

**Conservation and Adaptive Management of  
Globally Important Agricultural Heritage Systems  
(GIAHS)**

**Chiloé agro-biodiversity cultural system  
Chile Project Framework**

**Centro de Educación y Tecnología  
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# **The GIAHS – Chiloé Agro-biodiversity Cultural System Chile Project Framework<sup>1</sup>**

## **1 INTRODUCTION**

This document presents the Chilean National Project Framework of a global initiative of the Food and Agriculture Organisation (FAO) concerning Conservation and Adaptive Management of Globally Important Agricultural Heritage Systems (GIAHS). Chile's Chiloé agriculture is one of the pilot GIAHS, featuring the traditional agricultural practices and indigenous management systems of native potatoes and the multiple goods and services associated to the system.

The project responds to the GEF strategic long-term objective of Biodiversity, which is to mainstream biodiversity in production landscapes/seascapes and sectors. The project shall promote the positive impacts and mitigate the negative impacts of agricultural systems and practices on biological diversity in agro-ecosystems and their interface with other ecosystems; the conservation and sustainable use of genetic resources of actual and potential value for food and agriculture; and the fair and equitable sharing of benefits arising out of the use of genetic resources.

The preparatory phase of the project has been facilitated and organised by the Educational and Technology Centre, which managed to interest both national and local stakeholders to take part in the project. The project preparatory phase (2005-2006) has been carried out with the support from the Global Environmental Facility (GEF) through a PDF-B grant.

This document presents the general framework of Chiloé agriculture for the full scale project implementation.

## **2 BACKGROUND AND JUSTIFICATION**

### **2.1 Physical and Socio-economic Characteristics**

#### **2.1.1 Location**

Chiloé is an archipelago in the south of Chile, between the parallels 41° and 43° of South latitude, and is comprised of numerous islands that include the Great Island of Chiloé. The archipelago approximately has a total population of 155,000 people, and a total surface area of 9,181km<sup>2</sup>. Administratively, it belongs to the Province of Chiloé, Region of the Lakes of Chile.

#### **2.1.2 Socio-economic characteristics of Chiloé**

In Chiloé, the local economy is mainly based on subsistence production and sale of agricultural produce to local markets. The farmers have not yet been able to benefit from the opportunities of the tourism industry.

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The Huilliches natives are marginalized. They are the poorest social group in Chiloé and have difficulties in the land possession. The forest concessionaires and the tourism-related infrastructure development have occupied indigenous territories without compensating the indigenous on.

Throughout the history, the racially mixed farming communities who have many cultural practices, social and economic characteristics in common, have adopted production systems of indigenous origin.

The necessity to find better economic condition has caused a dramatic reorientation of the farm labour activities of men and women, which caused damage and barrier to traditional agricultural practices and the associated knowledge systems. The women, who have perseverance, show a greater attachment and continued the traditional agricultural practices. Likewise, they are also interested in developing a specialized product for commercialization.

## **2.2 History and General Characteristics of Chiloé agro-biodiversity cultural system**

### **2.2.1 History of the Chiloé agro-biodiversity cultural system**

The Island of Chiloé is a southern extension of the Chilean coastal range which runs from north to south, dividing the island in two different eco-regions. The east side of the island is sheltered from the Pacific storms, with a mild climate suitable for agriculture and human settlement. This coast has gentle slopes, fertile land and protected bays, elements of the landscape that create a diversity of ecosystems in the forests, pastures and sea. This combination of ecosystems is home for a traditional culture known as “bordemar”, in which local people are doing off-farm work and at the same time as subsistence farmers, fishermen and craftsmen.

The integration of different ecosystems in one productive unit is one of the main characteristics of the local livelihood system. In effect, Chiloé Island has a high percentage of rural population (45%), mainly composed by subsistence farmers working on small farms with an average size of 15 hectares.

Production for subsistence agriculture dominates Chiloé’s economy. The great majority of the people are engage in the production of potatoes, oats, wheat and vegetables, with livestock raising i.e. sheep, pigs, cattle and poultry. In addition, these activities are complemented with handicrafts made from sheep wool and natural fibers. Farming activities are for subsistence and surpluses are occasionally sold in the local markets.

Forest resources are present in most of the small rural areas in Chiloé, varying from residual areas of secondary growth to undisturbed primary forests. Even though for local farmers the forest is one of the main sources of income, there is little effort in forest regeneration. Due to the lack of alternative economic sources, forest resources extraction is inevitable. The main product of extraction is firewood for household consumption, mainly used for heating and cooking, and less than 15% is used for timber.

During the last two decades, local participation in the salmon farming industry has increased. In Chiloé, fish farming has shown a growing demand for human labor in rural areas, especially during the harvest season. This situation has exacerbated the migration rates of young people from the rural farm to the cities, decreasing their interest for the rural world and its productive potential. Through a re-validation of the cultural and agricultural patrimony of Chiloé, the project intends to stop or lessen the loosing local traditions and ancestral techniques of production and utilization of local biodiversity, especially those related with the non-conventional use of the native forest (natural dyes, fibers, fruits, handicrafts, medicine) and rescue the value of hundreds of plants that once were used by indigenous settlements.

## 2.2.2 Key species in the area

### Chiloé Forest

Chiloé's forest ecosystem is based on "Valdivian Temperate Forests". This type of forest, also known as "Evergreen", is the most complex and richest forest type of the country, formed by an intricate web of big trees, shrubs, vines, epiphytes, herbs, mosses, lichens, fungi and rich fauna of vertebrates and invertebrates.

The main tree species composing this forest type are Ulmo (*Eucryphia cordifolia*), Tapa (*Laureliopsis philippiana*), Laurel (*Laurelia sempervirens*), Olivillo (*Aextoxicon punctatum*) Lingue (*Persea lingue*), Tineo (*Weinmannia trichosperma*), Avellano (*Gevunia avellana*), Coigue (*Nothofagus dombeyi*) and Canelo (*Drimys winteri*).

Minor or secondary tree species are Meli (*Amomyrtus meli*), Luma (*Amomyrtus luma*), Fuinque (*Lomatia ferruginea*), Notro (*Embothrium coccineum*), Arrayán (*Gevunia avellana*), Tiaca (*Caldcluvia paniculata*), Traumén or Sauco (*Pseudopanax laetevirens*), and Tepú (*Tepualia stipularis*).

Common shrubs in the evergreen forest are Chilco, Chaura, Taique, Chaquihue, Pitrilla, Picha, Murtilla, Michay, and Zarzaparrilla. In open places it is possible to find Quilas and Coligues, both being native bamboo species.

In addition, there are a great number of vines and climbing plants known as Voqui such as Linlinquén, Cóguil, Pilpilvoqui, Voqui Negro, Voqui Paulún, Quilmay, Voqui Trato, Traumén, Quilineja and Coral. The Gesneriaceas family contribute with beautiful red flowers; Medallita, Estrellita and Botellita.

The ferns, mosses, lichens are very important in the evergreen forest. The moss *Dendrologotrichum dendroides* is the biggest in South America and can reach 40 centimeters height. The species of the genus *Hymenophyllum* (*Chupalla* and *Helecho película*) grow in the most humid areas.

The evergreen forest takes different shapes depending on the area, as it is the case of the Coastal Olivillo forests. This type of evergreen forest is typical on the low areas of the Coastal Range and its main species are *Aextoxicon punctatum*, *Laurelia philippiana* y *Amomyrtus luma*. A particular characteristic of this forest type is the abundance of epiphytes and trailing plants, including more than 15 species of ferns from the *Hymenophyllum* genus, one Bromelicea, three Luzuriaga, two climbings and three epiphytes. In terms of their structure, these forests area relatively stable, old and with a low perturbation incidence.

Another main forest type is the *Nothofagus* and Conifers mix forest, which appears over 400 meters above the sea level in both sides of the Coastal Range. The dominant *Nothofagus* species of this forest type is Coigue de Chiloé (*Nothofagus nítida*), together with the conifers Mañío de hojas cortas (*Saxegothaea conspicua*) and Mañío de hojas punzantes (*Podocarpus nubigena*).

In the lowlands and poorly drained areas it is common to find dense and intricate forests known as Tepuales. These forests are mainly composed of Tepú (*Tepualia stipularis*), sometimes accompanied by Canelo, Fuinque and Coigue. In the Tepuales grow mosses from the *Sphagnum* genus, forming thick cushion-type layers over the ground.

Finally, two species have great value for timber, Alerce (*Fitzroya cupresoides*) and Ciprés (*Pilgerodendron uviferum*). These two species face risk of conservation and are protected by law from been cut alive. They live in extreme conditions of high humidity, thin soils and great wind exposure.

### Endemic Fauna of Chiloé

It has been estimated that Chiloé Island is home of many endangered species of endemic fauna of limited distribution. These species include the Huillin (*Lutra provocax*), Guiña (*Felis guigna*), Zorro de Chiloé (*Pseudalopex fulvipes*), Lauchón (*Notiomys valdivianus chiloensis*), Rata arbórea (*Irenomys tarsalis longicaudatus*), and Laucha orejuda (*Phyllotis micropus fumipes*). The Monito del monte (*Dromiciops australis*) deserves a special mention as it is only exemplary of the Microbiotheria order in the world. One of the most interesting endemic species of Chiloé is the Comadreja trompuda (*Rhyncholestes raphanurus*), a marsupial that has survived since America was part of Gondwana. There is little knowledge about its biology but it is believed that he has always been an inhabitant of the forest, of nocturnal habits and mainly insectivorous. Many of these species has been classified in extinction, vulnerable or scarce.

In relation to birdlife, there are 35 bird species in Chiloé, from which around 20 live exclusively associated with the evergreen forests. There are some subspecies endemic to the island, as the Diuca de Chiloé (*Diuca diuca chiloensis*), Diucón (*Pyrope pyrope fortis*), Rayadito de Chiloé (*Aphrastura spinicauda fulva*) and Cón Cón (*Strix rufipes sanborni*).

Amongst the amphibious, Ranita de Darwin (*Rhinoderma darwini*) lives in temperate forests of southern Chile and has a limited distribution. Its small and triangular head, together with a different reproductive method from the one used by other batracios, makes from it a singular species.

It is estimated that Chiloé has more than 60 species of mosses, from which 7% are endemic. In addition, 50% of the total population of freshwater fish are endemic to Chiloé and 76% of the amphibious (33 species), 23% of reptiles, 33% of mammals and 30% of the birds are endemic to the evergreen forests (Bosque Educa, 1999).

