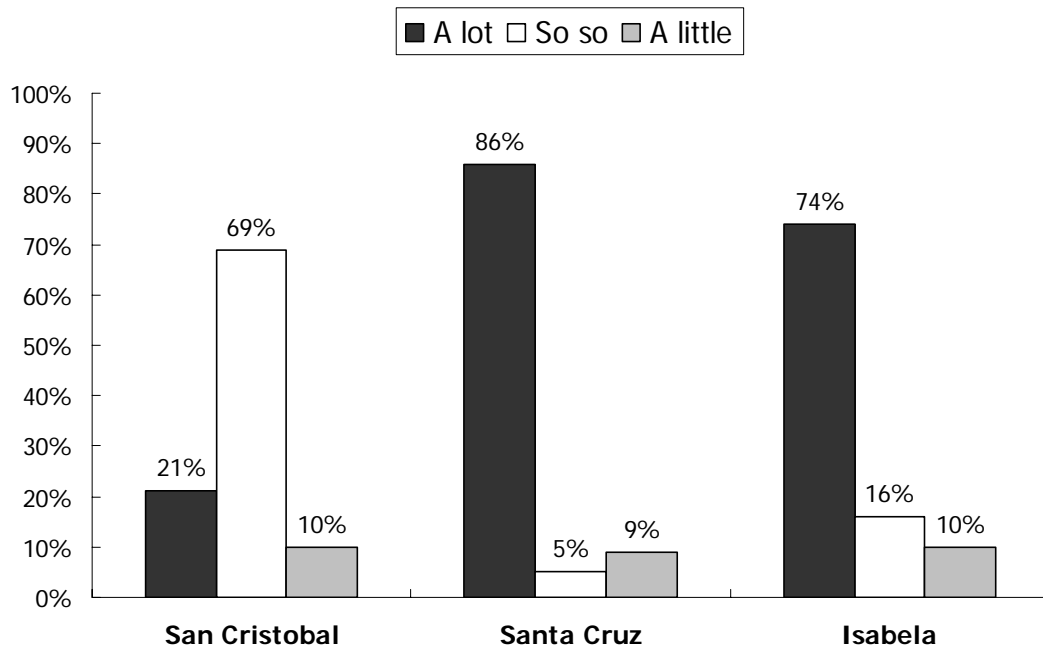
Longline fishing is a technique used to catch fish in open waters using single-stranded fishing lines with hundreds or thousands of baited hooked attached. It is used to catch such species as tuna and swordfish. The problem with Longlining is by-catch, the unintended capture of birds, turtles, sharks and other marine wildlife, which are attracted to the bait.

The greatest danger in the Galapagos, according to the "Conservation Sector", is to sharks, which are already being hunted for their fins. An experimental pilot plan has already been carried out in the Galapagos for 96 days. 845 units of intended fish prey were captured, along with 568 unintended fish, including 482 sharks, 60 rays and 20 turtles.

However the opening of the "Longline fishery" is still in conversations and we no not know yet what could happen and what decisions will be taken in the near future. The GNP is very concerned about it.

(Fig. 56)
Are you concerned about the protection of the fishing resources?

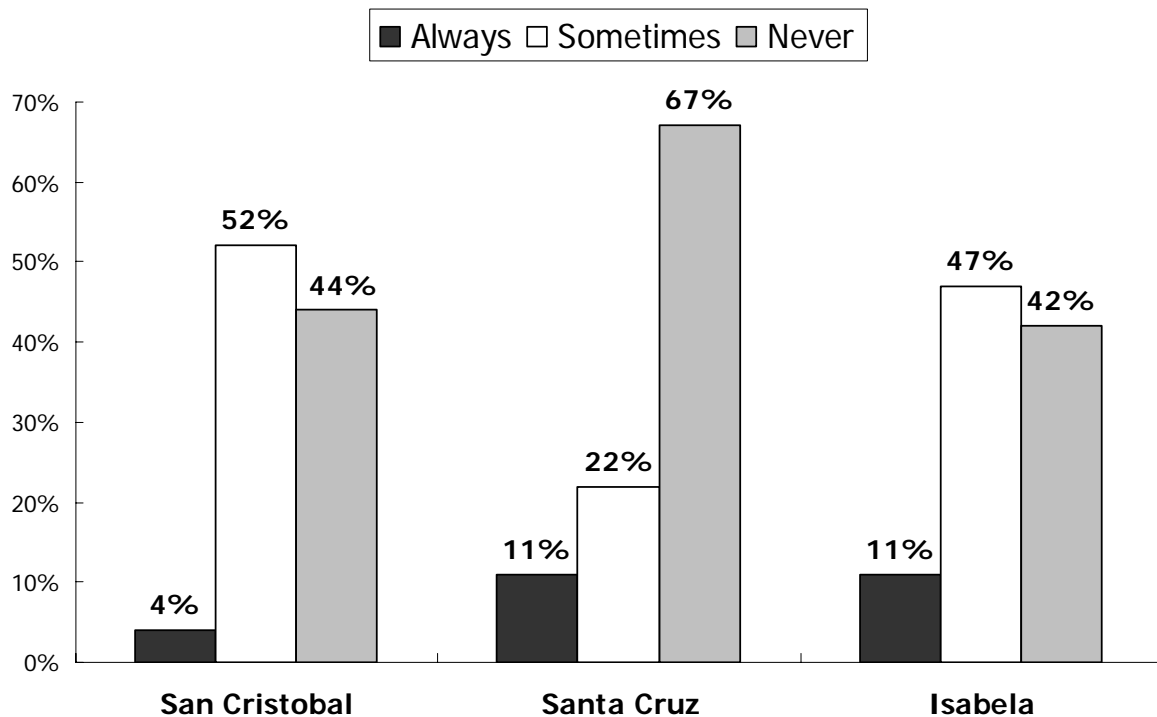
Source: JICA Survey - Opinion polls / question 26.



In Fig. 56 we can realize that fisherfolks of San Cristobal Island are the ones with lower percentages concerning the protection of the fishing resources, only 21% of them are concerned about fishing resources, in contrast in Santa the 86% and in Isabela the 74% of the fisherfolks are worry about the current condition and the future of the fishing resources (mainly sea cucumber and lobster), actually, in this matter, it s important to mention that these fisherfolks recognize the importance of protecting the sea cucumber and lobster. They are plenty sure that if these fishing resources keep decreasing, it will be a disaster for the entire Galapagos.

Nerveless, in San Cristobal Island, 69% of the fisherfolks answered "so so" concerning the protection of the fishing resources. These ones believe that not all the reports about the sea cucumber and lobster are truth, so they know that the populations are low, however according to them, there is no other choice.

(Fig. 57)
Does the Galapagos Fishing Community have the support of the GNP?
 Source: JICA Survey - Opinion polls / question 28.



Only 9% of the Galapagos fisherfolks believes that the GNP is supporting the Fishing Community. In contrast 51% say that the GNP never thinks in the real needs of the sector and for that reason the conflicts among both sectors are very frequently. However, a significant 40% of the sector believes that the GNP from time to time supports and understands the Fishing Community.

Regarding this issue, the GNP has the great challenge of improving its relationship with the Fishing Community; unfortunately it is not an easy task since there is an enormous gap among both sectors.

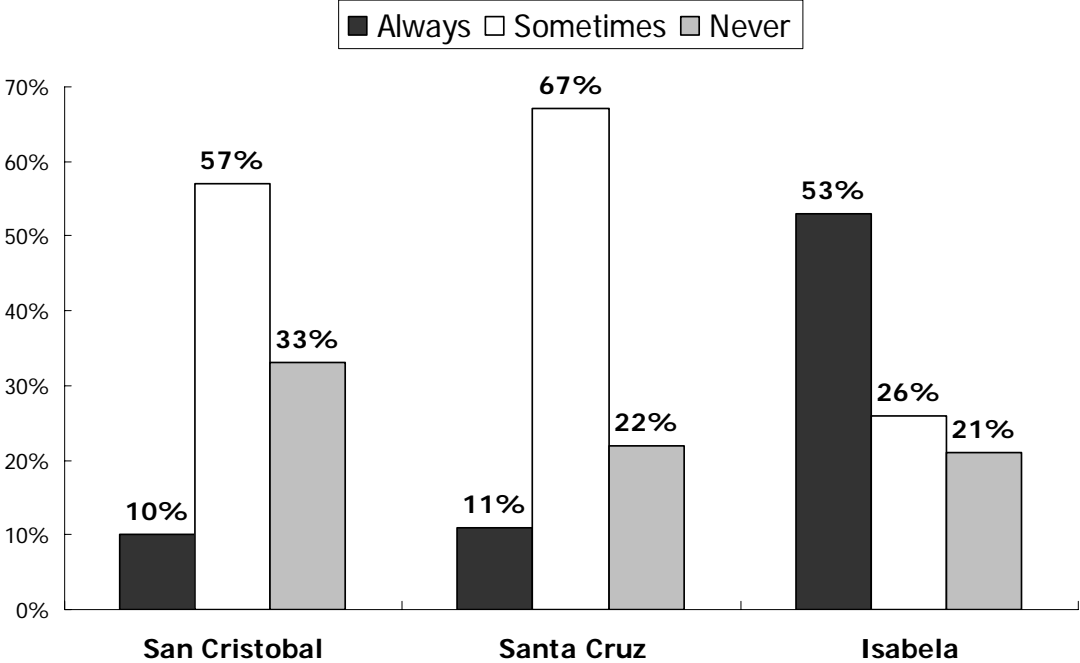
Years of conflicts, strikes and continuous disagreements are the reality existent between the GNP and the Galapagos Fishing Community. However, both sectors recognize the importance of improving their communication channels and the importance of cooperating each other.

