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The Journal of Terraced Landscapes
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Visualising women in terraced agriculture

Maruja SALAS and Lidia Esther ROMERO MARTÍN

This issue of the Journal of Terraced Landscapes is dedicated to the memory of Heather Peters (1946 – 2021) who enlightened the beginning of this editorial endeavour and was abruptly interrupted by a fatal accident. The grief of your absence has not overshaded the inspiring moments of our fruitful conversations.

We are presenting this issue with four articles sharing the perception to convene a fruitful debate and conversations about the role of women in terraced landscapes. This theme poses the challenge to understand deeper how agricultural terraces integrate women as a creative force with visionary spirit of transformation and empowerment.

The authors, women scientists, disclose feminine perspectives in agricultural terracing as life-giving protagonists in generating and transmitting knowledge and practices rooted in specific cultures and territories. These contributions depart from own concepts of the rural women and their ways of seeing and interpreting their realities.

Three of the four articles (Camara, Ferreira, and Izquierdo and Romero) underline the systemic conditions of the economic models which drastically hide the driving force of women's agricultural knowledge and practices behind agricultural production in different rural contexts. Each of these significant articles emphasizes a variety of situational cultural aspects, such as women's ways of caring, knowing, preserving and increasing biodiversity in the terraced landscapes. Moreover, the powerful and nurturing message of women, striving to restore a social wellbeing in which food is no longer a commodity, is highlighted.

These contributions are supported by qualitative methodologies that prioritize the perceptions, ideas, and the original voices of women in their own societies. They constitute original and unique constructions of reality from the point of view of the one-life-story, the elaboration of structured interviews, as well as the use of insightful archival photos to depict the different roles of women in a historical sequence.

The fourth article by Constanze Sixt is beyond the framework of the systemic conditions that affect rural women. It is a conceptually and methodological contribution of a fascinating level of abstraction that presents women from different historical and social realities related by the concept of tectonics.

Lianet Camara, PhD on Cultural Heritage, in her article Women in agriculture in the Andes: between critical issues and value deals with a critical balance of the structural loss of knowledge in different rural Andean communities in Peru. Particularly, she focuses on women whose multiple ways of organization --like associations, clubs, committees, and groups -- provide them a support basis to cope with issues related to the loss of knowledge. She identifies specific concerns of women regarding the transmission of knowledge and values for the preservation of biodiversity in the terraced landscapes and the rights to food sovereignty.

Liliana Ferreira, architect, presents: Marks on the land by the “little hands” - a testimony of life that is a tribute to rural women from the Madeira Island, Portugal, who besides their household activities and engagement in handicraft production, have contributed to shape the extreme deep slopes into intricate terraced gardens; humanized territories full of life histories. This article focuses on a 91-year-old woman whose life introduces us to her world of memories which are inevitable for the projection of the future of terraced landscapes. The author also presents a well sorted selection of archival photos that complement the narrative of one case life history.

Irma Izquierdo Suarez, anthropologist, and Lidia Esther Romero Martín, geographer: their article Rural women of La Gomera (Canary Islands, Spain): multi-active and

custodians of traditional knowledge on an island of agricultural terraces tunes in the voices of eight women from different terraced landscapes in La Gomera, Canary Island, Spain. Each one tells her particular life story in a conversational modality triggered by open interviews. From the thorough content analysis of the life histories emerge several themes around family events, agricultural work in the terraces, and personal destinies. These are compiled by the authors in a flow of captions that introduces us to an insider and feminine perspective of agricultural life in the terraced landscapes.

Constanze Sixt, architect, offers an original perspective in her article Intertwining tectonics – the intercultural work of Anni Albers, she interweaves art, architecture, and terraced landscapes. These three themes are reflected by the author inspired in the work of the designer Annie Albers (Bauhaus), who sets the foundations of her theoretical approach to art encouraged by the geometric forms of Pre-Colombian art of textiles and stonewalling in Mexico and the Peruvian Andes.

The scientific articles share a special quality of treating women in a field of social tensions in which they are not only subjects of subordination but also capable to conquer and live with dignity. This personal awareness is polysemic in each case, full of contradictions, and not a simple triumphalist success story of empowerment.