### **Principal endemic agricultural crops of Chiloé Island**

#### Native Potatoes:

Chiloé has been considered as origin and home of a great variety of endemic species of potatoes which are notably different from those originated in the South American Andes. At the beginning, there were about 2,500 different varieties of potatoes in Chiloé, and it is estimated that more than 500 varieties are still grown by small farmers. In the modern environment and with continuing changes in economic condition, Chiloé potatoes contribute significantly to food security in the global scale. Moreover, this genetic diversity has been and will continue to be fundamental for improving potato species in the rest of the world, especially in Europe. It is possible to find small quantities of native potatoes along the coast of Chiloé National Park which are being preserved by a small group of local farmers and indigenous groups.

#### Chiloé garlic:

Chiloé garlic is only produced in Chiloé Island and has some particular characteristics that makes it different from the common garlic. Chiloé garlic is bigger than the normal garlic and has a milder flavor, making it very attractive for preparing garlic cream.

#### Chiloé horse:

Chiloé horse has been recently recognized as a different breed from the Chilean horse. Compared to the Chilean horse, Chiloé horse is smaller, stronger and more rustic.

#### Native strawberry:

As one of the most well-known fruits in the world, the native strawberry of Chiloé has been used for the genetic improvement of the many varieties of cultivated strawberries.

### **2.2.3 Associated biodiversity**

The Archipelago of Chiloé is one of the Vavilov Centers of origin of many cultures. This archipelago is center of origin of potatoes (*Solanum tuberosum*) and the local strawberry (*Fragaria chiloensis*).

There are about 200 registered varieties of native potatoes still being cultivated in Chiloé, along with a variety of garlic (Garlic chilote), which is unique to the island and suitable for cultivation to its volcanic soils. This island in addition, maintains native race of horses, the robust Chilote Horse.

The World Wide Fund for Nature (WWF) has listed Chiloé Island as one of the 25 priority areas for ecosystem conservation in the world. Both primary and secondary temperate rainforest are found on Chiloé Island in the patchwork landscape shaped as a result of 10,000 years of co-evolution with human livelihoods. They hold a wide range of species including 15 rare to endangered bird species, 33 endemic species of amphibians (3 rare to endangered), 9 species of endemic mammals (all rare to endangered), and 4 species of vulnerable to endangered freshwater fish; wild species that provide fruit (8 species), dyes (9 species), ethno-medicines (41 species) and materials for carvings/sculpture (5 species).

Goods and services provided by the system

From the environmental point of view, this system supports the biodiversity conservation, maintains the different varieties of native potatoes existing in the island, which are a great genetic wealth for today and future generations.

In relation to food security, the diversity of varieties, which historically facilitated to the native population the selection of those more interesting ones for their culinary virtues, transforming the potato in the base of the daily diet, and in many cases the main food of the socially deprived. This could have been transformed into an alimentary routine; however, it was reduced by Chilotes with the invention of multiple preparations, adding value to the particular characteristics of each type of potato.

As a cultural element, the potato culture has strong roots in the identity of Chiloé, traditionally known as “the Chilota culture of the potato”, which has been inherited generation after generation in spite of foreign influences. A series of social and cultural activities around its culture are generated, for example: “mingas”, an old tradition that reunites the community at the seedtime and harvests of the tubercle; the wide culinary product range derived from the potato; related mythology and legend.

On the other hand, with respect to the wealth of the local knowledge, a vast experience of the community exists about the different gastronomical uses of the native varieties, which only needs to be compiled and ordered to be spread to the rest of the community.

Finally, the potato culture, in relation to the agricultural production of the archipelago, is an important axis within the culture or rotation system used by the family in Chiloé.

## **2.2.4 Use of the Agricultural Biodiversity**

The knowledge of using native flora for medical purposes go back to the Pre-Hispanic times, when the indigenous groups of Huilliches and Chonos dominated Chiloé. These groups used to collect forest products for food, dye, cloth, construction materials, energy, medicine and magic. This knowledge has not been successfully transferred to the current inhabitants of Chiloé, mainly because it has been replaced by improved species and products from Europe (Smith-Ramirez, 1995). On the other hand, the degradation of natural ecosystems produces many endangered species, with which their medical potential is also lost.

In the islands of Apiao and Quinchao (which are part of Chiloé Archipelago) different use are known for 81% and 78% of their native flora, respectively (Villagrán et al., 1983; Mesa y Villagrán, 1991). These products and their use play an important role in the subsistence economy of the inhabitants of the islands. In effect, many of the forest plants that have a use for the local people are now catalogued as vulnerable species in the red book of terrestrial flora of Chile (Montenegro, 2000).

### **Fuits and eatables**

Some of the most used fruits are maqui (*Aristotelia chilensis*), avellano (*Gevuina avellana*), and michay (*Berberis darwinii*). From the nalca (*Gunnera tinctoria*) the most popular eatable part is its big

petioles which are an important source of Vitamin C for the local communities. The shoot of the quila (*Chusquea quila*) is appreciated for jam production due to its nice almond smell. The fruit of the murta (*Ugni molinae*) is widely used for making liquor and jam due to its good flavor and intense red color. The Luche (*Porphyra columbiana*), and algae that grows in the sea, is popular for cooking stews and soups.

### **Handy crafts and basketry**

A great number of training plants are used by the islanders to make basketry. The main species used are Voqui (*Boquila trifoliata*), Aprieta Palos (*Hidrangea serratifolia*) and Quilineja (*Luzuriaga polyphylla*). All of these natural fibers are very resistant and flexible because they are composed from long cells of lignified walls called esclerenclimáticas. These cells have a concentric disposition around a central axis making it capable of twisting without breaking (Montenegro, 2000). The branches of Avellano (*Gevuina avellana*) and Mañío de hoja larga (*Podocarpus saligna*) are used in flower arrangements, specially the Avellano for religious motives.

### **Dyes**

Many of the native species from the forests and farms are used by the rural communities to dye wool. The process is based on the constant experimentation and transmission of ancient techniques from one generation to the other. Villagrán (1991) identified at least 9 species used as natural tincture, with the woody ones being the favorites. The mechai (*Berberis buxifolia*) gives a yellowish color, the Huinque (*Lomatia ferruginea*) gives a brown tint, some lichens such as Barbas de Viejo are used to produce green, Huevil (*Vestia foetida*) for yellow, Quintral (*Lepidoceras chilense*) for black, and Matico (*Buddleja globosa*) for brown. The intensity of the colors goes from yellow to black, depending on how long the wool is boiled and on the amount of bark that is used.

### **Medicinal Uses**

As much as 40% of all the medicine produced in the world comes from natural sources, though only 10% of the plants known in the world have been studied for medical purposes. The indigenous communities of Chile used more than 300 plants for medicinal purposes. In Chiloé, at least 41 plant species are used for proven medicinal purposes as poultices, infusions or beverages. For instance, Matico (*Buddleja globosa*) may cure the wounds when it is used as cataplasma; Canelo (*Drymis winteri*) is used as diuretic, digestive, tranquilizer and anti-diarrheic; Chilcón infusion (*Fuchsia magellanica*) act in the kidneys; Radal (*Lomatia hirsuta*) is used for bronchial affections; Trompetilla (*Senecio otites*) is used for many illnesses; Siete venas (*Plantago lanceolata*) is used to cure and clean wounds; Arrayán (*Luma apiculata*), has astringent leaves and bark that are also stimulant and balsamic characteristics, and its roots are used to treat dysentery; Notro leaves (*Embothrium coccineum*) are used for tooth ache. Other examples of medicinal plants and trees are Tiaca, Ampe, Botellita, Chaquihue, Huinque, and Pilpil-voqui.

### **Superstitious properties**

Chiloé's native flora is also related to superstitious. For instance, there are scarce remedies against big shocks caused by Llanca (*Sarmienta repens*) and Qeslahuén (*Griselinia racemosa*); and the Chaumán (*Pseudopanax laetevirens*) is used for clearing and removal of evil or bad spirits.

### **Other Uses**

There are plants that serve for other uses, such as Romerillo (*Baccharis patagónica*) which is used as detergent; Pangué (*Gunnera tinctoria*) as fertilizer and/or enthnopesticides, and many other species of ferns for flower arrangement purposes.

## **2.2.5 The people and the organisation of the community**

The communities of the pilot sites of the project have an ample level of organization, that responds to the culture of the island. Committees of Producers, Organizations of neighbors exist, in addition to the organizations grouped around the school and to the Health Primary System. In addition, in all the sites exist productive organizations around different traditional economic activities (women producing



native potatoes, craftswomen in different materials, groups of jam production of wild fruits and emergent groupings destined to the rural tourism).

In all the sites a mainly racially mixed population exists, less numerous groups of indigenous and in some cases there are organized indigenous communities.

The population of the pilot sites, in a significant percentage, sells manual labor to the salmon companies located in Chiloé, migrating to these salary works at some times of the year, specially in season of salmon harvest where the plants processors require an important volume of manual labor.

The level of organization of the communities allows assuring a clear and permanent relation in the aspects related to the operation the project.

## **2.3 Problems, Threats/Issues to be Addressed and Present Situation**

Chiloé Island is in itself a distinct area having unique biodiversity. Its isolated conditions together with its particular geography, landscape and climate allow the development of a great number of endemic species. Chiloé Archipelago has been classified as one of the eco-regions with the highest priority in Latin America, with a distinctive and significant biological diversity at a global scale and accorded priority for conservation (Dinerstein et al., 1995). The World Wildlife Fund (WWF) has also included Chiloé forests as one of the 25 highest priorities under the strategy “Global 2000”, which support the conservation of the 200 richest ecosystems on biodiversity in the world. Nevertheless, the intervention of modern and foreign technology has changed dramatically the original landscape of Chiloé, affecting the local culture, traditions, natural richness and peculiar biodiversity of the region. In particular, the process of clearing forests to obtain land for agriculture has meant decades of felling and fires, breaking the delicate equilibrium of the forest-agriculture-sea system. Currently the biggest areas of native forest are relegated to the south of the island, Chiloé National Park and scattered places, all in degrading condition and under serious fragmentation risk. However, Chiloé rural world still conserves many ancient agricultural traditions, a unique patrimony of biodiversity and a rich culture, all of which deserve to be conserved, valued and sustainably managed.

### **2.3.1 Threats/issues to be addressed**

#### **Threats**

The main impacts come from the timber industry, introduction of high yield crop varieties, fish farming for salmon (water pollution), and uncontrolled tourism. Until the first semester of 2006, there was a proposal to build a bridge from the mainland to Chiloé Island. This project was conceived as one of the icon buildings to commemorate the bicentenary anniversary of Chile, causing controversy amongst those who supported the project to promote forestry, fish farming and large scale tourism, and those who claimed for other investments of higher priority for the Island. Recently, this project was cancelled due to its high costs.