Fisherfolks demand flexibility from the GNP, they want them to put on their shoes and stop thinking only in conservation. They believe that the most importance species not only in Galapagos but also in the whole world is the human species.

Several fisherfolks interviewed see the GNP rangers as "inflexible policemen", it will take time to remove this impression but it is very important to start changing that image in order to reach the Fishing Community and get their collaboration. At the same time, undoubtedly, new alternatives fro the sector should be implemented.

Another important fact to mention is the dissents and disagreements of several fisherfolks concerning the punishments applied to the illicit fisheries. See Fig. 58.

(Fig. 58)
Do you agree with that the illicit fishing most be punished?
 Source: JICA Survey - Opinion polls / question 29.



Inside the Galapagos Fishing Community, there are several fisherfolks with protection beliefs towards the Galapagos Marine Reserve. Definitely, these ones are more accepting of punitive management actions in response to illegal fishing. In Isabela Island there is a 53% who agree with the punishments established for the illegal fisheries.

However, 50% of the sector answered "Sometimes" and a 25% of the entire sector disagree with the penalties and punishments. It is important to remark that the majority of the Galapagos Fishing Community understands and agree in the importance of punishing the infractions in the GMR.

However they believe that the managers only apply the law with the fishing sector but when big fishing national and international vessels are found in the GMR the law is very flexible and most of the time nothing happens. This situation really irritates and bothers the Fishing Community since they feel that only Galapagos fisherfolks are punished.

On the other hand, the GNP ratifies that they have started dozens of demands against the offenders by its "Juridical Department". In fact, many industrial fishing vessels have been punished for invading the GMR.

Communication channels with the Galapagos Artisanal Fishing Community

An important truth in the Galapagos Islands is that the diffusion of the information about the GMR management and other environmental information among the Fishing Community, scarcely reaches the common Galapagos fisherfolks.

The support of the Galapagos Fishing Community to the decisions taken inside the JMP and AIM⁵⁸ depends in great manner of an appropriate and fast dissemination of the information generated in the breast of the JMP and the AIM. The broadcasting of the regulations and the resolutions concerning the administration of the Galapagos Marine resources must reach not only the leaders of the Fishing Community but also its bases.

The GNP has developed different strategies in order to straighten the communication channels among them and the Galapagos Fishing Community. They are plenty sure that they most improve their relationship with fisherfolks in order to get their collaboration in the challenge of protecting the GMR and its resources.

The communication strategy of the GNP has been constantly adapted and improved in order to reach the fishing sector, however the gap existent between both sectors is becoming bigger and bigger. There are mainly two complains of the Galapagos Fishing Community regarding the communication problems with the GNP:

Fisherfolks consider that the GNP does not understand them.

Fisherfolks consider that the GNP does not inform or they only inform what is good for the GNP interests.

However, the GNP and the CDF have conducted different environmental campaigns focusing on concrete aspects of GMR management. The campaigns have been distinguished by use of mixed communication media, including audiovisual resources combined with interpersonal forms of communication.

In addition to being used in the campaigns, certain video productions, especially those ones related to conservation of the GMR and its resources have served as support material for talks and workshops with different target audiences. This material is presented by the staff of the GNP and CDF in order to promote a sustainable development of the Galapagos Islands. Among the target groups, the Galapagos Fishing Community has been one of the most important objectives to reach with the help of the audiovisual material.

⁵⁸ These entities were established as a participatory key mechanism for a better administration of the Galapagos Marine resources.

According to the GNP and the CDF, communication campaigns about the GMR and the management of its resources are indispensable to generate favorable public opinion and to disseminate information.

For example, during 1999, campaigns were conducted about the approval of the management plan, the regulations of the fishery calendar, and the fisheries for sea cucumber and lobster and the monitoring program. For broadcasting this material, mainly radio and television were used, as well as written communication for the press and bulletin boards.

In the case of the sea cucumber fishery, a more direct communication campaign was implemented in the three main inhabited islands. This campaign includes the divulgation of fishery regulations, methods, and safety advices; the campaign was held before the fishery opening. Since the that time, the GNP and the CDF have continue with these communication campaigns every year in order to inform the Galapagos Fishing Community about the progress of the sea cucumber and lobster fisheries. Regulations and press bulletins are also part of the communication strategies.

In order to complement the dissemination strategy, the GNP and the CDF had for several years an informative radio program which was broadcasted every week. Besides, a TV program named "Tierra de Volcanes" produced by he GNP was broadcasted every week too for almost 3 years⁵⁹.

However since the majority of the Galapagos fisherfolks do not trust in these conservations institutions, consequently, it was realized that these programs were reaching this specific sector "The Galapagos Fishing Community" although the programs were very effective to reach others Galapagos Marine Reserve users. Even when several fisherfolks enjoyed the program their attitude concerning the GNP did not change at all.

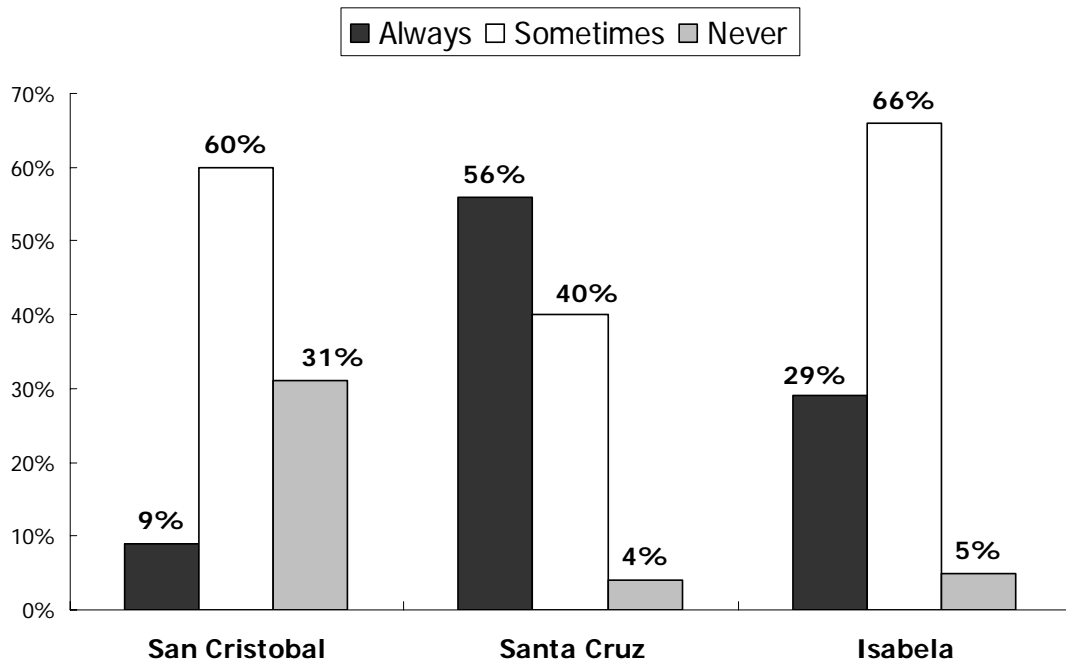
By the end of 2004, the GNP and CDF stopped producing the Radio and TV program for different reasons⁶⁰. However, it is very obvious that the GNP needs a diffusion action plan and definitively a communication strategy in order to reach the Fishing Sector and eventually to improve the relationship with them. Undoubtedly, the support of the Fishing Community to the different management decisions concerning the GMR depends in great manner on how effective the communication channels are between the GNP and the Fishing Sector. Unfortunately, the Galapagos Fishing Community still has the impression that the GNP is not transparent in the diffusion of information concerning the management of the GMR and the fishing resources. However most of the fisherfolks interviewed indicate that they usually are well informed of the news concerning the fishing resources and the management of the GMR, although they attribute the divulgation of the information to their own Fishing Cooperatives.

⁵⁹ "Tierra de Volcanes" was consider the best TV program in the Galapagos Islands, more than 100 programs were broadcasted in all the local Channels, however its target was not only the fishing community. Actually the program mostly was watched by people of other sectors.

⁶⁰ In the case of the GNP, they stopped producing the program mainly because off lack of personal.

(Fig. 59)
Are you in general well informed about the news concerning the fishing resources and the management of the GMR?

Source: JICA Survey - Opinion polls / question 24.



As we can see in these results of Fig. 59, in the three inhabited Islands, there is an average of 31% of fisherfolks that answer “always”, this means that this group is always well informed about the news concerning the fishing resources and the management of the GMR. On the other hand, an average of 55% said “sometimes” and a 14% said “never” which means that they never hear any news about the GMR and its management.

Obviously, the GNP is doing its own efforts for disseminating the information but unfortunately since the relationship between the GNP and the Fishing Community is very poor, typically, fisherfolks do not pay attention to the official announcements publicized by the GNP. Fisherfolks need to develop credibility in the GNP before they listen to them.