Article

Lianet Camara (Peru)
Has a PhD in Cultural Heritage and Territory. She has researched issues relating to food, urban geography, environment and landscape geography, and women. She has carried out research activities and produced several publications especially in the topic of agricultural terraces in the Andean area of Peru. She worked at the University of Verona and collaborated on several activities with the University of Padua.

Women in agriculture living in the Andes: between critical issues and values

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ABSTRACT

Women in agriculture have always played a fundamental, significant and irreplaceable role. A large percentage of women live in rural areas and contribute to family values, well-being and the development of the rural economy.

This work is the result of field experience and large research concerning terraced areas and traditional agriculture, based on interviews and conversations with farmers, women and agricultural workers. The article aims to highlight critical phenomena concerning the loss of traditional knowledge in the research areas and such losses can negatively impact community cohesion, social and cultural values.

The paper highlights how some groups, associations, women's committees try to face these problems with the support of the institutions through three significant concern: biodiversity, sovereignty and food security.

KEYWORDS

terraces, women, traditional knowledge, biodiversity, sovereignty

1. INTRODUCTION

The Andean mountains are the orographic element that characterizes all the geographical and human aspects of Peru: the mountainous area is identified by a vast extension of high lands, narrow valleys with high peaks and deep gorges.

The heterogeneity of the geographical environment and the need to manage it systematically has led the Andean societies to develop a local strategy by designing an agricultural calendar for the main ecosystems, identifying different ecological indicators for different agricultural practices through the adaptation and acclimatization of crops at different ecological levels[1] and managing to create microclimatic conditions suitable for the domestication of plant and animal species[2].

The geography of the Inter-Andean valleys is not uniform and the presence of several ecological zones introduces a factor of vertical complementarity[3], which integrates production (economic and social) in different ecological niches along the mountainside.

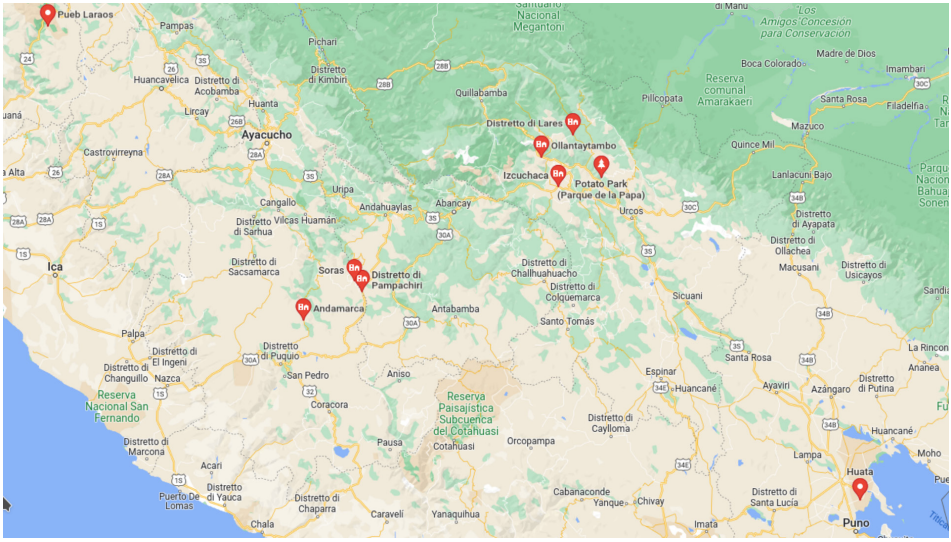

Figure 1. Map of study areas in the Central Andes of Peru. (Source: Google maps, 2022)

The complex and sophisticated agricultural and water techniques that allowed cultural development which are signs of landscapes that testify to a notable rationalization and management in the use of space and resources of which today's societies still make large use.

The communities under this study are located in various inter-Andean valleys of Cusco, Ayacucho, Apurimac and Lima regions (Figure 1) and have a large presence of terraced slopes (Figure 2). The presence of raised fields[4] is a feature of the Puno plateau landscape, it is a traditional multifunctional technology used in flood areas to allow agricultural production.

The situation of the study locations reflects the state of rural communities in Peru. There is a condition of constant persistence of rural poverty despite the rapid economic

Figure 2. Laraos terraces in Yauyos Province, Lima Region, Peru (photo by Lianet Camara).

growth experienced in recent decades, peasant families have serious social and economic inequalities with limited access to natural resources.