The influence of conventional development policies, both social and agricultural, has lead to a loss of the identity of an island that had maintained its traditions for generations.

The manipulation of genetic material ultimately does not benefit the community of Chiloé, which had maintained traditional varieties at the heart of the sustainability and food security of the island. The industrial sector, through genetic engineering and patents, has developed and introduced other varieties of potato, thus controlling the genetic resources that now underpin the local agricultural economy.

The loss of this genetic material happened, ironically, because of the lack of importance that had been assigned to it by the local community, mainly due to the exclusion from control of the genetic

resources that they have contributed to preserve for generations. This situation is compounded by the departure of young people and their lack of interest for native potatoes. Thus, tradition is being lost, particularly in the case of children of people with more knowledge about the matter.

The scientific community is very interested in local potatoes because they have genes with characteristics (resistance to frosts, droughts, plagues and/or diseases) that can be used to improve the existing varieties. Currently there is a revival of interest in native potato varieties and the potato culture among farmers and consumers, which provides opportunities for conservation.

The indigenous Huilliche peoples do not have formal recognition of their ancestral territories, nor have the individual members of the community legal land titles that provide the secure tenure to invest in conservation. Their lands are often sold or leased for extractive forestry and tourism by the local government. Both biodiversity and the associated culture are lost.

Out-migration of young generations and their lack of interest to cultivate native potatoes, thus losing tradition especially for the children who suppose to continue the knowledge systems.

### **Challenges**

- To convince the community of Chiloé: farmers, governmental organizations and institutions and private sector, about the importance of genetic resources for food and agriculture, cultural, historical and agricultural resources with which the same community as a whole is endowed.
- To identify and develop niche market for this resource that will improve the quality of life of the GIAHS communities. Also, to give chance to young generation/youth to patronize the Chiloé agricultural heritage systems.
- To know in depth the physical, agro ecological, organoleptic, chemical and medicinal properties of the diverse agricultural biodiversity as well as the different potato varieties and other genetic resources that are endemic to the island.
- To develop and maintain a germplasm and seed bank resources for conservation accessible and available to the local communities for their seed requirements with assured quality.
- To have a clean and disease-free genetic seed materials for each variety that are important for the GIAHS communities.

### **2.3.2 Vision of a dynamically conserved GIAHS systems**

The project envisioned a recognised Chiloé system at the local, national and international level, as an, *agri-culture* heritage system, which is rich in culture, traditional knowledge, and its communities are flourishing and enjoying a quality life. The project also envisioned the Chiloe island to have a political framework that protects the cultural legacy and the existing biodiversity in the Archipelago.

## **3 PROJECT FRAMEWORK**

### **3.1 Project Goal, Objective and Development Objective**

#### **3.1.1 Overall project goal and objective**

**The overall project goal** is to “protect and encourage customary use of biological resources in accordance with traditional cultural practices that are compatible with conservation or sustainable use requirements” [cf. CBD: Article10(c)], specifically within agricultural systems.

**The project objective** is to promote conservation and adaptive management of globally significant agricultural biodiversity harboured in globally important agricultural heritage systems or GIAHS.

### **3.1.2 Development objective**

The development objective is to ensure food security, sustained livelihoods and reduction of the rural poverty through dynamic conservation of agricultural heritage systems and promote sustainable use of agricultural biodiversity for sustainable agriculture and rural development. All these elements shall be articulated in forms of intervention properly decided with the local community and the key partners. This objective is consistent with MDG.

The development objective of the project is consistent with the overall goal of the global GIAHS project and is therefore common to the pilot countries that have been selected in this first stage.

This dynamic conservation model will support the farmers to consolidate and adapt the traditional systems that they have developed through time, maintaining them in the long term as a factor for territorial development.

This pilot system will demonstrate that adaptation to the changes and the changing economic and environmental pressures is possible in maintaining the co-evolution of the biodiversity, the traditional knowledge systems and the cultural identity of Chiloé.

The project through collaboration with the local and national academic centers/research institutions will identify other indigenous agricultural systems, good agricultural practices, share and document experiences and lesson learned in situ conservation of biodiversity and promote incentives to the local communities and traditional farmers promoting such agricultural heritage..

### **3.1.3 Specific objectives**

The specific objectives of the GIAHS project are, as follows:

- To raise awareness and encourage the public to recognize Chiloé as a source of culture, traditions and a wide genetic biodiversity, stimulate the sustainable development on the archipelago; and make the society aware of the importance of the protection and conservation of the biodiversity.
- To leverage sustained institutional, financial and national policy incentives and support for the continued evolution of the Chiloe agricultural system.
- To support the development and demonstration of conducive legal frameworks and policy environments for the continued existence and sustainable management of ingenious agricultural systems and their associated biological diversity and knowledge systems.
- To develop a system of incentives and institutional support for the long term sustainability, and modification of existing local and national regulations affecting the Chiloe system.
- To demonstrate the economic, social, cultural and ecological values of the system
- To build the capacities of the GIAHS farming communities and populations including local and national institutions to strengthen food security, reduction of poverty, and sustained ecosystem management.
- To support active and informed participation of indigenous and local communities in biodiversity management decision-making.
- To diversify income generating sources through development and promotion of alternative agricultural and non agricultural income generating activities and identification of niche market systems
- To document traditional knowledge systems and its associated cultural contexts through integration in the formal education at various levels.
- To develop appropriate national and local intervention strategies for implementing GIAHS dynamic conservation and empowerment of local communities and the small farmers to play a proactive role.

### 3.1.4 Impacts

The project is expected to generate social, economic and ecological benefits in the local levels contributing to reduction of poverty, economic well-being and improvement in the quality of life of the marginalised local communities and valorisation of their cultural and traditional knowledge systems.

The project is likewise to promote the added value of products and services and cultural identity of Chiloé in the national level, which will allow local communities a better access to markets and enjoy the benefits of dynamic conservation of GIAHS and its associated biodiversity including tourism-related activities.

The GIAHS concept 'dynamic conservation and adaptive management of agricultural heritage systems' and the agricultural biodiversity harboured in the system is mainstreamed not only in the territory of Chiloé, as well as in the national programs, regional programs and other related agriculture policy.

The key local stakeholders will be in better conditions for promoting the conservation and sustainable use of the agricultural biodiversity, considering their contribution to the sustainability of the agricultural systems, their contribution to the immediate local needs and future necessities and food security of the local community, country and the world.

Local and national advantages associated to the adaptive management of the globally significant biodiversity is documented, enhancing the knowledge systems and the lessons learned are shared and disseminated, to enrich the local and national *agri-culture* through academic centers and recognize the value of the traditional knowledge.

Additional local impacts are expected in the conservation of soils and water, soil fertility and thorough understanding of ideal, balance and healthy agro-ecosystems.

### 3.1.5 Expected Outcomes and outputs

#### **Outcome 1.- Definition, criteria and identification for the recognition of Chiloé as a globally important site for the conservation of the Agro-biodiversity**

A national and local recognition system for Chiloé Archipelago as GIAHS Site is formulated and accepted based on the example of the pilot sites and disseminated to the rest of the archipelago.

This outcome will allow reinforcing in all the levels (local, national and international) the meaning and importance of GIAHS concept, being identified and promoting the mechanisms that guarantee their sustainability. The characteristics, goods and services of Chiloé GIAHS Site will be protected from their degradation and its agricultural biodiversity loss, reinforced the cultural values and cultural identity and the integrity of these systems.

This outcome requires understanding the GIAHS concept and its value by the communities and institutions, and to allow their active and participative processes in managing and maintaining its adaptation capacity during the last centuries, contributing to the ecological, human and economic development of the territory.

#### **Outcome 2. Institutional arrangements for collaborative conservation and adaptive management of Chiloé GIAHS.**

The main focus of this outcome is to obtain institutional agreements and assure that the policies, programs and plans of public and private institutions are aligned in the GIAHS concept and the involved stakeholders are actively collaborating in the implementation,

monitoring, evaluation and dissemination. Fundamental elements of GIAHS approach for the sustainable development of Chiloé, such as traditional knowledge systems, conservation of plant genetic resources for food and agriculture, access to resources of the local communities, regulation of the MGO, strategies for market development, etc. must be integrated in sectorial and intersectorial plans.

**Outcome 3. Sustainable management of the globally significant agro-biodiversity in Chiloé by three communities (indigenous and farmers) involved in the project.**

This outcome will demonstrate intervention strategies and innovative management of the traditional systems. This will be done through an adaptive management approach focused on agro-ecological, organizational, cultural and social elements, accepted by the community. An open dialogue between and among farmers, scientists, investigators and policy makers will be established. This will allow spaces for changes and adaptations to modern technologies and would local communities increase their capacity, efficiency and replicability of the practices, as well as conserving the essential characteristics embedded in the GIAHS site.

The fine balance between tradition and change, is one of the central elements that the project must demonstrate such as empowerment of the rural communities, to allow substantial improvements in the quality of life and promote income generation and livelihood security, support the conservation of the biodiversity and the rich cultural contexts in which it has been domesticated and used.

**3.1.6**

**Outcome 4.- Lessons learned and best practices from promoting effective management of the agricultural heritage is disseminated and shared at the national and global level.**

Through this outcome the processes and the strategies implemented in the pilot sites will be systematized, monitoring the results and impacts and accumulating a set of lessons learned. These will be disseminated through different channels. The key partners of the project will reinforce the recognition of the obtained results. In addition will formulate an effective guide to identify, support and recognize other GIAHS sites in national and international level. With the generated knowledge and the evaluated institutional agreements, conditions will be created so that professional teams of public and private institutions, access to training to accompany traditional communities in this recognition and valuation process.

## **3.2 Outline of Planned Activities to Achieve Project Outcomes/Outputs**

### **3.2.1 Outcome 1.- Definition, Criteria and Identification for the recognition of Chiloé as a globally important site for the conservation of the Agro-biodiversity (national and international recognition of GIAHS Chiloé)**

- 3.2.1.1 Identification, analysis and dissemination global value of the local agro biodiversity in Chiloe
- 3.2.1.2 Dissemination of GIAHS concept through seminars, workshop, bulletins and web page news
- 3.2.1.3 Dissemination of baseline documentation of the three selected sites in Chiloé through seminars, workshop, bulletins and web page news.
- 3.2.1.4 Public and private institutional plans and programs analysis to identify opportunities to support Chiloé GIAHS.
- 3.2.1.5 Participatory Checklist preparation to evaluate the link between sites and GIAHS strategic aspect to facilitate the adequate international recognition.
- 3.2.1.6 Participatory workshops to promote and arrange commitments to provide financial and technical support the GIAHS concept at the local and national level.