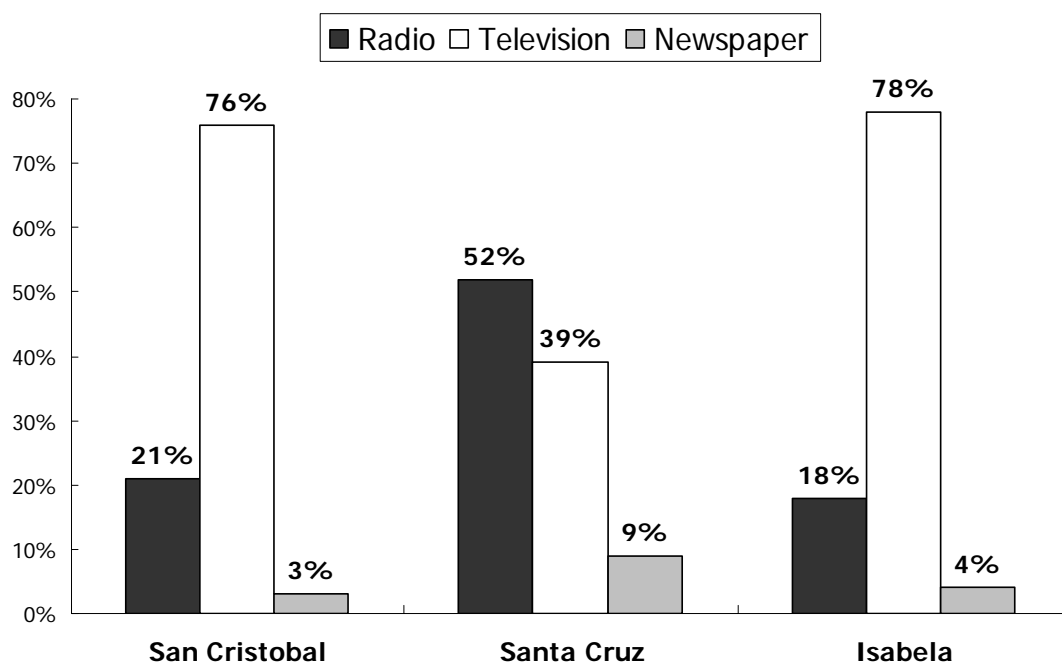
On the other hand, it is very common that the information concerning to the GMR management is very technical, besides it is important to consider that the education level of the Galapagos general fisherfolks is very low. Therefore, the message has to be very simple, short, easy to understand and of course attractive to them.

Fisherfolks were also inquired about what communication media they prefer for the dissemination of the information concerning the GMR and the managements of the fishing resources.

(Fig. 60)

Which communication media do you prefer for the dissemination of the information about fishing resources and the management of the GMR?

Source: JICA Survey - Opinion polls / question 22.



By analyzing the results in Fig. 60, we can realize that it is very evident that *television* is the most favorite communication media for the Galapagos Fishing Community. Especially in the case of the fisherfolks from Isabela and San Cristobal Islands, more than 70% of the sector answered that they would prefer to receive information about the GMR and the management of the fishing resources by a good quality TV program.

In the case of the fisherfolks of Santa Cruz Island, only a 39% of the sector answered that they would prefer to receive information about the GMR and the management of the fishing resources by TV, in comparison a 52% answered that they would prefer to keep informed by an Informative Radio program.

Regarding the three inhabited islands, we can realize that in all together an average of 64% of the entire fishing community chose the TV as an effective way to disseminate information, while a 30% prefers the Radio and only a 6% prefers the newspaper to receive information.

Favorite communication media of the Galapagos Fishing Community	
Television	64%
Radio	30%
Newspaper	6%

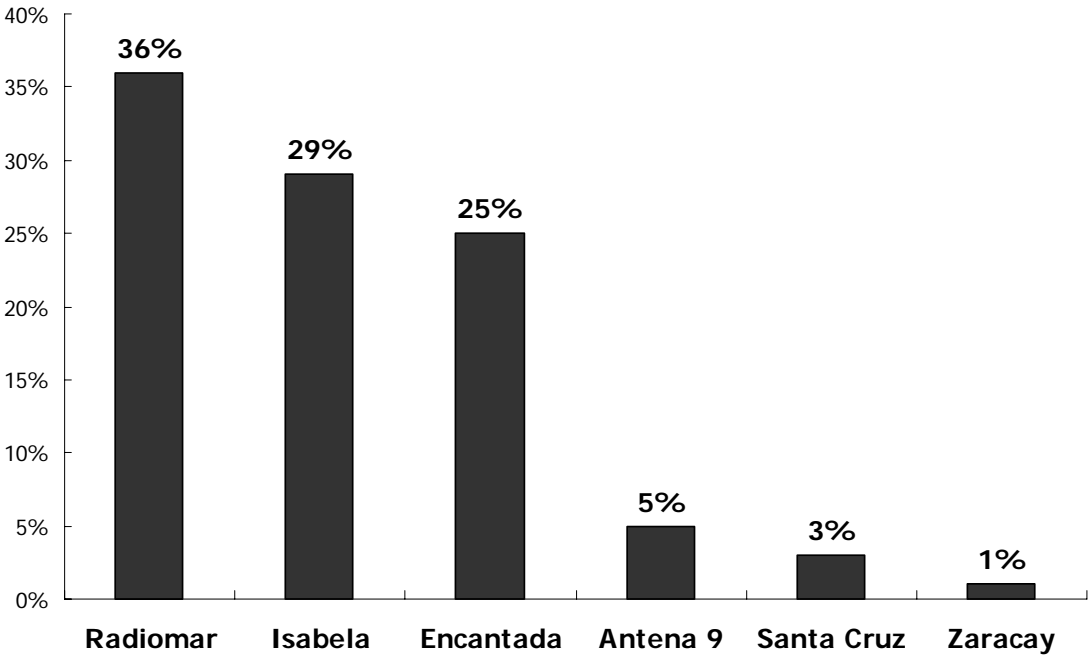
The implementation of an educative and informative TV program it would be a strategic key to reach the Galapagos Fishing Community; however TV production costs are very high, but the benefits might be very satisfactory.

On the other hand, the second alternative is to disseminate the information through a high quality Radio Program. Actually, the Radio is another strategic way to reach the fishing sector and cost operations are not as expensive as TV production.

For this reason, fisherfolks were also inquired about what Radio Station they would prefer for the dissemination of the information concerning the GMR and the management of the fishing resources. See the following Fig. 61⁶¹.

(Fig. 61)
Which Radio Station do you prefer for the dissemination of the information about fishing resources and the management of the GMR?

Source: JICA Survey - Opinion polls / question 21.



According to these results, *Radiomar* is the favorite Radio Station of the Galapagos Fishing Community, a 36% of the Fishing Community chose this Radio as their preferred Station to listen to the news. One important fact to mention about *Radiomar* is that this Station can be heard the entire Archipelago. About *Radio Isabela*, this Radio Station occupies the second position as we can see in the results, this is because almost all the Fishing Community in Isabela listens to this Radio and this fact affects the results, however, Radio Isabela can not be heard in the other Islands.

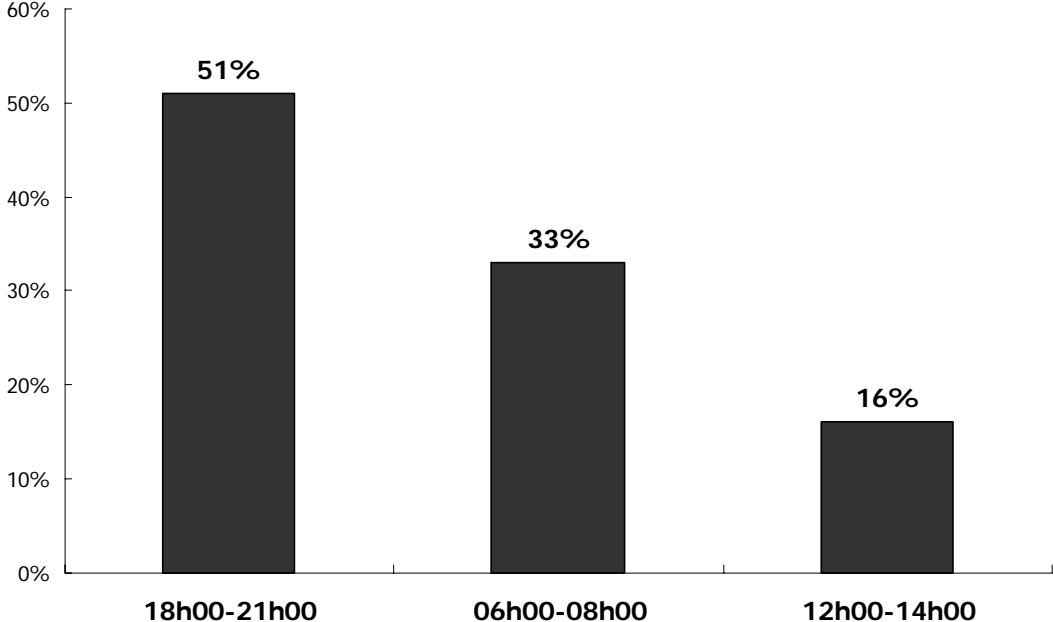
⁶¹ The percentage in the case of Radio Isabela is 29%, however, we must consider that in Isabela Island there is only one Radio "Isabela Radio Station", so the percentage is affected for this particular fact. In the general average, this Radio is located in second position.