Based on these premises, the objective of the work is aimed at identifying the ways in which some communities try to face the harmful effects of the loss of traditional knowledge and skills. Actions to restore and preserve their knowledge promote and enhance traditional agricultural systems in terraces and raised fields as well as the sustainable use of biological diversity. It also seeks to highlight the significant contribution of rural women through their work in agricultural, livestock and marketing activities.

The methodology used on this research consist of interviews and informal talks with people in various communities of the central Andes and Puno plateau as well as an observational approach to the landscape and customs of the populations in question.

2. METHODOLOGY

The finding shown in this article is the result of field experience and extensive research, which shows data that concerns women part due to facts described below.

The survey tools used have been taken considering a qualitative approach: the data collected came from open unstructured conversations and informal interviews with men and women farmers, agricultural operators living in rural communities of the Central Andes of Peru, they carry out traditional agricultural activities on terraces, raised fields and rotational fields. This mode of interaction was considered more appropriate due to their low level of education and the use of their own native language which is predominant in the area of research.

This data collection was performed in different periods: in 2012 a field research was carried out in many communities of the Andean valleys: such us the communities of Pampachiri, Pomacocha and Soras in the Chicha-Soras Valley of the Apurimac Region

and Ayacucho, the Municipality of Carmen Salcedo -Andamarca in the Sondondo Valley of the Ayacucho Region, the Municipality of Laraos in the Lima Region, the Municipality of Zurite, Ollanta in the Cusco Region and the Municipality of Huatta in the Puno Region.

In 2014 the communities of Patacancha and the Potato Park in the Cusco Region were visited as part of a field trip of the II Conference on terracing, finally in 2017, the Potato Park and the Lares Valley in the Cusco Region were visited for observational purposes and informal meeting with the farmers participating in the programs of the ANDES Association (Quechua-Aymara Association for the sustainability of livelihoods) (Figure 3).

Figure 3. Exchange of products at the market (photo by Lianet Camara).

The study areas covered in this research are a complex and heterogeneous space, both from a socio-economic, cultural, geographical and ecological point of view. This complexity poses great challenges to various rural development proposals by public, private and NGO institutions. Communities are also a dynamic space with initiatives, which have the ability to combine financial, institutional, human and social resources in favor of new ways of promoting development. Failed and successful interventions of these developments have left the communities with a precious heritage of experiences that can bring out new ways of improvement through local action and by public and private actors. These improvements will be highlighted later.

3. TRADITIONAL KNOWLEDGE CRITICALITY

The data collected for this article have been analyzed by identifying some critical aspects concerning the loss of community's knowledge: impoverishment of the genetic biodiversity of plants and crops, criticality of cultural aspects such as language and traditions, on which women have a fundamental role in transmission to future generations.

Many indigenous knowledge are at risk of extinction due to rapid changes in natural environments, rapid economical, cultural and political evolution on a global scale. Practices vanish as they become inadequate and their competitiveness diminishes to new challenges due to their slow adaptation.

Several examples of loss of knowledge due to political, economic, social, cultural factors etc. are described below.

The agriculture had played an important role in the Andes for the development of the first civilizations in Peru that developed production systems and technologies suited to the diversity of the mountainous environment. In the 16th century, with the collapse of the Inca civilization, meant a halt to innovations in agriculture. The indigenous and mestizo population was marginalized and isolated in the haciendas[5] producing traditional

crops and whose productive capacity never recovered from the disruption caused by this event. Agriculture in Peru underwent significant changes during the 1960s. The Agrarian Reform[6] was the most important change project of the time, however it was weakened by internal contradictions and deep-rooted bureaucratic structures (Matos Mar and Mejía, 1980).

In the late 1980s and 1990s, neoliberal policies were established by structural adjustment programs of the International Monetary Fund and the World Bank, the markets were liberalized with the subsequent elimination of protectionism for small-scale agriculture. The new export-oriented agricultural policy influenced the internal market which was excluded from any type of development in the sierra. The degradation of natural resources accelerated the erosion of genetic resources; the social organization of the communities collapsed resulting in the loss of their traditions. In 1995 the "new land law" 26505 had as a prelude a debate on the validity and future of peasant communities. Communities were considered by liberalism as obstacles to development as it perceived that collective land rights acted as a brake on the formation of a free market and optimal allocation of resources. The transfer of compensatory resources applied for the effects of impoverishment was via the implementation of neoliberal policies, the peasantry became the object of the so-called "social programs".