### **3.2.2 Outcome 2.- Institutional arrangements for collaborative conservation and adaptive management of Chiloé GIAHS.**

- 3.2.2.1 Design and implementation of participatory long-term management plans.
- 3.2.2.2 Design of sectoral and inter-sectoral plans, policies, and regulatory framework for the conservation of the GIAHS Sites in Chile.
- 3.2.2.3 Workshops and meetings for designing participatory management plan for GIAHS Chiloé.
- 3.2.2.4 Leadership and organizational workshops in the three Chiloe GIAHS sites.
- 3.2.2.5 Workshops with stakeholders for coordination activities, plans and programs to support community project in the three Chiloe GIAHS sites.
- 3.2.2.6 Workshops using the Chiloé GIAHS pilot-farm network to promote changes in the policies developed by the local policy makers and governmental agencies.

### **3.2.3 Outcome 3.- Sustainable management of the globally significant agro-biodiversity in Chiloé by three communities (indigenous and farmers) Involved in the project.**

- 3.2.3.1 Participatory local workshops about traditional knowledge, and valorization of indigenous agricultural patrimony.
- 3.2.3.2 Field studies to identify and evaluate traditional crops systems, land tenure and access to natural resources.
- 3.2.3.3 Communities crops and seed sharing meeting designed for and chaired by seed guardian women
- 3.2.3.4 Itinerant expositions of Chiloe potatoes varieties and associated traditional knowledge
- 3.2.3.5 Provision of small grants for implementation of local communities projects
- 3.2.3.6 Participatory workshop to define economic incentive to award best practices
- 3.2.3.7 Niche market development by organic, green food, origin and GIAHS recognition
- 3.2.3.8 Capacity building for local farmers aiming to gain control of the project. (M&E)
- 3.2.3.9 Field activities promoting and establishing the biological, economical and cultural value local genetic resources.

- 3.2.3.10 Implementation of networking and demonstration pilot-farms that are advanced on the application of the GIAHS concepts.
  - 3.2.3.11 Implementation of rural tourism-related activities to value and promote local resources.
  - 3.2.3.12 To transform the annual Chiloé Farmer and Traditional fair (exposition) in a platform to introduce the GIAHS concept among the local communities
- 3.2.4 Outcome 4.- Lessons learned and best practices from promoting effective management of the agricultural heritage is disseminated and shared at the national and global level.**
- 3.2.4.1 Field studies to update the three Chiloe GIAHS sites information.
  - 3.2.4.2 Periodic workshops to identify and evaluate most important lessons in different areas of the process
  - 3.2.4.3 Creation of mechanisms to articulate the academic and the local knowledge, aiming to promote the values of dynamic conservation.
  - 3.2.4.4 Implementation of a web site with all the information, studies, projects and on-going activities of the Chiloé GIAHS Sites.
  - 3.2.4.5 Publication of the lesson learned and a manual of best practices elaborated during the project.
  - 3.2.4.6 Publication of information materials about agricultural heritage publications aimed for farmer and indigenous communities.
  - 3.2.4.7 Publication of a manual of traditional practices that conserve and generate sustainable use of the biological resources.
  - 3.2.4.8 Implementation of a Monitoring and Evaluation process for the project.
  - 3.2.4.9 Definition of locally adapted indicators for monitoring and evaluation.

## **4 SUSTAINABILITY**

### **4.1 Institutional Sustainability**

The GIAHS project and the pilot sites have been identified in participatory way with relevant local and regional communities and stakeholders. This approach to GIAHS concept allows to assure participation of the more vulnerable local groups in the co-management of the project, allowing them to express their ideas, expectations and experience and their representation as an important part the sustainability of the project.

The project will have to create innovative mechanisms to establish institutional structure where public and private development institutions make their contributions in articulated way.

The public institutions, the universities and the local government shall work according to their respective institutional mandates; coordinating actions and research activities, policy-making, administration, extension, education, identification of alternative livelihood options and development of market opportunities.

The institutional support for a long term goal will be assured incorporating clearly the GIAHS concept in the national strategies for the conservation of the environment and the heritage, sustainable agriculture and the rural development. This will allow the existence of permanent governmental support bodies and the concept being mainstreamed in the national research and development agenda and to contribute to the institutional and financial sustainability of the project.

## **4.2 Financial Sustainability**

*At the international level*, the FAO-GPIU under the Natural Resources, Environment, Bioenergy and Climate Change Division of the Natural Resources Department shall be in charged for the global project cycle financial support plan. FAO-GPIU will assist pilot country in the mobilization of resources from prospective donors for GIAHS initiative.

*At the national level*, the project will promote the GIAHS concept and mobilize national budgetary resources to support the declaration and identification of new GIAHS systems/sites.

*At the site level*, the added economic value and generation of income for local communities through increased market access based on the appeal of the GIAHS label for real food advocates will generate resources in the long term for continuation of the Chiloe system. tinuation of these systems.

## **4.3 Social and Ecological Sustainability**

GIAHS concept applies participatory processes and promotes proactive role of the local traditional, small holder farmers and indigenous peoples. In the territory of Chiloé, the project will promote conservation and adaptive management of GIAHS and conservation and sustainable use of agricultural biodiversity harboured in the system and the associated cultural practices evolved from hundreds of years.

This protection, promotion and dissemination of the traditional agricultural heritage and knowledge systems will allow reinforcing their condition for adaptive management, adjustment to the modern agricultural practices, and careful consideration of the complex interrelationship among ecological, social and economic components of GIAHS.

The agricultural traditional systems of Chiloé is based on the culture of numerous potato varieties (*Solanum tuberosum*), local strawberry (*Fragaria chiloensis*), oca (*Oxalis tuberoso*), etc. and its potentials for organic fertilization and nutrient recycling, marine products, such as varied species of seaweeds, and the people's cultural rites according to the lunar phases and the tides, constitutes a remarkable social-human-nature relationships with their environment, and an essential foundation of the agriculture and biodiversity of the Chiloe island.

By promoting GIAHS as an adaptable response to change in economic, social and political processes, the project will promote social and ecological sustainability in three pilot sites of Chiloe agriculture system.

# **5 IMPLEMENTATION AND MANAGEMENT STRUCTURE**

## **5.1 Target Beneficiaries and Stakeholders' Involvement**

The target and immediate beneficiaries of the project are farmers of the three sites where traditional farming exists, with activities associated to the culture of the potatoes and of diverse and integrated systems of production. In addition to the pilot sites that will be benefitted after the integration and during project execution as new GIAHS sites and farmers and fisherfolks reinforced the recognition of Chiloé as GIAHS site.

The information sharing and dissemination, coordination and institutional linkages between and among stakeholders shall be managed by a project team (competent professionals) that will ensure the the technical quality, consistency of objectives and activities, and allowing spaces for participation of key local stakeholders and farming communities and institutional actors to facilitate unexpected problems that may arise during implementation and providing noble solutions to problems.

A structured mechanism of monitoring and evaluation of the activity implementation in GIAHS



Chiloé GIAHS will be prepared during the first year of implementation. In addition, it will identify the role, participation and contributions of each institutions involved in support to the project implementation and for the success of the national and global GIAHS initiative.

## **5.2 Coordination Mechanism and Managerial / institutional arrangements**

The project will be coordinated by a National Project Facilitator under the supervision of CET. At each pilot sites, a “local focal point organisation or coordinating stakeholder”, who keeps an overview of a particular aspect of the GIAHS project in the pilot site, shall be designated to facilitate with other local collaborating organisations.

### **Strategy**

The strategy is based on emphasizing the cultural tradition and the social importance that the maintenance of the biodiversity has, since it has not only genetic profit, but the basis of the Chilote community subsistence through the years in spite of the external pressures. The strategy also consider sustained development in the longer term, the economic valuation of genetic resources, the culinary uses and their most valued products, instead of insisting introduction or use of new cultivars that may inflict cultivations and practices of the Chiloé populations..

To achieve the project objectives, two stages will be considered: first stage, planning management of the different components involved in the system and that will be carried out starting from formulation of a multisectorial team who will have the mission to generate the workpalns, prioritise three main concerns: information, development of tools and action plans; then, on execution stage, it will consider, consolidate and carry out, the different points of view of all the actors involved in the system, so as to ensure their commitment during the project activity implementation.

### **5.2.1 Project Beneficiaries**

The rural communities of the archipelago, especially women and old people, will be benefited by the promotion of their traditions and customs that have remained in tact throughout the history, respect for their culture, as well as promoting youth's interest to valourise their agricultural legacy.

The rural communities (Rilán, Petanes and a Huilliche community) and organizations that request and receive volumes of seed varieties, for multiplication production process will be beneficiaries of the project, since they will also have the possibility to access the consultantships and technological and commercial development inherent to the project.

GIAHS farmers, professionals, students, local institutions and technicians of Chiloé and other organisations with stake to GIAHS to participate in capacity building programmes of the project.

The consumers that participate in the different project stages, for example in the education and sensitization of the topic, will be final beneficiaries, since they will have a wide possibility of access to information and to native crop varieties, and they will be able to participate in action planning and support the conservation and sustainable use of agricultural biodiversity.

Finally, it will provide national benefit since conservation of the local genetic resources will be promoted and implemented with wide participation of the community, which will increase the effectiveness and sustainability of the conservation of globally important agricultural biodiversity a continuing patrimony of the country.

### **5.2.2 National Agencies, Counterparts and Other Actors**

Centro de Educación y Tecnología, CET, Universidad ARCIS Patagonia (UAPA), Instituto de Desarrollo Agropecuario (INDAP), Instituto de Investigación Agropecuaria (INIA), Bosque Modelo

Chiloé (BMCH), Centro Huillín de Educación Ambiental, Corporación Municipal de Educación de Castro, Latin American Center for Rural Development. RIMISP , Programa Regional de Capacitación en Desarrollo Rural. PROCASUR, CHILOEMPRENDE, Chiloë-web, TV Producer “Tierra Adentro”, Corporación Agroecología y Desarrollo, “Nuevo Mundo” Local 1 Radio, 3 Farming communities (2 traditional / 1 indigenous), 3 Municipalities, Governor of Chiloé.

## **6 OVERSIGHT, MONITORING AND EVALUATION, MANAGEMENT INFORMATION AND REPORTING**

### **6.1 Oversight and Reviews**

The project will organize annual review meetings with stakeholders to monitor and evaluate the project implementation and to agree to the adjustment needed.

Local community workshops and meetings will be undertaken twice a year to ensure participation in every stage of the project or as need arises.

### **6.2 Monitoring and Evaluation**

Yearly analysis of indicators measurements of the project will be undertaken with stakeholders, specially during the midterm and final evaluation process. Reports to FAO will be prepared under the guidelines FAO-GPIU provided.