Fisherfolks were also inquired about what would be to the best time for them for the dissemination of information concerning the GMR and the managements of the fishing resources.

(Fig. 62)

What time would you prefer for the dissemination of the information about fishing resources and the management of the GMR?

Source: JICA Survey - Opinion polls / question 23.



Concerning the best time for broadcasting an information program for the Fishing Community, fisherfolks preferred at night, between 6 and 8 pm, however this in case of a TV program were broadcasted. But if the dissemination is performed by a Radio Program, fisherfolks prefer the mornings, between 6 and 8 am.

Evidently the Radio and Television are strategic tools to reach the Galapagos Fishing Community, by producing attractive audiovisual material and then broadcasting this material on the local Radio and TV, we could be able not only to disseminate the information among the Fishing Community of the entire Archipelago but also we might be able to educate and promote the conservation of the GMR resources.

Through a professional audiovisual production and the use of the most effective communication media in Galapagos, we will be able to strengthen the information flow on Marine Reserve management among the Artisanal Fishing Sector.

Chapter 11

The Women's organized groups and the Galapagos Fishing Community

The Management Plan for the conservation of the Galapagos Marine Reserve (GMR) published in 1999 emphasizes the necessity of strengthening the different users, promoters and sectors related to the GMR. The Plan proposes to carry out different strategies directed to strengthen the GMR sectors through promoting the capacity of continuously participating in the management process.

Regarding to the Fishing Community that includes not only Galapagos fisherfolks but also their families which means wives and sons, this document "The Management Plan for the Conservation of the GMR" recommends developing with the Fishing Communities different training programs, communication and education strategies, and social promotion activities with the aim of reinforcing the organization capacity of the sector.

In the same year 1999, The Charles Darwin Foundation (CDF), thinking of supporting the social development in the Province of Galapagos, proposed a project called "Gender Project" (Proyecto Género in Spanish) whose objective was to integrate the Galapagos fishermen's wives into productive works.

This project was led by a lady named Patricia Moreno, she was a member of the CDF in San Cristobal Island. The aim of the "Gender Project" was to work with the Galapagos fishermen's wives with the intention of helping them to start small businesses so they can be able to complement their families' incomes, especially during the banned season of the sea cucumber and lobsters fisheries.

It was expected that with the "Gender Project", fishermen's wives can participate actively in complementary works, contributing in this way to reduce the pressure on the marine resources in the GMR. The CDF initiative of working with the Galapagos fishermen's wives was of pleasure and acceptance of the Galapagos National Park and other donor who are executing supportive actions in the Archipelago.

Consequently, in 2000, the CDF carried out an economic diagnosis of the fishermen's women and their families with the purpose of defining their aspirations. As a result, an action plan based on the survey results was made, some local institutions like INGALA, PRODEIN (Project for the Integral Development of Galapagos), the National Financial Corporation and some donors like "AECI"⁶², of course the GNP also contributed to organize women's groups.

In time, with all the support that these ladies received they were able to constitute themselves as Galapagos associations legally established and eventually they started their own small businesses.

A very important step for the recently formed women's groups was the support of USAID, this Cooperation Agency of the United States of America contributed with a

⁶² AECI is the Spain International Cooperation Agency. They work in Galapagos through the ARAUCARIA Project. The counterpart of this project is the GNP.

considerable sum of money designated to buy equipment for the groups. The support also included training and technical assistance for the ladies so they can be able to operate the equipment by themselves. Additional financing came from other donors like the "Canadian Embassy", "Peace Body", "Wild Aid" and "FALC Funds"⁶³.

In due course, seven groups were legally founded in Galapagos; three are in San Cristobal, one in Santa Cruz and three more in Isabela Island. These women's groups have started small business companies but for the moment their production is only for the local consumption.

Galapagos Women's Groups
San Cristobal Island
MARCEPGAL
CORAL
OMCA
San Cruz Island
MARISQUERIA BARONESA
Isabela Island
OMPAI
OMAI
PESCADO AZUL

At least a 70% of the members who integrate the seven women's groups in the Galapagos Islands are fisherfolks wives. The seven groups are legally founded, however because of internal conflicts and a lack of organization most of them are not fully operating. Practically all the donors who are supporting the conservation in Galapagos are giving support to these groups since they think that they can reach the Galapagos fisherfolks through their wives.

The donors are convinced that by supporting these women's groups and helping them to participate actively in complementary works, they will contribute to reduce the pressure on the marine resources in the GMR. Unfortunately, even with all the support that the groups have received, the majority have not been able to achieve their goals. Actually only one group "Pescado Azul" has been able to progress and make their business work. There are many reasons; however it has been mainly the lack of organization and internal conflicts have affected the management of these groups.

⁶³ "Funds FALC" is a fund that comes from the Galapagos Tourist Sector. This fund is administered by the CDF and it was created with the purpose of supporting to local initiatives and projects related to the conservation of the Galapagos Islands.

After conversations and personal hearings with the several members of the different women's groups of the Galapagos Islands, we have identified different needs; however, four needs are the most urgent:

To implement a permanent training program concerning business administration, accounting, marketing, business planning, etc.

To improve the quality of their products.

To enlarge the market for their products at local, national and international level.

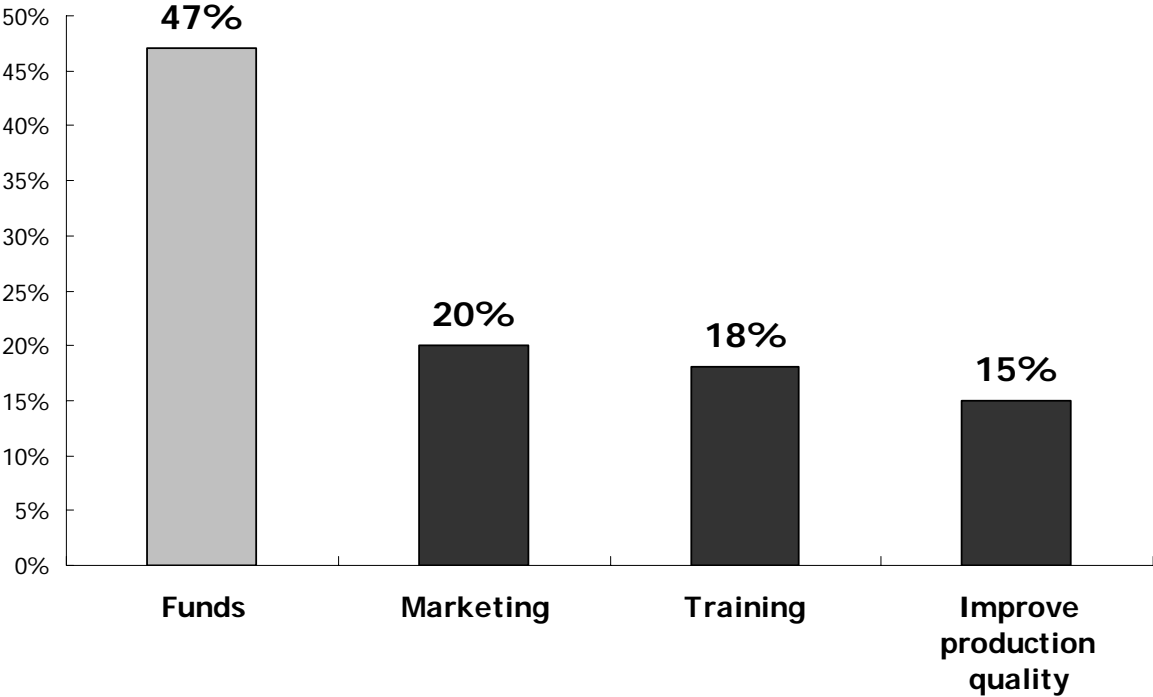
Funds. (This is manly the claim of the majority of the groups).

It is very important to notice that these small businesses of women's groups have competition with national companies that perform the same products with a better quality. According to the local reality women's groups have a real challenge to face if they want to make their businesses work.

They first need to organize themselves and find a solution to their internal conflicts. Once this is done, the groups need to improve the quality of their production and at the same time to enlarge the market for their products at local, national and international level.

In the following Figure we can see the average of the most important needs of the Galapagos women's groups. These results reflect their principal requirements.