During the inspections, Andean farmers expresseded their dissatisfaction with the management of State social programs considered inefficient and incorrectly managed, as there is little control of aid.

Rosa, a shepherdess from Puno believes that: "[...] the aid provided by the state teaches rural populations to idleness; the farmers expect the S/. 100 of the *Juntos* program which should meet the needs of families in need […]; people are no longer poor as they once were […] and instead they get used to help". An agricultural worker from Soras declares that "the authorities of the Municipality distribute aid to favor their families, what has arrived for the *friaje*[7] has not been given to the poor [...], this situation has created divisionism in the community". An Andamarca worker reiterates that "people have become inactive and

no longer want to work in their *chacras*, because they rely on money from social programs". The benefits recognized by these programs in one hand increase consumption in the short term and better education and health in the long term, but on the other hand it is noted that the effects are palliative and do not change the factors conditions of poverty (Trivelli, 2019) in a short term.

Many of these programs have been aimed at women because their greater responsibility is associated to this social group and above all because the real possibilities that this type of intervention generates processes of autonomous development.

Alcázar and Espinoza (2014) found positive impacts on women's negotiating skills, more involved in decisions making about home resources; however, it improvements are partial and appear more evident in areas where there are fewer limits set by the rural context and poverty. These impacts are less pronounced where women face greater limitations in extricating themselves due to their mother tongue and where there is less access to formal education.

The extinction of the language is another factor of acculturation. The elimination of linguistic diversity has hindered the transmission of traditional intergenerational knowledge in several ways. The farmers of the Laraos community no longer speak Quechua, their children have never learned it and no one in the community is interested in learning it. Tales, narratives, myths and family conversations are a primary source of oral transmission, and it is above all the women in the rural areas of the Sondondo Valley hold these traditions and pass them on to their children. The family environment is therefore the propitious space where young people learn this cultural background. This knowledge is transmitted in the mother tongue, in fact Quechua is a language that has "a superior ability to express human thought, has words that express feelings and actions that do not exist in other languages"[8].

Spanish, being the official language imposed for several centuries, enjoys a socially recognized privilege compared to native languages, which are limited to private and

domestic uses. National education continues to be understood as the process of cultural deindigenization (Trivelli et al. 2009), that it is a device in charge of leaving behind the entire Andean cultural heritage which continues to be interpreted as "inferior", tending to de-legitimize the traditional system.

The economic problems in rural areas see young people having to contribute to family income by migrating to cities to find work and thus contrast the situation of poverty that affects families in rural areas.

The most significant component in the dynamics of the demographic process is the internal migration. There are relationships of dependence and domination to which all rural localities are subordinated to the hegemonic centers (cities, economic enclaves, markets). In this perspective, domination is exercised through the exploitation of labor and the extraction of surpluses; a process which in turn produces the decapitalization of the countryside and its consequent disintegration as an economic, social and cultural unit (Quijano, 1967).

The farmers of Laraos report that the young people leave the community to go to the cities to study and to work in the mines, or they look for other job opportunities in Lima or Huancayo. Even on the Puno Plateau, many farmers especially young males have abandoned traditional agricultural systems and terracing. Seasonally and sometimes permanently, to migrate to the cities and mines to sell their working capacity.

However, migrations do not mean a break in social relations, but rather a deterritorialization of the countryside. The peasants who have abandoned the countryside now live in the city; a woman from Huatta comments: "I come to the countryside because my parents' land is there and because I like animals, but my whole family lives in the city", many other families in the Chicha-Soras Valley say that "We are no longer in the countryside but in the city; we come here (in the countryside) every now and then". Among the families encountered, it seems that the return to the countryside is linked to a question of loved ones, for local holidays and for the surveillance of the property (house, animals, land).

Farmers derive their identity from agricultural work because they refer to it by their customs, beliefs, culture; in this sense the earth has a strong subjective component; it binds the members of the community, mutual relations between relatives and friends are preserved, therefore its symbolic meaning transcends that of a productive resource.

One of the greatest threats of traditional knowledge is the loss of biodiversity of traditional agricultural species. The spread of improved varieties, mainly hybrids, have changed the production area and have decimated the local varieties.