### **6.3 Knowledge Sharing**

The project will maintain network and linkage systems with local communities, academic institutions and institutional knowledge organisations. Integration of different knowledge will be systematized in documents and reports for scientific and general public dissemination.

## Annex 1. Chiloe Project Logical Framework

Project Strategy	Objectively verifiable indicators				
<b>Goal</b>	To “protect and encourage customary use of biological resources in accordance with traditional cultural practices that are compatible with conservation or sustainable use requirements” [cf. CBD: Article10(c)], specifically within agricultural systems				
	Indicator	Baseline	Target	Sources of verification	Assumptions and Risks
<b>Project objective</b> To promote dynamic conservation of globally significant biodiversity in Chiloe agro-biodiversity cultural system.	GIAHS is accepted in local, regional and nationally as dynamic agro-biodiversity conservation concept	CBD Articles 8(j) and 10(c), and the Cultural Landscape Category of World Heritage Convention.	National recognitions of GIAHS by public institutions related with the conservation of agro-biodiversity.  A sustainable funding mechanism is established for the long term	Documentation from national and local institutions.  Project Reports	To surpass disarticulated institutional practices of operation and with low level of coordination
	Establishment of project implementation structure for Chiloe GIAHS	Ministries responsible for Agriculture, Environment, Culture, Tourism and Academic Centres are addressing independently different aspect of GIAHS concept	Ministers, institutions and Academic Centres promote and develop together there plans and programs with key elements of GIAHS concept	FAO, Government and project reports	Consensus difficulties to identifying the characteristics of the land-cultural systems of Chiloe that will be conserved in dynamic form according to concept GIAHS
	Improvement of GIAHS conservation and adaptive management	Pilot sites face key barriers for conservation and sustainable management of GIAHS: (i) insufficient economics and social benefits; (ii) inappropriate technology transfer system that damage local culture; (iii) deficient access to markets	The key barriers to conservation and management in pilot sites are significantly reduced or removed.  GIAHS operate with sustainable finance mechanisms	Project reports. Surveys  Reports defining likings with academic and traditional knowledge and technologies continually	Difficulty of product access and services with denomination GIAHS in national dynamic markets.
	Surface conserved dynamically under concept GIAHS.	Three sites pre-chosen with characteristics GIAHS that are not recognized by the institutions and the concept is not internalised in local communities.	Chiloe Archipelago recognized as GIAHS territory	Reports from M&E surveys  National Reports to FAO with respect to implementation of GIAHS.	Difficulty in creating an international instance for the recognition of sites GIAHS.

<b>Outcome 1:</b> Definition, Criteria and Identification for the recognition of Chiloé as a globally important site for the conservation of the Agro-biodiversity (national and international recognition of GIAHS Chiloé)	Establishment of a national and local institutional support for Chiloé GIAHS	Non	GIAHS Chiloe is supported by an institutional network related on GIAHS concept implementation.	Project reports	Institutional difficulty in the joint of plans and programs  Difficulty in creating an international instance for the recognition of sites GIAHS.
	Recognition of Chiloé GIAHS national and internationally.	Non	GIAHS Chiloe receiving national and international recognition as Agro-biodiversity culture system.	Project reports  Communications from FAO	
	Establishment of a sustainable financing mechanism for consolidating and expanding the GIAHS concept	US\$ 1.0 million	Sustainable finance mechanism in place	Written commitments between stakeholders	
<b>Outcome 2:</b> Institutional arrangement for collaborative conservation and adaptive management of GIAHS Chiloé.	Participatory management plan for GIAHS Chiloé	Non	Every site have implemented there own Management Plan	Report	Commitment of land owners maintained  Commitment of land owners maintained
	Surface managed addressing GIAHS concept guidelines	0	Three pilot's sites with a surface of 10,000 ha managed and recognized as GIAHS approach.  Participant's communities empowered with GIAHS concept and applying it as development strategy.  Public and private institutions developing coordinated there plans and programs in the three pilots sites.	Reports from M&E surveys  National Reports to FAO with respect to implementation of GIAHS.	
	Operative agreement for GIAHS concept promotion and implementation in Chiloé	Non	Endorsement of operative agreements for GIAHS concept promotion and implementation in Chiloé by all key institutions and communities leaders	Signed documents	
<b>Outcome 3:</b> Sustainable management of the globally significant agro-biodiversity in Chiloé by empowered	Number of traditional crops systems dynamically conserved in Chiloé	3 traditional systems are being used with erosion risk	10 traditional systems evaluated and disseminated in the 3 pilots sites	Project reports  Evaluation documents	Project demonstrations remain relevant and of interest to local farmers  Local farmers find alternatives with their financial means
	Number of traditional potatoes varieties being used permanently in Chiloe	In the three pilots sites 50 traditional potatoes varieties are being used frequently.	By the end of the project 150 potatoes varieties will be in use in the three pilots sites and around Chiloé Archipelago	Aereal photography Surveys Project reports	

communities (indigenous and farmers) involved in the project.	Number of potatoes varieties seeds bank administrated	1 potatoes varieties seed bank administrated by Llicaldad community	By the end of the project 5 potatoes varieties seeds bank community administrated functioning with manual of procedures guarantying free access to all community members		Markets identified
	Implementation of support mechanism for agro-biodiversity traditional systems in pilots sites	Small grants available for activities not necessary related for GIAHS concept activities	5 communities project in each site being supported each year	Project reports	
	Products and services of Chiloé as GIAHS recognized site has new spaces of market	Products and services of Chiloé are recognized to be with local identity.	Products and services of Chiloé are recognized to be with local identity and in addition to be recognized from a declared site GIAHS.	Case studies Surveys Academic thesis	
<b>Outcome 4:</b> Lessons learned and best practices from promoting effective management of the agricultural heritage is disseminated and shared at the national and global level during all project timeframe.	Updated data base of pilot sites biodiversity, economic activities and traditional knowledge	Initial baseline data	Data base of the pilots sites complete and systematized, identifying clearly the factors that allow to their recognition of GIAHS sites, fortifying the identification and recognition of the Archipelago like territory GIAHS.	Project reports Systematization document each site Manual of GIAHS site identification.	Relevant agencies provide the information needed  Local media willing to collaborate as active conservation partners
	Lessons learned identification and analysis system in Chiloé GIAHS	Community Lessons learned are only disseminated by orally.  Scientific papers not available to community.	Lessons learned identification and analysis system through the different knowledge system implemented permanently.	Project reports Technical Manuals Procedures manuals	
	Documentation and studies about Chiloé's traditional knowledge published and disseminated	Limited and Isolated Documentation and Studies about traditional knowledge.	At the end of the project ample set of studies and publications in different aspects of traditional knowledge	Academic papers Bulletins Community manuals	
	System of traditional Knowledge farmer recognized by local academic centers.	Partial recognition and without concrete applications.	Academic centers developing to research programs and formation in which the traditional knowledge is a key aspect, with real spaces of participation of farmers.	Report National and International Publications Photography Videos	
	M&E system implemented	Non	M&E system implemented and results disseminated to stakeholders.	Evaluation reports	

## Annex 2a. Estimated budgetary expenditures (GEF and other Co-funding Sources)

Outcome	Planned Activities	US\$ GEF	US\$ National Organisation and Other Sources	US\$ Total
<b>Outcome 1.-</b> Definition, Criteria and Identification for the recognition of Chiloé as a globally important site for the conservation of the Agro-biodiversity (national and international recognition of GIAHS Chiloé)	1.1 Identification, analysis and dissemination global value of the local agro biodiversity in Chiloé.	12.000	12.000	20.000
	1.2 Dissemination of GIAHS concept through seminars, workshop, bulletins and web page news	10.000	8.000	18.000
	1.3 Dissemination of baseline documentation of the three selected sites in Chiloé through seminars, workshop, bulletins and web page news.	18.000	10.000	28.000
	1.4 Public and private institutional plans and programs analysis to identify opportunities to support Chiloé GIAHS.	9.000	4.000	13.000
	1.5 Participatory Checklist preparation to evaluate the link between sites and GIAHS strategic aspect to facilitated the adequate international recognition.	8.000	4.000	10.000
	1.6 Participatory workshops to promote and arrange commitments to provide financial and technical support the GIAHS concept at the local and national level.	18.000	10.000	24.000
		<b>75.000</b>	<b>48.000</b>	<b>123.000</b>
<b>Outcome 2.-</b> Institutional arrangements for collaborative conservation and adaptive management of Chiloé GIAHS.	2.1 Design and implementation of participatory long-term management plans.	22.000	15.000	25.000
	2.2 Design of sectoral and inter-sectoral plans, policies, and regulatory framework for the conservation of the GIAHS Sites in Chile.	13.000	10.000	22.000
	2.3 Workshops and meetings for designing participatory management plan for GIAHS Chiloé.	12.000	8.000	18.000
	2.4 Leadership and organizational workshops in the three Chiloé GIAHS sites.	17.000	22.000	37.000
	2.5 Workshops with stakeholders for coordination activities, plans and programs to support community project in the three Chiloé GIAHS sites.	16.000	10.000	24.000
	2.6 Workshop using the Chiloé GIAHS pilot-farm network to promote changes in the policies developed by the local policy makers and governmental agencies.	17.000	15.000	30.000
		<b>97.000</b>	<b>80.000</b>	<b>163.000</b>
<b>Outcome 3.-</b> Sustainable management of the globally significant agro-biodiversity in Chiloé by three communities (indigenous and farmers) Involved in the project.	3.1 Participatory local workshops about traditional knowledge, and valorization of indigenous agricultural patrimony.	20.000	10.000	28.000
	3.2 Field studies to identify and evaluate traditional crops systems, land tenure and access to natural resources.	40.000	20.000	50.000
	3.3 Communities crops and seed sharing meeting leadered by seed guardian women	28.000	20.000	45.000
	3.4 Itinerant expositions of Chiloé potatoes varieties and associated traditional knowledge	20.000	15.000	30.000
	3.5 Provision of small grants for implementation of local communities projects	55.000	350.000	392.000
	3.6 Participatory workshop to define economic incentive to award best practices	7.000	5.000	10.000
	3.7 Niche market development by organic, green food, origin and GIAHS recognition	20.000	70.000	88.000
	3.8 Empowerment workshops for local farmers aiming to gain control of the project. (M&E)	15.000	6.000	21.000
	3.9 Field activities promoting and establishing the biological, economical and cultural value local genetic resources.	25.000	20.000	45.000
	3.10 Implementation of a network of demonstration pilot-farms that are advanced on the application of the GIAHS concepts.	15.000	10.000	25.000
	3.11 Implementation of rural tourism activities as an activity to revalue and promote local resources.	35.000	100.000	120.000
	3.12 To transform the annual Chiloé Farmer and Traditions fair in a platform to introduce the GIAHS concept among the local community.	40.000	120.000	160.000
	<b>320.000</b>	<b>746.000</b>	<b>1.066.000</b>	
<b>Outcome 4.-</b> Lessons learned and best practices from promoting effective management of the agricultural heritage is disseminated and shared at the national and global level.	4.1 Field studies to update the three Chiloé GIAHS sites information.	20.000	25.000	45.000
	4.2 Periodic workshop to identify and evaluate most important lessons in different areas of the process	15.000	12.000	22.000
	4.3 Creation of mechanisms to articulate the academic and the local knowledge, aiming to promote the values of dynamic conservation.	20.000	28.000	45.000
	4.4 Implementation of a web site with all the information, studies, projects and on-going activities of the Chiloé GIAHS Sites.	8.000	12.000	18.000
	4.5 Publication of the lesson learned and a manual of best practices elaborated during the project.	6.000	6.000	12.000
	4.6 Creation of local agricultural heritage publications aiming farmer and indigenous audience.	10.000	5.000	13.000
	4.7 Publication of a manual of traditional practices that conserve and generate sustainable use of the biological resources.	10.000	12.000	22.000
	4.8 Implementation of a Monitoring and Evaluation process for the project.	12.000	8.000	15.000