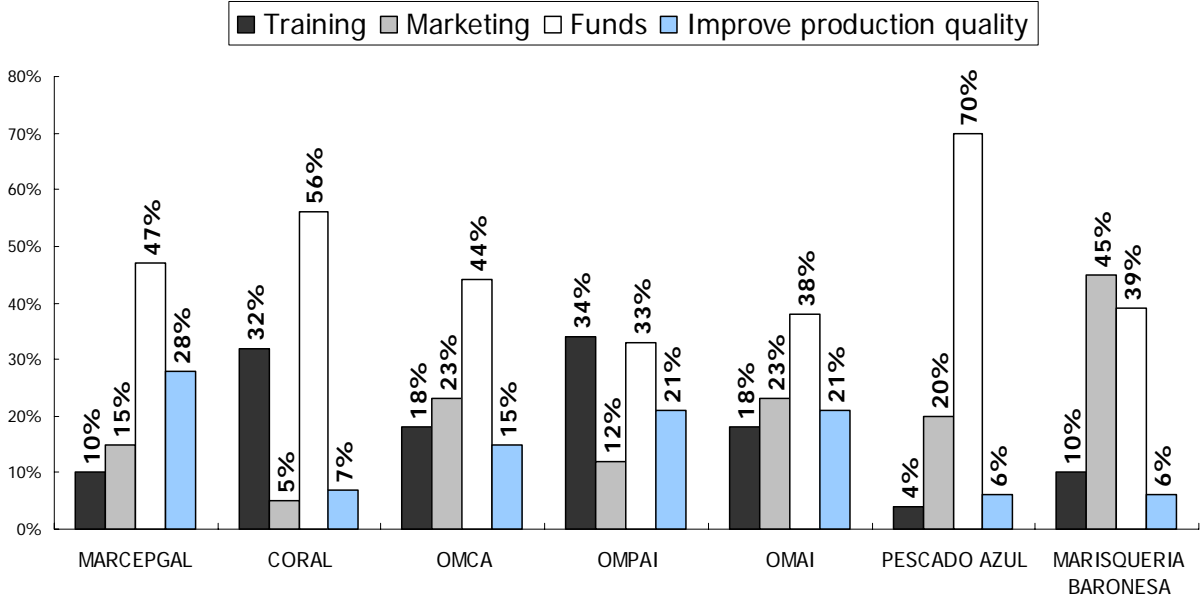
(Fig. 63)
Main needs of the Galapagos women's groups
Source: JICA Survey - Opinion polls



As we can see in Fig. 63, 47% of the women interviewed agree that the most important need for their small business is basically funds; however, donors have already provided to the groups some funds to buy equipment so they can be able to start their businesses. Unfortunately, since they have not been able to manage appropriately their business and because of their internal conflicts they have not been able to success. Even when all the groups mainly ask for funds if we analyze carefully their situation, we can realize that what they really need is training, marketing and support so they can improve their production quality.

Anyway, it is important to see the differences between each group about their perceptions regarding their needs.

(Fig. 64)
Main needs of the Galapagos women’s groups according to each group
 Source: JICA Survey - Opinion polls



A brief view of women’s groups and their current situation

OMPAI (Pinzon Artisanal Women Organization of Isabela Island)

The group OMPAI was founded in September 2001 in Puerto Villamil, Isabela Island. As the others Galapagos women’s groups, OMPAI arose as a result of the initial impulse given by the “Gender Project” of the CDF. Right after OMPAI was conformed, the group designated a directive in order to manage the group.

All the members started to contribute a permanent quota of 5 dollars every month; eventually they opened a bank account in Santa Cruz with the purpose of saving the money that comes from the quotas. Thanks to these quotas, two years ago, the group bought a piece of land of 510 square meters. After they bought the land, the quota was reduced to 2 dollars per member and at the present, all the members of the group still contribute this quota every month.

With the help of USAID the group received a donation of sewing machines to manufacture clothes and T-shirts. They also applied to "FALC Funds"⁶⁴ so they can buy an industrial blender for the treatment of recycled paper. Thanks to these donations, the group was able to start their own small company and eventually they made 2 subgroups in charge of different activities. One group was dedicated to manufacture T-shirts and another group dedicated to produce recycled paper cards.

In time, OMPAI rented a place at the Municipality of Isabela for USD \$100 per month, in that place they placed the sewing machines donated by USAID and one subgroup of around 12 women, started to manufacture T-shirts, cloth and some sewing works for the local community. Even when they were very enthusiastic at the beginning, the group started to have manufacturing problems because of the lack of knowledge concerning to T-shirts manufacturing. They realized soon that if they want to sell their product to the tourists or even to the local people, they must offer a good quality product, otherwise they will not be able to compete. Eventually they started to apply to different donors and organizations to receive more training in this issue. In due course, they received training about the use and operation of the machines besides some short seam courses; however it is very obvious that those courses and training were not enough. In the meantime, OMPAI initiated other activities, with some short training courses organized by the GNP, CDF, Wild Aid and other donors, the group started to produce handy crafts, embroidered T-shirts and imitation jewelry.

Besides manufacturing capacity problems, since the beginning, OMPAI showed internal conflicts, organization problems and a lack of sense of business. Unfortunately, in December 2004, OMPAI had to give the place back to the Municipality because the profits of their production were not enough to pay the rent of the place. In any case, this group "OMPAI" has identified its current main needs, according to them, training and funds are the priority. But of course they also demand support to improve their quality production and marketing.

Most important needs according to OMPAI perceptions	
Training	34%
Funds	33%
Improve production quality	21%
Marketing	12%

Nowadays, the group OMPAI is conformed by 16 women, 13 of them are fishermen's wives and 3 of them are fishermen's mothers. They have 5 action lines of work:

- T-shirts production.
- Embroidery.

⁶⁴ "FALC Funds" come from the tourist sector and it is administered by the CDF with the purpose of giving support to local projects in favor of the conservation.

Handicrafts.
Imitation jewelry.
Recycled paper cards.

Even when they have those action lines, the group still has manufacturing capacity problems and according to the other women's groups, since the beginning, OMPAI have had internal problems that generates conflicts between the members.

OMAI (Isabela Artisanal Women Organization)

The group was legally founded in October 2001; they started with the help of "Gender Project" of the CDF. At this moment, Mireya Rogel is the President of the group. According to her 90% of the community of Isabela depends on the fisheries, but the resource is decreasing so it is important that fishermen's wives do something in order to support their husbands. They do not want to depend on the fisheries. Besides looking for alternatives of work they think that there is an opportunity in the tourism sector. This group is integrated by 18 women in total; the 80% of the group are fishermen's wives. They have three concrete action lines of work:

They produce jelly and thanks to the collaboration of USAID they have the equipment to perform their products; however they need to get the sanitary register and training in order to improve the production quality.

They also make plush puppets or ("peluches" in Spanish). They also need to be trained to improve the production quality.

They produce too T-shirts *Baltic* and serigraphy, they have the equipment to produce the T-shirts.

Even when they have already identified three action lines, the group has had organization problems for several years. Besides, they believe that they mainly need funds in order to improve the business and buy the material that they need to offer a better quality in the production.

Most important needs according to OMAI perceptions	
Funds	38%
Marketing	23%
Improve production quality	21%
Training	18%

A second important need identified by this group is the marketing and a business plan; the members recognize that there exists a lack of knowledge in this issue so for them it is elemental to develop a business plan. Besides, they want to offer a better quality before they start offering the product in other islands and in the mainland, so for them it is essential to receive technical assistance. Anyway they are selling the product in some stores in Baltra Island. They have contacted some tourist boats in order to sell the T-shirts on board but still they demand support with a marketing campaign.

Another important need for this group is a permanent training program in order to perform a better production. They want more than a simple training, they want to have continuous training principally in administration, marketing and accounting. Regarding this necessity, this group wants to receive training in the following aspects:

Jelly production (training for 6 women).

Serigraphy (training for 5 women).

Plush puppets, they have applied to Funds FALC but they have no answer yet. (They need equipment and training for 7 women).

Taidai, Baltic (training).

Handy Crafts (training).

Imitation jewelry (training).

It is very interesting that this group has the full support of their husbands; this situation was not always like that, at the beginning their husbands were pretty mad to see their wives out of home but in time things changed. The husbands have seen their wives bring some money to their homes. According to the information provided by the President of the group, depending of the season, they can make around almost USD \$120 per person as profits only from serigraphy, plush puppets and Taidai T-shirts. This information is completely different of other surveys, but anyway, the group insisted in that fact. At the end of the month they divide the profits of the sells between the women who worked (Usually 5 or 7). They work an average of 3 hours per day.

PESCADO AZUL (Another group in Isabela Island)

At the end of 2001, as a consequence of a training course of smoked fish preparation organized by the National Institute of Fishing for the Galapagos community and thanks to the initiative of Mrs. Emma Flor, a woman from Isabela Island, a new women association called "Pescado Azul" was formed. This group in particular, since their creation, has received from different organizations continuous support, training, equipment and funds so they can perform their products. The group "Pescado Azul" was founded on September 2001 in Isabela Island. At the beginning, the group was integrated by 17 members but in time some of them have left the group because of the lack of perseverance and because they did not receive enough profits. Anyway at this moment, the group is integrated by 10 women, all of them are fishermen's wives but only 6 are active in the business.

The principal activity of the group is to produce smoky fish and fish pâté, but recently they have starting to produce nuggets fish, fish loins in olive oil and fish fillet. Soon they will also sell fresh fish in order to reach the local community besides the tourist sector. They mainly use tuna because they consider there are enough tuna in the Galapagos Marine Reserve. The tuna is provided by the local fishermen and for this reason they count with the support of their husbands. Fishermen have seen that the business is working so eventually they see it as another work alternative, instead of concentrating their efforts only in the lobster and sea cucumbers fisheries. In this Island, some fisherfolks fish the tuna and then they sell it to "Pescado Azul".

“Pescado Azul” has to pay around 600 dollars per product in order to get the Sanitary Register which is the legal procedure to be able to sell their products. Only two of their products have already the sanitary register, the smoky fish and fish pâté. In the future they want to get the green stamp so they can export the product to the international market. The group is led by Mrs. Enma Flor, a lady who was a couple of years ago the president of the Isabelita fishing cooperative. This lady is the one who impels and manages the business. A year ago, they paid USD \$ 800 for a land of 500 square meters in which they want to build a place to work⁶⁵. They have also concreted negotiations with the Galapagos tourism sector, and according to them, many tour operators have a very good impression of the product. “Pescado Azul” started in August 2005 to provide the product to some tourism boats. With this successful result they have enough market for the moment according to their capacity of production.