This study has found there is a substantial loss of knowledge about the diversity of native potatoes, maize and other crops in the visited areas. Many farmers in Laraos, Andamarca and the Chicha-Soras Valley no longer remember the names of the local potato varieties, they report that processing and harvesting are difficult because the potatoes are small in size, low productivity and yield ago they thus did not have a market for selling. The community of Pampachiri has also lost numerous varieties of corn.

To stock up on seeds, farmers report that: "once they bartered them at village fairs, now they don't do it anymore [...]". This exchange of seeds, product ideas and knowledge between communities, mainly in the hands of women, allows to obtain varieties of crops for the subsequent agricultural campaign.

The loss of knowledge of crop varieties is linked to the language knowledge since most varieties of potatoes, corn and other crops have a nomenclature in Quechua and Aymara, the loss of learning of native languages has prevented knowledge diversity of agricultural species.

4. SIGNIFICANT EXPERIENCES AROUND BIODIVERSITY, FOOD SECURITY AND SOVEREIGNTY

Traditional knowledge represents a widespread cultural heritage in rural communities;

they are linked to a specific territory resulting from shared and non-formalized learning practices. This article refers the knowledge of local cultures that have preserved biodiversity, traditional and artisan products for millennia.

Traditional knowledge refers to two components of the anthropic phenomenon: the first are the practices with which individuals satisfy their material needs; the second are the beliefs that lead to spiritual satisfaction.

In this regard, numerous NGOs, cooperation agencies and, in some cases, the State through social programs have promoted recovery projects. Since the realization of these projects, the inhabitants of the study areas have become aware of the loss of their knowledge and the importance of their resources. Several experiences in which communities have tried to raise critical issues are reported below.

4.1 Biodiversity

The Andes are global biodiversity hotspot areas, home to an extraordinary richness of species and high levels of endemism. The rich biodiversity is found in small agricultural production units extended along the vertical axis of the mountains, both in terraced areas or on the slopes. In Peru, agrobiodiversity includes 4400 native plant species used, 1700 cultivated and 182 domesticated species. Almost 80% of the food consumed throughout Peru comes from the Andes.

Here are some examples about important agrobiodiversity centers in the Cusco Region: The Potato Park[9] is located in the Municipality of Pisaq and it is one of the most innovative experiences in which environmental management is intertwined with the empowerment of the native population.

The Potato Park is one of the main centers of genetic diversity of potatoes[10], in the park there are 1340[11] varieties (including potatoes and other tubers), as well as 7 of the 8 known cultivated species and about 32% of wild cultivars[12].

The Lares-Yanatile valley located in the Cusco Region is another rich biodiversity area that develops between 1000 and 4800 meters above sea level. It is thought to have the highest corn diversity in Peru. Four communities have an estimated total of 95 corn varieties (Swiderska, Stenner, 2019); hundreds of potato varieties and wild relatives. In Pamapacorral, a small community in the Valley, 22 farmers grow a wide variety of potatoes. For example, Mr. Julio Hancco, his brother and their families hold more than 200 varieties each one and together with ANPE (National Association of Ecological Producers), APEGA (Peruvian Society of Gastronomy), CONVEAGRO (National Agricultural Convention) and OXFAM International have understood the possibility of making an alliance between producers and chefs with the aim of establishing gastronomic chains based on the bastions of biodiversity and enhancing the work of the farmer.

The family have a crucial role in social development, it confers on its members various complementary functions. Women participate in all stages of agriculture, especially in the preparation of seeds, in the weeding of crops, in the harvesting and conservation of products.

Some studies (Velásquez et al., 2014, Zimmerer, 1996) have made it possible to identify the exchange of seeds as one of the many factors that influence the management of genetic diversity, in particular of traditional crops. Most of the seed flow occurs locally, personally between neighbors or relatives or between neighboring communities (Gamboa 1993). Other researches (Eddowes, 1992; Velásquez et al., 2014) revealed the interdependence between the exchange of seeds and other traditional cultural traits: community identity, persistence of the use of the Quechua language, transmission of traditional knowledge, the ritual life of people, which in Peru is based on ancestral respect for the land and its manifestations.