	4.9 Definition of locally adapted indicators for monitoring and evaluation.	7.000	8.000	15.000
		<b>108.000</b>	<b>116.000</b>	<b>224.000</b>
		<b>600.000</b>	<b>990.000</b>	<b>1.590.000</b>

## Annex 2b. Proposed Work Program and Time Frame of Project Activity Implementation

Outcome	Planned Activities	Year					
		1	2	3	4	5	6
<b>Outcome 1.-</b> Definition, Criteria and Identification for the recognition of Chiloé as a globally important site for the conservation of the Agro-biodiversity (national and international recognition of GIAHS Chiloé)	1.1 Identification, analysis and dissemination global value of the local agro biodiversity in Chiloé.						
	1.2 Dissemination of GIAHS concept through seminars, workshop, bulletins and web page news						
	1.3 Dissemination of baseline documentation of the three selected sites in Chiloé through seminars, workshop, bulletins and web page news.						
	1.4 Public and private institutional plans and programs analysis to identify opportunities to support Chiloé GIAHS.						
	1.5 Participatory Checklist preparation to evaluate the link between sites and GIAHS strategic aspect to facilitate the adequate international recognition.						
	1.6 Participatory workshops to promote and arrange commitments to provide financial and technical support the GIAHS concept at the local and national level.						
<b>Outcome 2.-</b> Institutional arrangements for collaborative conservation and adaptive management of Chiloé GIAHS.	2.1 Design and implementation of participatory long-term management plans.						
	2.2 Design of sectoral and inter-sectoral plans, policies, and regulatory framework for the conservation of the GIAHS Sites in Chile.						
	2.3 Workshops and meetings for designing participatory management plan for GIAHS Chiloé.						
	2.4 Leadership and organizational workshops in the three Chiloé GIAHS sites.						
	2.5 Workshops with stakeholders for coordination activities, plans and programs to support community project in the three Chiloé GIAHS sites.						
	2.6 Workshop using the Chiloé GIAHS pilot-farm network to promote changes in the policies developed by the local policy makers and governmental agencies.						
<b>Outcome 3.-</b> Sustainable management of the globally significant agro-biodiversity in Chiloé by three communities (indigenous and farmers) Involved in the project.	3.1 Participatory local workshops about traditional knowledge, and valorization of indigenous agricultural patrimony.						
	3.2 Field studies to identify and evaluate traditional crops systems, land tenure and access to natural resources.						
	3.3 Communities crops and seed sharing meeting leaded by seed guardian women						
	3.4 Itinerant expositions of Chiloé potatoes varieties and associated traditional knowledge						
	3.5 Provision of small grants for implementation of local communities projects						
	3.6 Participatory workshop to define economic incentive to award best practices						
	3.7 Niche market development by organic, green food, origin and GIAHS recognition						
	3.8 Empowerment workshops for local farmers aiming to gain control of the project. (M&E)						
	3.9 Field activities promoting and establishing the biological, economical and cultural value local genetic resources.						
	3.10 Implementation of a network of demonstration pilot-farms that are advanced on the application of the GIAHS concepts.						
	3.11 Implementation of rural tourism activities as an activity to revalue and promote local resources.						
	3.12 To transform the annual Chiloé Farmer and Traditions fair in a platform to introduce the GIAHS concept among the local community.						
<b>Outcome 4.-</b> Lessons learned and best practices from promoting effective management of the agricultural heritage is disseminated and shared at the national and global level.	4.1 Field studies to update the three Chiloé GIAHS sites information.						
	4.2 Periodic workshop to identify and evaluate most important lessons in different areas of the process						
	4.3 Creation of mechanisms to articulate the academic and the local knowledge, aiming to promote the values of dynamic conservation.						
	4.4 Implementation of a web site with all the information, studies, projects and on-going activities of the Chiloé GIAHS Sites.						
	4.5 Publication of the lesson learned and a manual of best practices elaborated during the project.						
	4.6 Creation of local agricultural heritage publications aiming farmer and indigenous audience.						
	4.7 Publication of a manual of traditional practices that conserve and generate sustainable use of the biological resources.						
	4.8 Implementation of a Monitoring and Evaluation process for the project.						

### **Annex 3. Dynamic of change in Chiloé and its relation with the rural world: a process in full evolution<sup>2</sup>.**

The current process of change that affect Chiloé's social and cultural order are related to a series of internal and external factors. These factors are, in turn, affecting the life and traditional culture of Chiloé's rural environment. At the same time, the same factors benefit the citizens of Chiloé whose daily tasks are made easier and whose quality of life has increased thanks to the advances made in communications, health and connectivity.

In general, the dynamics of change in the rural environment can be clearly diagnosed by asking the rural population, due to the fact that it is a common topic of local conversation, in which the past is nostalgically compared with the difficulties of the present. Inquiring on how the Big Island of Chiloé has changed in the last half century, recurring topics appear, such as: the current low farming productivity, the excellent fertility of the soil in the past, the better weather conditions of the past, the disappearance of the *mingas* (traditional community work), the diverse effects (positive and negative) of the irruption of salmon companies, the benefits of accessing electricity, the improved connectivity with the road network as well as the current migration of the youth to the cities. These changes are the result of various causes and implications, those of which will be explored in this paper.

The current dynamics of change become even more complex when attempting to find opportunities within this new scenario. This is also true when seeking the benefits that this process of modernization and globalization, of Chile and the world in general, contributes to rural communities.

This is why it is important to be able to describe the current dynamics of change in Chiloé, placing emphasis on those changes that the communities perceive positively; to identify the possible threats and opportunities produced by this process that affect rural communities; and to recommend a series of concrete actions aimed at appreciating the cultural, agricultural and natural heritage of the rural world thanks to the coordinated action carried out by the relevant actors involved in the rural environment.

#### **CAUSES OF THE PROCESS OF CHANGE IN CHILOE**

International literature on the main causes that trigger the process of change in rural areas identifies a series of causes that describe the reasons of this process. Many of these causes are linked to a specific local or international context, thus it is difficult to relate them to the Big Island of Chiloé. Among these causes are: armed conflicts, radical political changes, great natural disasters (tornados, tsunamis, earthquakes) (DFID, 2001). Nevertheless, there are other causes that can be related to the reality of Chiloé, such as globalization, public policies (for example: structural adjustment during the decade of the 80s), local norms and beliefs (DFID, 2001), and the process called "modernization" (Ellis, 2000).

In the specific case of Chiloé, local research studies (Agraria 1990; Oyarzun, 2000, Armesto, 2001, Bannister, 2005), as well as the workshops carried out with rural communities (GIAHS Chiloé Project Report, 2006), identify the modernization process of Chile, the effects of the education system carried out in rural area and the market effect as the key factors that explain the local dynamics of change.

<sup>2</sup> This paper is part of the GIAHS Chiloé Project (Globally Important Ingenious Agricultural Heritage Systems), sponsored by FAO (Food Agriculture Organization – UN) CONAMA (National Environmental Commission – Chile), locally implemented by CET (Centre of Education and Technology – Chiloé). For more information, visit [www.chiloepatrimonioagricola.cl](http://www.chiloepatrimonioagricola.cl)



## THE MODERNIZATION PROCESS

The current process of modernization experienced in Chile includes relevant aspects that affect rural life in Chiloé and, of course, in many other rural areas of Chile. According to Ellis (2000), relevant aspects of this process are:

- a) globalization of Western culture, with the consequent loss of local identity;
- b) reduced prices of primary products due to the internationalization of the markets;
- c) industrialization as a result of lowering costs and economies of scale;
- d) urbanization;
- e) and finally, the concentration of wealth by a small few.

These are determinant factors in the process of change produced in places that remained isolated from this type of development until the end of the last century, such as the province of Chiloé.

The effects of globalization become evident in diverse areas such as clothing, food, customs, people's aspirations and dreams, which have, no doubt, changed dramatically in the last fifty years. These effects have been strongly influenced by the mass media (television, radio, press and the internet).

With regard to the reduced prices of agricultural products, this can be explained nationally by the influence exerted by the prices negotiated within international markets. Locally, a limited effect is generated due to the effects of small-scale production, since 88% of farming properties are below 30 ha. (Provincial Government of Chiloé, 2004). The productive systems are mainly based on subsistence, selling the surplus, with low technological levels, characterized by minimal machinery and the use of human labour and animal traction for ploughing.

Industrialization has had its clear effects on Chiloé, mainly in the aquaculture field. Since the end of the 80s, large salmon producing companies have been established which have pushed forward the business that has led to making Chile the second largest salmon producing country in the world, with sales of over 1,2 billion dollars (Salmon Chile, 2004). During the last twenty years, this accelerated development, in addition to the arrival of shellfish culture at the end of the 90s, has changed the relation of rural communities with their usual forestry and agricultural traditions. This has led to a change in their condition as farmers to wage earners.

Census data in Chile reveals that the rural population has decreased from 57% in 1907, to 40% in 1952, to 18.5% in 1990 and to 14.1% in the year 2000 (INE, 2003; MIDEPLAN, 2000). In spite of the lowering percentage of the rural population in Chile, Chiloé remains at a high rate of rurality, 44% in the year 2000. Due to the process of modernization experienced on the Big Island of Chiloé, this percentage will be drastically reduced.