They are very worried because some tourism companies will start visiting the installations and they feel they need a better place with all the facilities and quality standards, the place they are producing their products at this moment is not the appropriate. Tour leaders need to check where the product comes from, so it is necessary to have the quality standards in order to satisfy the customers; especially the tourist sector is very exigent so the standards of quality for their product and facilities must be very high.

About the quality of the product, they can guarantee that the product is very good, they have the assistance of the “University of the Littoral of Guayaquil”, so they are worry principally because they do not have a functional place to work. They are demanding to all the NGOs to support them so they can build a better installation. The group already has the design of the building; the total cost of the new facilities would be around USD \$45.500.

Most important needs according to PESACDO AZUL perceptions	
Funds	70%
Marketing	20%
Improve production quality	6%
Training	4%

They recognize that several institutions and NGOs in Galapagos have supported them and thanks to their help, they have been able to grown up. They still feel that they count with the support of these organisms and for that reason they are resolved to continue working in favor of the conservation of the Galapagos Islands. They are convinced that “Pescado Azul” could be a very successful alternative for the Galapagos Fishing Community.

With the support of Wild Aid, the group has a representative of sales in Puerto Ayora. They have a demand of 1000 kilos of smoky fish to be sold in Santa Cruz only to the

⁶⁵ Wild Aid, an NGO that supports the conservation in Galapagos helped them with USD \$600.

tourist sector. So, in order to produce 1000 kilos of smoky fish they will need 1500 kilos of fresh tuna every month which represents a good alternative for the fishing community. In summary, according to the hearings and opinion polls the following are important aspects to consider about this group:

- ⇒ “Pescado Azul” is integrated by ten members.
- ⇒ They rent a local that has been adapted for the production of smoky fish and fish pâté.
- ⇒ They have almost all the equipment required for the production process; however, the current oven for smoky fish does not fulfill the operation standards and required quality, which means a risk for the future of the business.
- ⇒ To assure the stability of the group and the success of the business, “Wild Aid” is negotiating with donors to finance the construction of the new oven with all the necessary specifications.
- ⇒ A few months ago “Pescado Azul” changed its association state to “Micro Company” with the hope of obtaining better economic benefits.
- ⇒ They have the corresponding sanitary registration that will facilitate the step for additional registrations for new products.
- ⇒ At the moment, the group attended a course on business administration organized by Araucaria and Enma Flor the President of the group was invited to Mexico in order to receive training about administration of small businesses.
- ⇒ Basically they need funds for building new facilities.
- ⇒ They have enough support from others organisms.

MARCEPGAL, CORAL, OMCA and Marisquería Baronesa

About the others women’s groups, “MARCEPGAL”, “CORAL” and “OMCA” are located in San Cristobal Island, and “Marisquería Baronesa” in Santa Cruz. These groups are not well organized and they scarcely meet together. These groups also want to start a business in order to increase the incomes of their families. The necessities are mainly training and funding, even when they initially need preparation and training, they essentially ask to the different donors to support them with budget so they can start running their small businesses.

**Most important needs
according to MARCEPGAL, CORAL,
OMCA and Marisquería Baronesa
perceptions**

Funds	47%
Marketing	22%
Training	17%
Improve production quality	14%

Chapter 12

Alternatives and solutions for the Galapagos Fishing Community

During the last decade the number of the Galapagos Fishing Community has significantly increased, at this moment, in 2005, 1001 fishers are registered in the GNP database and the majority depends exclusively on the main Galapagos fisheries which are the sea cucumber and lobster fisheries. However, at present it is clear that sea cucumber and lobster fisheries are extremely difficult. They require more sophisticated equipment, more effort per person and per day and obviously deeper immersions, because of the reduction of these resources populations caused by the over fishing.

It is very evident that the process of the population decreasing of the Galapagos lobster and sea cucumber is already well underway. The reality is that Galapagos spiny lobsters and sea cucumber already have been reduced to a level in which it will take considerable time for their populations to recover. For this reason, many environmental organizations and even several fisherfolks think that it would be important to give the resource a break until its population is well recovered. However, according to several fisherfolks, since no other alternatives are available, they demand the opening of the "logline fishing", several fisherfolks are totally sure that this fishery is the most realistic hope for the entire Galapagos Fishing Community.

There are many interrogations and expectative about the alternatives for the Galapagos Fishing Community. An average of the 54% of the fishing community in the three islands indicates that practically it is impossible to live in the Galapagos Islands working as a fisherfolks⁶⁶. In fact there are only a 4 or 5% of the fishing community who say that it is easy to make a living in Galapagos with the fishing activities. These fisherfolks are mainly the owners of big fishing boats who give employment to other fishers. So, the reality is that the Galapagos Fishing Community needs urgently other work alternatives; still it is important to mention that several fishers especially in Isabela Island want to keep working as fisherfolks, so what they want is fishing alternatives. Anyway, the majority of the fisherfolks would like to change of activity in order to be able to maintain their families.

Several institutions and different donors have performed investigations about the possible alternatives for the Galapagos Fishing Community; there exist many things points of view concerning the future of the Fishing Sector. It is important to consider the needs and preferences of the Galapagos fisherfolks but of course not forgetting the conservation of the GMR. Anyway, by analyzing other studies and according to conversations and personal hearings with different organisms we found several alternatives that might be accepted by the Galapagos Fishing Community.

Possible alternatives for the Galapagos Fishing Community

⁶⁶ See Chapter 6, Fig. 38 "Percentage of fisherfolks who can live with the fishing activities profits".

- ⇒ **Strengthen Fishing Cooperatives by reducing the number of members or creating preferential treatment for active fishers; Continuing capacity building in cooperatives.**

This addresses the need to limit the numbers of fisherfolks rather than boats or catch but also that to improve the control and definition of the group of people interested in fisheries. Once the group of fisherfolks is clearly defined, Fishing Cooperatives will have an increasing ability to self-organize, represent their interests and regulate themselves. Also, once the group of fisherfolks is clearly defined, some flexibility can be introduced to allow entry and exit of fishers.

The Galapagos Special Law has taken a step towards this need already by requiring that all fisherfolks are to be members of any of the Galapagos Fishing Cooperatives, and instituting a moratorium on entry to cooperatives. Regulations also currently require that artisan fishing permits be granted to residents of the Galapagos Islands only but this apparently is not being strongly enforced. Complete lists of members are not fully established and a lot of illegal fishing still occurs.

- ⇒ **Explore possibility of creating an Individual Transferable Quota (ITQ) System in the long term; Assess scientific research programs to see if they are collecting necessary information.**

The ITQ⁶⁷ system is used around the world and avoids overfishing but puts the minimal possible limitations on who fishes, when they fish and how they fish. This system however requires a certain level of institutional capacity and scientific knowledge about stocks in fishing cooperatives so can be implemented fully only in the long term. It involves the allocation of quotas among fisherfolks by cooperatives based on historical catch so that truly active fisherfolks receive most of the quota. Activity of fisherfolks may be monitored by other cooperative members; they can only be termed "active" if fishing is done on a regular basis annually. Quotas allocated are ideally transferable enabling fisherfolks to enter or leave a particular fishery and collect sets of quotas (different tonnages from different stocks) that match the type of fish they would like to catch with the boat they have, their crew and their location. If the historical level of fishing is higher than the sustainable level, some fisherfolks could be paid to give up their rights to quotas in the initial allocation (buy-back). Funding for buy-back could come either from the government, environmental groups, or out of future resource rentals paid by those who stay in the fishery. The fisherfolks who stay will benefit from the newly sustainable stocks, so they will be better off even if they have to pay for buy-back. The cooperative could choose to sell quota to their members and then distribute the revenue among the group.

- ⇒ **Explore short term possibilities for creating tradable quota system for vessels; Buy-back program for vessel quota as part of establishing tradable quota system.**

The tradable quota system on boats is a simpler system which can be used instead of or as a transition toward a long term ITQ system. The Galapagos Special law already limits the number of boats in the GMR, therefore it would be relatively easy to maintain this current moratorium in the Special Law on new fishing vessels but

⁶⁷ Individual Transferable Quota System (ITQ).

allow existing permit holders to replace their boats or sell their boat permits to others (if they were going to sell their boat or use it for non-fishing purposes). Because the current number of boats still allows overfishing, the trade quota system would need to be combined with a program to buy back vessel permits and retire them, thus reducing the fishing fleet. One disadvantage of limits on vessels rather than total catch by species however, is that the system is not responsive to particular species that may be overfished. Similarly, this system doesn't encourage fisherfolks to focus their effort in locations where the stocks are strongest.

⇒ **Strengthen short-term regulations to protect stocks.**

For example: make fishing seasons appropriate to biology of species as well as to limit catches and be consistent from year to year; use (fishing) gear regulations to protect species in a biologically appropriate way as well as reduce efficiency (to discourage fishing) in the short term; possibly relax regulations to serve only a complementary function as more efficient regulations by International committee are implemented.

⇒ **Reduce the pressure on target species..**

This could be done by providing incentives for locals to fish other species such as the Whitefish which is not so commercialized as there exists only one processing plant for export of this species in the Islands presently on San Cristobal. Building processing plants for this species on other Islands could reduce pressure on target species.