With regards to income distribution and the concentration of wealth by a small few, we can see that at a national level, in 1998, 20% of the most well-off families concentrates 57.3% of the country's wealth, while 20% of the poorest families hold only 3.7% of the national income. Comparing the poverty levels in urban and rural areas for the year 2000, we can observe that the poverty in urban zones reaches 20.1% and in rural zones reaches 23.8% (Mideplan, 2000).

## EDUCATION

Chile's modernization process has also affected the education models implemented in the rural zones. The educational program contents are aimed at developing students' capacities through an urban perspective, detached from the rural world. The expectations are focused on work outside rural areas.

At the present time, the coverage of rural primary schools in Chiloé is sufficient, but there is much discussion regarding the quality of the education delivered within these schools. Many times, one teacher must tend to the needs of all of the students at all levels, making the learning process and progress of the students very difficult. On the other hand, most rural schools only provide the first six years of primary

education, which in turn results in many children having to migrate to nearby cities in order to complete their basic education and continue on to secondary schools.

Those students who aspire to post-secondary education can opt for a private university in the provincial capital of Castro, technical professional institutes or definitely migrate to the continent in search of better opportunities.

Thus, most students finish their high school and university studies detached from the rural world and with a series of skills and abilities that fit the urban environment. This leads to a low regard for rural culture and work, and the consequent migration of young people to the city.

## **MARKET**

The “market”, understood as the interaction between the offer and demand process in the daily lives of the rural communities, as well as the importance of money in our society, can be considered part of the modernization process of our society. Thus it deserves to be dealt with in a separate chapter.

One of the main changes produced in the last half-century in Chiloé is the dependence rural families have on money in cash. In the past, this element had little importance because other activities resolved the basic subsistence needs of rural families. These activities include barter, mingas, neighbours helping neighbours, upbringing, plantation, and food preparation, and the ingenious creation of devices that resolved the basic subsistence needs of rural families.

Money has taken on importance in the modern lives of rural families, given that they need economic incomes in order to buy food that no longer is produced locally, such as flour, poultry, liquors, or quinoa which has disappeared. There is also the need to purchase other foods that are now considered part of the modern basic food basket, such as “Yerba Mate”, coffee, rice, soft drinks. In addition, there is the need to pay for services that did not exist in the past, such as electricity, water, gas, cellular phones and, even in some cases, firewood for cooking and heating, given the shortage of this energy resource.

The new consumer trends and habits of the people who live in the rural world are also being influenced by the market, the media and fads, which determine the expected income in the short, mid and long terms. This affects the communities’ relationship with their surrounding natural resources, exerting excessive pressure on the resources. This results in unsustainable management of the natural capital of the Big Island of Chiloé.

## **CURRENT FORCES OF CHANGE IN CHILOE**

### **INDUSTRIALIZATION**

As mentioned above, industrialization is part of the modernization model that has characterized Chile’s development in the last decades. Thus, aquaculture has grown remarkably in the Lakes Region, becoming the engine of industrial development of the region.

In the province of Chiloé, this activity has had a great impact not only in urban zones, but also in rural areas, as well. Firstly, new inhabitants have come to the city from other parts of Chile, producing a considerable growth of the cities, new infrastructure, the introduction of new customs to the area, as well as the perception of rising delinquency and violence in the city. The unemployment rate in the Province of Chiloé is much lower than the national average.

In the case of the rural zones, the establishment of salmon farming centres, marine shellfish farms and industrial net washing plants have encouraged many traditional farmers to work as day workers and wage-earners with these companies. This has become part of the farmers’ diversification strategy. In general, rural families look for at least one form of money income so as to satisfy their basic food and services needs, while they continue working their lands with sheep and cattle, sowing potato and working their vegetable gardens. In this manner, the aquaculture companies’ demand for workers is well received by the community who perceives it as a secure work opportunity. Despite the fact that there the work offered is considered poorly paid, it is the only source of income, for isolated sectors, such as the numerous distant islands of the

archipelago. It is worth pointing out that this source of work has most probably allowed many people to stay in the rural sectors, avoiding abandoning the rural coastal zones of Chiloé.

## **RURAL-URBAN MIGRATION**

Temporary migrations are not new to the Chilote society. During the last century, men from Chiloé helped colonize Aysen and Magallanes, travelling to the southernmost zone in small steamboats. They were highly esteemed because of their hard-working abilities. Many of Chiloé's wealth was produced in the Patagonia. This migration would take place in the summer, during which time manpower was also required in Chiloé for farming labours. Thus, often women were the ones who had to do all the hard rural work in the summer, or ask their neighbours for help with heavy labour through mingas.

During the last two decades, Chiloé's industrialization process has brought along with it sources of labour in various rural zones, which keep part of the population connected to the land and its tradition. Nevertheless, there is an undeniable migration of young people to the urban centres that offer job opportunities in services, construction and commerce.

Research carried out in Chiloé (Bannister, 2005), shows that rural communities are aware of the ageing population given the migration of the youth to the cities and their preference for work that is not physical. This process generates the loss of traditional knowledge related to the rural world and its culture.

One of the elements that have contributed to attracting a certain percentage of the population to stay in the rural environment is the improved infrastructure. The rural electrification projects currently cover most of the sectors in Chiloé. The improved road network has also allowed for public transport to reach isolated sectors and maintains the rural population connected to the urban centres. Both of these factors, along with the impact of mobile communications, provide the conditions for what rural families consider a better quality of life, and represent a definite element in the permanence of families in their places of origin.

## **REGARD AND DISREGARD FOR THE RURAL ENVIRONMENT**

Along with the process of migration to the city and the educational models applied in eminently rural zones such as Chiloé, there is another component of the dynamics of change: the appreciation for the rural environment.

At present, various initiatives exist that aim at appreciating the rural environment, such as the Biodiversity Fair that takes place in Castro, Traditional Fairs in different parts of the island, religious celebrations like the one that takes place in Cahuach in the month of August, and projects that direct their efforts to supporting specific product and service initiatives that transmit the Cultural Identity of Chiloé.

These initiatives are aimed at Chiloé's own distinctive culture through its products and services. It is an attempt to counteract the globalization process that produces a homogenized society, achieving interesting opportunities that introduce distinct products and services to the market that incorporate elements that hold a high regard for the rural world and the cultural identity of a territory that has unique characteristics, such as the Archipelago of Chiloé.

Despite the above, rural families continue to see their young people leave for the cities because they disregard rural work, its traditions and its ways of life. This is because they do not perceive the possibility of earning income through the rural ways of life, nor do they believe that it is possible to achieve their life goals in the rural world.

## **TOURISM**

The regional government of The Lakes Region, as well as the main municipalities of Chiloé have defined tourism as one of the main axes for the territories development for the next few years.

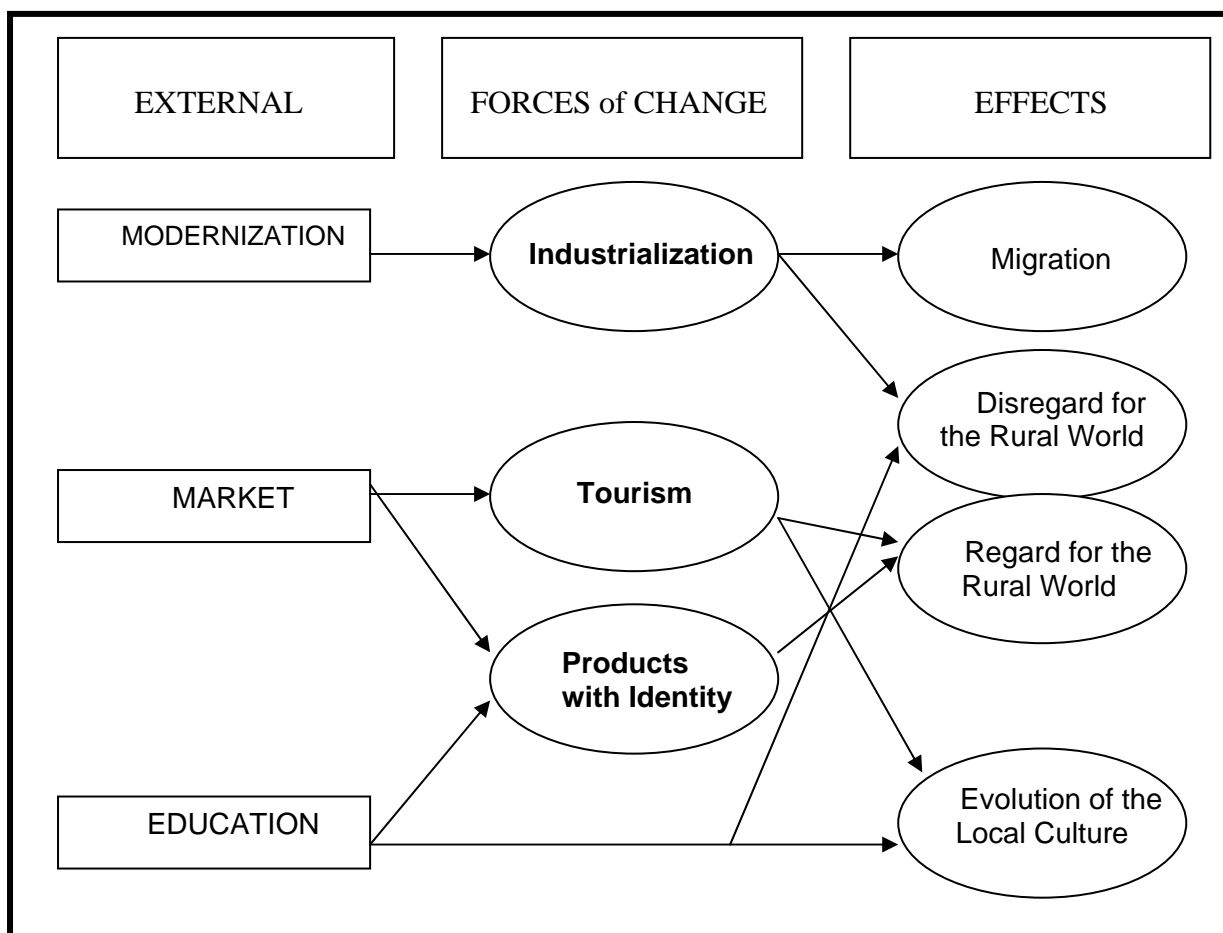
In this manner, tourism presents an excellent opportunity for recovering traditions as well as earlier rural culture, given that it is clearly a distinct element with regards to the rest of Chile. The Province of Chiloé possesses special traits and a cultural identity that the rest of the country considers to be different, and this is

gradually being perceived as such by foreign tourists, as well. Elements such as the food, the architecture, the biodiversity present in the evergreen forests, the craftwork and the landscape of the islands and the channels are characteristics that are key for the development of tourism in the province. The rural world includes a large part of these elements, and the people who inhabit the rural environment carry out forms of life based mainly on production for subsistence, with the ability to perform a wide array of diverse activities, and with a number of ingenious solutions for supporting the hard weather conditions and the historical isolation that has affected the Archipelago of Chiloé.

Therefore, tourism presents a great opportunity if it is developed in an organized fashion and with awareness of the elements that distinguish Chiloé along with the potential ability to place these elements in high regard for tourism. Otherwise, and considering the development process of tourism in Chiloé up to date, it runs the risk of evolving with little organization, offering low quality services, banalizing Chiloé's traditional cultural elements, and giving control of the tourist activity to businesses and groups that are external to Chiloé.

Among the effects of tourism and the arrival of outsiders to the Island of Chiloé, there is the introduction of new customs, new needs, all of which contribute to the evolution of the local culture. An important consequence that has occurred in the last few years is the purchase of rural residential properties by people from outside Chiloé. These properties are often times obtained at convenient prices given the disinterest older people have for their secondary productive lands. This phenomenon is closely related to the disregard young people have for the rural world and their consequent migration to the cities in search for better opportunities.

FIGURE 1 . Graph summarizing the interrelations of the dynamics of change present in Chiloé, as part of Chile's development process.



## **THREATS, OPPORTUNITIES AND CHALLENGES**

As described at the beginning of this paper, the current dynamics of change on the Island of Chiloé produce a series of threats and opportunities for rural traditions and culture.

### **THREATS**

- The homogenizing process of our society, proposed by the globalized mainstream directly attempts against Chiloé's cultural identity and its related traditions, given that it appears to be more attractive to be part of a modern world, based on a consumption economy.
- Chile's modernization process and the scale economy trend, brings along with them a series of new technologies, an expansion of the production scales and the introduction of various new crops to the rural world of Chiloé. If all of these changes are not adopted with the necessary caution, it may lead to the disappearance of endemic varieties, as well as the extinction of a productive tradition that is unique in the world.
- Industrialization of the Province of Chiloé, as the only axis of development and growth, could provoke a definite loss of rural knowledge through discouraging the preservation of rural labours and emphasizing the disregard for rural life.
- An educational program aimed at the urban world, with absolutely no connotation of the regard for Chiloé's cultural identity, its traditions, its customs and its natural elements, poses a threat to the survival of these distinctive qualities in a modern and globalized world.
- Rural depopulation due to the attraction produced by the cities and wage-earning jobs poses a threat to maintaining an active rural population that, without a doubt, grant positive externalities and environmental services that are not appropriately appreciated and are of primary importance to the urban population.

### **OPPORTUNITIES**

- Chiloé is a unique place in the world where a number of agricultural, natural, cultural and traditional elements remain latent. These elements are sources of alternative solutions to modern world problems.
- Tourism is an excellent opportunity for Chiloé because it can be an economically viable alternative to appreciate rural knowledge and traditions, bringing the rural world closer to the people who live in the city and have lost contact with nature and rural life.
- On the other hand, tourism presents a great complement to current rural life styles that, in general, are based on a diversified productive system, thus comfortably fitting this activity into the array of labours each year.
- A basket of goods and services that has and passes on the identity of Chiloé, distinguishing itself from the rest of the products that exist in the market, is a clear opportunity for the rural world. Products such as native potatoes; Chilote lamb; Chilote garlic; wool craftwork, wood craftwork and basketry; are clear examples of products that have a real opportunity in the national and international markets. In addition, these products can be produced under organic certification or under clean production standards, and labeled with characteristic tag of Chiloé.
- There is a powerful sense of belonging to the Island of Chiloé among its inhabitants, based on the strong presence of the unique local culture, and on a series of traditions and elements that are particular to Chiloé. This sense of belonging is an ideal platform for beginning a process of distinction of these elements, so as to capture new markets, which in turn generates a viable economic, social and environmental option for the rural communities of Chiloé.

## **CHALLENGES**

Without a doubt, the main challenge is joining criteria regarding the priorities for advancing towards the recognition of the rural world's value, its traditions and the wisdom behind rural knowledge. The diverse causes and forces of change that are affecting the partial process of losing these elements have been analyzed in this paper. This is why, having a clear breakdown of what is happening in the rural world and how complex and intricate the relation between different factors are, the necessary conditions should be produced so as to revert certain processes, trigger rural education experiences and support productive systems that are different from the rest. It should also develop the legal framework that definitely allows to provide support to this process that, when seen from outside its context, seems to go against the development mainstream.

## **RECOMENDATIONS ON HOW PUBLIC POLICIES CAN CONTRIBUTE**

State organisms and institutions can contribute in various areas of rural development, aimed at recognizing the need to maintain a rural world that is active, given the countless services it provides to the rest of the country (food, recreation areas, drinking water, wood, clean air, erosion protection, among many other environmental services).

In this sense, public policies should include alternatives that promote and support initiatives that include traditional rural knowledge elements within their programs. These alternatives should also generate enhanced value based on the elements of cultural identity of the rural territories, they should promote distinct products and services based on the organic or clean production elements. Finally, the educational programs should be reformed, introducing local historical elements, identity and traditional activities carried out in the area.

This can be implemented through the following:

- Regulatory framework that grants certification of origin to products and services that come from a territory that has special traits.
- Support programs that provide subsidies for initiating activities with enhanced value based on cultural identity.
- Certification programs and promoting organic farming production.
- Certification programs and promoting clean production.
- Native Forest Law, that places value on Chilean native species, grants subsidies for planting and restoration of native species.
- Reforming the education system, changing the study plans.
- Creation of schools that generate the necessary capacities for the rural world.
- In the university, developing career options that are linked to the development of the rural world.
- Fixed norms regarding the achievement of responsible social and environmental measures for the local industries.

Clearly, there are current development processes that are impossible to revert, such as the process of modernization or cultural and market globalization. However, taking advantage of the same opportunities that these processes produce, measures should be taken in order to protect the local identity and traditions, with the aim of preserving the rural heritage of the local communities.

## **Annex 4. Proposed Designation Criteria for local and national GIAHS**

The GIAHS project shall develop its preliminary designation criteria at their local designation systems for local and national GIAHS. Such criteria may be organized around six categories (subject to change and further discussion), as follows:

1. Conservation of natural capital such as biodiversity
  - Reduction of agro-chemical use following IPM-criteria
  - Local experimentation with traditional varieties
  - Genetic Modified Organism exclusion for protecting origin biodiversity globally important
2. Developing system-based economic opportunities
  - Utilisation of the GIAHS designation to develop economic opportunities
3. Maintaining cultural heritage
  - Respecting the local tradition when planning for new infrastructure
4. Developing policy support
  - The GIAHS community formally participates in designing of a rights-based policy development process
5. Supporting research
  - Action research as well as fundamental research contribute to dynamic conservation of the GIAHS
6. Set-up of a heritage-sensitive governance system
  - State subsidies can be utilised for heritage-sensitive development work in GIAHS villages
  - GIAHS project funds are utilised so that the GIAHS governance system becomes self-sustaining

## Annex 5. Stakeholder mechanisms

### A logic for and a description of the multi-stakeholder collaborative management set-up:

The traditional/indigenous institutions / decision-making mechanisms / customary law and forms of social organisation that are of relevance for the conservation and sustainable management of biodiversity and agricultural landscapes are often not known / recognised or included when governments make conservation and sustainable development policies and plans. These institutions that have co-evolved with the biodiversity and ecosystem characteristics are time tested and still (largely) functional in the selected GIAHS pilot systems. The root causes identified (economic /social and policy) rapidly undermine these institution with resulting losses in biodiversity and gaps in the transmission of associated knowledge.

The collaborative management set-up will depart from the acknowledgement by state and other actors of the functionality and legitimacy of traditional institutions and an understanding of their importance in biodiversity/ecosystem conservation and adaptive management. The primary role of the collaborative management set-up is to support customary practices of importance to the biodiversity and ecosystem management objectives. The role of state institutions is to identify and implement policy and public investment opportunities that support these practices (mitigating the impact of the root causes) and use state extension services to help farmers with technical problems related to biodiversity conservation and ecosystem management and to provide tools and human/knowledge/financial resources for planning, monitoring and evaluation. These institutions or a designated regional/local state or civil society institution will take the responsibility for pilot project implementation and facilitating the management process. The role of civil society institutions is to mobilise additional knowledge and provide services to the farmers supportive of their customary practices. Civil society actors are also effective brokers between state institutions and farmers and can help raise awareness. The role of universities and research institutions involved is to help deepen the understanding of the relevance of customary practices and provide technical and policy advice to other stakeholders when requested. In each pilot system the stakeholder make up is based on an analysis of the existing institutional set-up and stakeholder composition. They also devise joint decision-making mechanisms and TORs during for the FSP. During the FSP they will set up a long term mechanism for collaborative management.

<b>Main Stakeholders:</b>	<b>Role in Project Management</b>
CONAMA (National Environmental Council)	Chilean GEF Focal Point. Responsible government institution
Centro Educación y Tecnología (CET)	Lead facilitating institution (NGO), designated by CONAMA. Technical support and co-funding.
3 Farming communities (2 traditional / 1 indigenous)	Main actors in all activities represented through customary institutions.
3 Municipalities	Local Policy issues and co-funding.
Governor of Chiloé	Local Policy issues.
CHILOEMPRENDE	Small Grants co-funding.
Instituto de Desarrollo Agropecuario, INDAP, Regional Office Los Lagos, Región X	Technical support and co-funding, regional policy issues (extension)
Latin American Center for Rural Development. RIMISP	Research support and co-funding.
Programa Regional de Capacitación en Desarrollo Rural. PROCASUR	Extension and training support and co-funding.
Universidad ARCIS, Chiloé	Technical advice / research support and co-funding
Proyecto Bosque Modelo Chiloé	Collaboration on integrating traditional farming systems with forest conservation and use, including data exchange



Centro Huillín de Educación Ambiental	Dissemination, Education.
Chiloë-web	Support with publication, advocacy and photo materials.
TV Producer "Tierra Adentro"	Dissemination support and co-funding.
Corporación Municipal de Educación de Castro	Training, results dissemination, co-funding
Corporación Agroecología	Marketing, Technical support, training, education, Biodiversity Fair, co-funding
"Nuevo Mundo" Local I Radio	Dissemination support and co-funding.

## Annex 6. Maps



Fig1. Location of Chiloé Archipelago

## Annex 6. Bibliography

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