⇒ **Engaging Local Fishing Communities**

Identifying real economic alternatives for local fisherfolks is critical to achieving successful long-term management of the GMR. Catch-and-release sport fishing is permitted by the Galapagos Special Law, once formal regulations are approved and pilot studies are conducted. In recent years, sport fisherfolks from mainland Ecuador and other countries have pushed for establishment of the necessary regulations, arguing that the activity will have a minimal impact on the Reserve, and that it will provide a lucrative and more sustainable economic alternative for local fisherfolks. Others argue that the high initial financial investment required will preclude local fisherfolks from truly benefiting from the activity, and that at present Galapagos does not have the on-land infrastructure, surveillance and enforcement capability to ensure the activity is carried out in a sustainable manner.

⇒ **Artisanal fishing as a cultural experience**

This idea was presented by representatives of the Artisanal Fishing Community as an alternative source of income for the sector. In meetings of the JMP during July 2005, a consensus was reached to develop this activity and local users also agreed on a set of provisional regulations to manage the activity. The fishing sector hopes that GNP authorities present the proposal to the AIM for approval and implementation. This new activity which links local fishers to tourism is important as a learning process through which fisherfolks will provide services to tourists without losing their rights to fish in the GMR. The primary objective of this activity is to showcase fishing culture, including the way fishers work, the resources they use to do their work, their family life, and to help visitors understand the fishing community in Galapagos. The activity

will also reduce fishing pressures because the numbers of fish harvested during these trips will be limited and the fisherfolks will generate revenue from the visitor rather than from fishing. The proposal also includes the need, for fishers who want to be involved in this new venture, to adapt their vessels and for them to be trained to work with visitors who will be contracting this service.

⇒ **Open water fishing as a viable alternative for the Galapagos Fishing Sector.**

The Galapagos Fishing Community is convinced that open water fishing is a viable alternative over the medium term. However, according to the Conservation Sector, a sustainable open water fishery will require clarification of several critical aspects. These aspects include defining target species, developing low impact fishing gear, ensuring adequate handling for optimum quality, developing storage and transport systems, effective marketing, and the development of a monitoring system and regulations consistent with the status of the GMR. At the same time, it is essential the authorities have the capacity to control this activity effectively. According to the CDF, the development of sustainable fisheries in the Galapagos will need the support of the government and international partners and the will and flexibility of local marine reserve users to agree upon the best strategies for its development.

⇒ **The Environmental Ministry presented in 2004 7 action lines in a document named "Economic Alternatives for the Galapagos Artisanal Fishing Community":**

- To optimize the sea cucumber fisheries.
- To optimize the lobster fisheries.
- To optimize the white fishing fisheries.
- To implement the pelagic fish fisheries.
- To develop the fishery of the "meón" (another sea cucumber specie).
- To develop the fishery of the "erizo blanco" (white sea urchin)
- To develop the cultivation of pearl oysters.

As we can, more than 10 different alternatives have been identified; however these are to be discussed with the Galapagos Fishing Community in order to find a consensus. On the other hand, these alternatives should be carefully analyzed in order to see the impacts and the real benefits for the Fishing Community.

Finally, there is no doubt that any of these alternatives will only be successful if they are developed in conjunction with Galapagos Fishing Community and managed by themselves.

Conclusions

The Galapagos Fishing Community represents an important element of the entire society of the Galapagos Islands, even when there are permanent conflicts with this sector; we must accept the fishing community is one of the most important users of the GMR.

For this reason it is urgent and imperative to improve that relationship among the GNP and the Fishing Community in order to facilitate the management of the fishing resources and eventually to promote the conservation of the GMR.

On the other hand, the GNP, as with other protected area management institutions around the world, has the enormous challenge of conserving the marine resources within the boundaries of the GMR. They must also manage for a variety of values in addition to the economic benefits provided to local people from fishing.

These include the park and reserve's value as one of the world's most unique scientific laboratories, its renowned value as a tourist destination, its educational value, and its value as a World Heritage Site. All this must be done within the natural resource constraints of the park / reserve which have some severe limitations.

In order to contribute to the reduction of conflict over regulations and improve the process of participatory management, more information about the Galapagos Fishing Community seems to be required. In that regard, JICA Survey intends to provide additional information about the basic beliefs, acceptability of existing and possible management actions, and behavioral intentions regarding regulations of fisherfolks in Galapagos.

Subsequently, it may be useful to examine the results of this study. The survey also includes information related to satisfaction, communication, fisheries involvement, future concerns, and general demographics. More than a few efforts have been made in Galapagos with the aim of improving the capacity building of the Galapagos Fishing Community and improving communication channels between them and the different stakeholders and users of the GMR.

Nevertheless, even with all of these efforts, continuous disagreements and conflicts still exist in Galapagos among the Conservation Sector and the Artisanal Fishing Community.

Undoubtedly, it is important to consider fisherfolks point of view, their feelings and perceptions regarding to management actions, regulations, and the protection of the GMR. Once we get to know the current reality of the Fishing Community it would be important to implement actions that contribute to the reduction of the continuous conflicts between the Conservation Sector and the Artisanal Fishing Sector.

The results of this study show that the majority of the Galapagos fisherfolks are concerned about the protection of the fishing resources, at the same time; we found

that several fisherfolks also tend to be in favor of some level of management actions taken with the intention of curbing illegal fishing activities.

However we must be advised that fisherfolks tend to not be in agreement with the reduction of quotas or application of more strict norms and regulatory actions to control fisheries, this reaction is a result of the lack of other alternatives and possibilities for the fishing community.

Regarding the Galapagos Fishing Cooperatives, the results show that there exist a lack of communication between the leaders and the bases of the sector, moreover, internal problems inside and between the cooperatives are also a reality of the fishing community.

Based on the results of this survey, three general long-term goals are described:

To design and implement Strategic campaigns of communication with the purpose of strengthening the internal and external communication of the Galapagos Artisanal Fishing Cooperatives. In this issue, it is important to emphasize the necessity of creating an environment where members of the fishing community feel the liberty to act and express their necessities.

To define and implement alternatives for the Galapagos Fishing Community. The Ecotourism is one of the preferences of many fishermen.

Improve institutional trust and satisfaction by fisherfolks for the GNP.

We could accomplish these goals through the different five Outputs of JICA Project. Anyway, to achieve those goals we must first improve institutional trust and satisfaction by fisherfolks for entities working towards the sustainable management and conservation of the GMR.

Without the trust and credibility of the Fishing Community in the GNP, any goal or action suggested in this study could be approached. By working on the main goals suggested in this study, we will support to reduce future conflicts, not only among the fishery community but also conflicts inside their Fishing Cooperatives.

Proposal for the bonds improvement among the GFC and the GNP

(Table 8)

Source: JICA Survey

Recommendations for the improvement of the relationships among the Galapagos Fishing Community and the GNP.

To Strengthen and consolidate the image of the GNP ahead of the Galapagos Fishing Community by implementing a permanent dialogue with the leaders of the four Fishing Cooperatives. Besides, a very transparent communication campaign focusing exclusively in the Fishing Community should be implemented too.

To expand the marine education and awareness programs to all four Fishing Cooperatives, with special attention to the leaders in order to find a common vision for long-term conservation of the fishing resources.

To promote and expand the incipient research and understanding of the current socio economic situation of the Galapagos Fishing Community, with the objective to take in note and incorporate the relevant factors into the management decisions.

To produce and broadcast a Radio or TV program in order to disseminate all the information concerning the GMR and the management of the fishing resources. The dissemination of the information should be performed in a permanent way by using the most effective communication media to reach the entire sector. The program should be implemented with the participation of the fishing sector.

To support the fishing leaders of the four Cooperatives to make a real connection between them and the basis of the fishing community.

To strengthen the fisheries and fishing-independent management of single-species fisheries based on sound demographic approaches incorporating economic and social parameters.

Proposal for strengthening the information flow on Marine Reserve among the GFC

(Table 9)

Source: JICA Survey

Recommendations for the invigoration of the information flow on Marine Reserve among the Galapagos Fishing Community.

To improve communication skills among Galapagos Fishing Cooperatives and their basis⁶⁸.

With this activity we pretend to improve the communication channels and relationship among the fishing leaders and the rest of the members of the Fishing Cooperatives. By doing this we will be supporting the management processes of the GMR.

Sub-activities:

- To carry out *in-situ* chats and individual hearings with each one of the different sub-groups of the Galapagos Fishing Cooperatives. These *in-situ* activities have the purpose of promoting internal and external communication among the members of the Cooperatives.
- To produce an informative bulletin about the achievements and news of each one of the Galapagos Fishing Cooperatives in order to distribute the information within the cooperatives members.
- To conduct a training workshop with each one of the Galapagos Fishing Cooperatives about communication skills. This activity will be organized in coordination with the Navy since they have the legal authority to summon to the sector.
- To implement informative boards to be posted on strategic locations where the fisherfolks usually meet. The monthly informative bulletins and other press releases and information about the GMR will be put it on the boards.

To increase information dissemination media among the Galapagos Fishing Cooperatives and its basis⁶⁹.

With this activity we pretend to improve the dissemination of the information regarding the fishing resources and the management of the GMR. By using the radio and television as strategic tools (attractive TV and radio notes, reportages and spots) to reach the GFC, we will be able not only to disseminate the information but also we will be able to educate and promote the conservation of the GMR. Through a professional audiovisual production and the use of the most effective communication media in Galapagos, we will surely strengthen the information flow on Marine Reserve management among the Fishing Community.

⁶⁸ See Annex 4 for more details of the proposal.

⁶⁹ See Annex 5 for more details of the proposal.

Sub-activities:

- To carry out together with key people of the Galapagos Fishing Community the design and structure of a green Radio or TV Program.
- To work on the pre-production of the green Radio or TV Program (it includes the production of spots, intros and other audio or video material that helps to improve the program).
- To produce and broadcast every week the green Radio or TV Program.
- To evaluate twice per year the effects and impact of the program in the target audiences (Galapagos Fishing Community)
- To produce every year 6 TV spots and 4 documental videos concerning important topics about fisheries and the management of the GMR. The topics should be discussed with the Galapagos Fishing Community and the GNP. The video products will be broadcasted in all Galapagos TV channels.
- To train a member of the Galapagos Fishing Community who is would be interested in radio or TV production (preferably a fisherfolk who lives in Puerto Ayora, Santa Cruz to facilitate the training) so he can continue with the production of the Program.

To disseminate the information through the Fishing Cooperatives Web Page (www.pescadoresdegalapagos.org).⁷⁰

With an appropriate strategy, the Web Page of the Galapagos Fishing Cooperatives could be an important tool to strengthen the information flow on Marine Reserve management among the Fishing Community. At the same time by using attractive reports, news and short videos on line, we could promote the protection of the GMR among this important sector.

Sub-activities:

- To help the Galapagos Fishing Community to carry out an evaluation about the impacts and benefits of the Fishing Cooperatives Web Page among its internal and external audiences.
- To help the Galapagos Fishing Community to redesign the Fishing Cooperatives Web Page in order to make it more attractive and more functional to the different audiences.
- To produce every month an electronic bulletin to be publicized on the Galapagos Fishing Cooperatives Web Page. At the same time it will be important to create a list of distribution for this electronic bulletin.
- To produce every year 2 short videos of interest for the Fishing Community and put them on line in the Web Page of the Galapagos Fishing Cooperatives.
- To carry out a second evaluation about the impacts of the Fishing Cooperatives Web Page among its internal and external audiences.
- To implement a promotional campaign directed to the Galapagos Fishing Community in order to increase the number of on-line visitors of the Web Page.
- To train a member of the Galapagos Fishing Community who is would be interested in the Web Page so he can continue with the work.

Chapter 14

⁷⁰ See Annex 6 for more details of the proposal.

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Glossary of terms used in this study

AIM: Inter-Institutional Management Authority
AECI: Spain International Cooperation Agency.
CDF: The Charles Darwin Foundation
CDRS: Charles Darwin Research Station
FFLA: Latin-American Future Foundation
FMP: Fisheries Monitoring Program
FUNDAR: Foundation for an alternative and responsible development of Galapagos
GFC: Galapagos Fishing Community
GEF: Global Environmental Facilities
GNP: Galapagos National Park. Depending on context, this can refer to the organization, the Galapagos National Park, which is responsible for managing the terrestrial and marine protected areas, or to the Galapagos National Park itself.
GMR: Galapagos Marine Reserve
GMRR: Galapagos Marine Reserve Resources
GMP: Galapagos Management Plan
GSL: Galapagos Special Law
GRP: Galapagos Regional Plan
IBD: The Interamerican Development Bank
IC: International Conservancy
INGALA: Galapagos National Institute. INGALA is the regional planning body.
INEFAN: National Institute of Ecuadorian Forestry and Natural Areas
JICA: Japanese International Cooperation Agency
JMP: Participatory Management Board
MSC: Marine Stewardship Council
NF: Nature Foundation
NGO: No Governmental Organization
NEGF: New Era Galapagos Foundation
TNC: The Nature Conservancy
UNDP: United Nations Development Programme
UK: The United Kingdom
USAID: The United States Agency for International Development
UCIGAL: Coordination Unit of the Galapagos Islands
USFQ: San Francisco de Quito University
WWF: The global environment network

Basic Definitions to understand

Galapagos Artisanal Fishing: Fishing activities carried out by artisanal fisherfolks who are legally members of the Galapagos Fishing Cooperatives. Fishing as daily livelihood, using fishing methods and boats as laid out in the Management Plan for the Conservation of the GMR.

Galapagos Artisan Fisherfolk: A native person (man or woman) who works habitually in fishing, already in a pedestrian form as a captain or crewmember of a artisan fishing boat as defined in the Management Plan.

Galapagos Artisan Fishing Boat. A fishing boat which meets and abides by the given requirements in the Management Plan and which is used solely and exclusively for artisan fishing in the GMR.

Galapagos Artisan Boat owner: A native person or one with a legitimate and registered cooperative who meets the requirements laid out in the Management Plan. Proportion artisan fishing boat which comply with the given sizes, tonnage and capacities dictated by the Management Plan.

Galapagos Fishing Skills. Fishing artifacts, implements and tools, which fulfill the criteria, definitions and standard users as, laid out in the Management Plan. These implements are used only by Galapagos Fisherfolks with the aim of extracting hydro biological resources from the GMR.

Costal fishing: Fishing activities, which are conducted in the zones situated close to the coasts of distinct islands across the Archipelago Platform.

Deep fishing. Fishing activities, which are carried out in open waters, which are normally deep.

Non-Commercial fishing. Fishing activity carried out sporadically and in waters surrounding inhabited ports. It is for recreational aims and self-consumption. This type of fishing is part of the customs and traditions of the Galapagos inhabitants and its commercialization is forbidden.

Commercial fishing: Extractive fishing activity, which is carried out as a means of permanent or sporadic work with profit, aims as well as commercial fishing activity that is internal or self-consumption. According to the Management Plan, any level of commercialization or significant interchange of fishing products for money, objects or services will be considered as commercial.

Fishing Skills and Methods

Lines and Hooks: This method of fishing involves one (or a number of) principal lines. These lines can be made from distinct materials (polypropylene, polyrene, nylon, Dacron, trilene, etc) with varying diameters. Lines are fixed with iron or stainless steel hooks (singles, doubles or triples) and generally has a lead weight at the end. Within this group of skills is an extensive and varied range.

Hand Line: This consists of a nylon line and hook used with a stationary boat. Usually line bait and no weight are used.

Splicing: Consisting of a nylon line or rope to the end of which is attached a twisted wire with one or a number of hooks and bait. Sometimes, the wire is divided into two sections. A weight consisting of an iron tube filled with lead is placed at the end of the central wire. The weight can be varied according to the required fishing depth. Draw of this is divided into three groups:

a) Deep Splicing. Relates to direct stationary deep use fishing of specific species such as; cod, grouper, scorpion fish, wrasse, grey thread fin bass, white fish, bass, red snapper, etc..

b) "Bolita" or light Splicing. Uses lead balls as weight, the amount of which depends on the force of the current. A light attracting the fish to the bait is attached. Principally used in San Cristobal and mainly used for night fishing.

c) Middle water Splicing. In neither deep nor open waters with bait which generally corresponds to integral and living species. Many using anchored or drifting boats capturing tuna and half beaked fish.

Drag: Fishing method conforming to use of line, hook and weight with principal difference that a moving boat drags the live through velocity and depth. Line and dead bait is used as well as a range of artificial bait (spinners, feathers, squid, octopus) to attract the fish. The main type of fish involved is pelagic.

Long Line: Using a long line to which are attached at intervals a number of hooks with bait. Conducted in open waters along a marked drift with various buoys as well as flag markers, and lights.

Nets: Fishes are trapped or encircled by linked or mesh nets with different openings. The nets are made from dacron, perlon or nylon and other various filaments. They vary in size (length and width) and are generally used in shallow waters. They can be moved by boats or by foot.

There are two types of nets:

Inactive nets; grill nets and trammel nets: Nets, which are deployed in a fixed position between tides in which fish are trapped while trying to cross over.

Active nets which are netted and enclosed: Thrown and displayed nets, which are used by people or boats for special objectives. These nets usually have small mesh sizes and are divided into two groups:

a) Closed artisan beach nets. Deployed by people who want to fish in shallow waters around the shore, and

b) Closed artisan nets. Their sizes vary considerably (by 10s of metres) and are deployed in open, deep waters operated by a main ship with a service of a canoe. These nets are mainly used to capture mullet, gilt, mackerel, milkfish, sea bass, and bait (sardines, brown stripped snappers).

Diving: Method of fishing a diver submerges himself to capture mostly invertebrate

species. This is divided into two categories:

a) Diving with compressed air. The diver gets air from a pipe, which feeds compressed air from a compressor, which is held on a boat. The diver can remain submerged for long periods of time (hours). This is generally in waters which are less than 20 metres deep. This skill is primarily for catching sea cucumbers and lobsters. With Lobsters, as well as using his hands, the diver may use a Hawaiian rod and hook.

b) Skin diving with free air. The diver uses only his lungs and deep breaths. Mainly to capture species of invertebrates such as lobsters, sea cucumbers and octopus.

Harvesting: Method of fishing involving the manual capture of inertial marine invertebrate species which become accessible during diurnal or nocturnal low tide. Mainly for octopus, chitins and crabs, among others.

Biography

Many analysts and consultants have carried out different perception studies, investigations and socio economic surveys about the Galapagos Fishing Sector. I have found at least 66 diagnoses carried out in Galapagos. Most of these surveys are available at the library of the GNP and CDF.

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