In this way, farmers decide which seeds to plant, which ones to select and to whom to assign their seeds as food or material to sow. These decisions are made on the basis of the rules established within the communities and families; they are habits that work to stimulate and facilitate the widespread dissemination of seeds, on the basis of reciprocity and exchange (Zimmerer, 1996).

The knowledge and skills of women on seeds begin with the need to know how to use the criteria of separation, arrangement, collection, accumulation and disposal, on the basis of knowing how to manage the methods for classifying and dividing crops, grouping them according to the needs of the family. This knowledge of seeds has been collected through numerous testimonies in different communities of the Cajamarca Region[13].

While choosing seeds, women not only relate the characteristics of color and size but also the yield of the crop, they identify the flavor and texture of each product. All this is performed to ensure continuity of the traditional diet. For this reason, some women are deeply concerned about the growing "invasion" of imported foods because it puts traditional eating habits at risk and can lead the loss of interest in biodiversity conservation.

The demand for seeds from the formal sector is linked to varietal change. Farmers manage cultivars of different types: enhanced and commercial (widely accepted in urban markets) and indigenous non-commercial (for local consumption). In addition to local fairs, the seeds are purchased from intermediaries, from INIA, from SENASA (National Agricultural Health Service of Peru), they represent about 5% of certified seeds[14].

In Peru, the General Seed Law[15] requires the Seed Authority to be competent in the production, certification and marketing of good quality seeds. However, 10% of crops that use certified seeds are processed on the coast and for export. In principle, national seed legislation is not intended to support the "farmer's seed system" and its traditional practices in the management and conservation of plant genetic resources.

The dangers deriving from the depletion of biodiversity and their effects on health have been highlighted several times in numerous documents by the FAO. The same agency notes that abandonment of the production of traditional food products often results in a reduction of the food variety. Therefore, following this analysis, the importance of conserving native varieties *in situ*, in their natural habitat, began to be significant. In cases where these are endangered, specific forms of *ex situ* protection must be used to seed banks.

In this context, the communities of the Potato Park in 2010 signed an agreement for the repatriation of potato varieties with the CIP[16]. The agreement was for the return of native potato seeds stored in the CIP gene banks. The Potato Park has also sent the "botanical seed" of the potato varieties to the Svalbard Global Seed Vault[17] in Norway, making the shipment subject to the obligation to return when requested. These conventions are the first initiatives in the world between a community and research institutions, this reinforces the innovative character of the Park, whose experience is an international point of reference for undertaking other collaborations.

4.2 Food security and food sovereignty

The main factor accessing food is poverty, food security and food sovereignty. Poverty limits both the basic food basket used to meet nutritional needs and access to other complementary factors such as health, education, clean water and sanitation. Poverty is measured by the basic consumption basket which many rural households in the study areas cannot reach.

In Peru, despite the increase in food production and economic growth over the past thirty years, a significant part of the population does not have physical, social and economic access to enough food[18]. Faced to this problem, the Peruvian legislation is lacking and inadequate on food safety[19]. In 2012, important agricultural policy guidelines were presented for the period 2012-2016, which aimed to "reduce the high levels of poverty in the countryside in a context of more inclusive growth". In 2013, the National Strategy for Food and Nutrition Security ENSAN 2013-2021 and subsequently ENSAN 2015-2021 program was created. The diagnosis of the document reveals a negative and worrying situation, it identifies serious deficiencies in the five components of food safety. The law Nº 31315 of 2021 seeks to establish the legal framework for the development of public policies in the field of food and nutrition safety.

The debate on food sovereignty[20] in Peru is still incipient, the executive has opposed bills for food sovereignty and has focused on that of security. However, the law alone is not enough; ensuring food security and the right to food will require much more than an

adequate regulatory framework.

The state has defined the food, agricultural and fisheries policies within an open economy and the laws have been approved in a restrictive framework of the World Trade Organization and by the free trade agreements that Peru has signed with more than fifty countries (Eguren, 2015).

In this framework, Peru's trade policy has been the subject of a partial vision that has promoted the extreme opening of markets with little concern for economic and social costs. This controversy reflects how food markets are still far from being transparent and how commercial opening has become a double-edged sword that threatens the well-being of family farming.

In Peru and in the study areas, generations of peoples have developed diverse, complex and locally adapted agricultural systems that are managed through traditional institutions and techniques, based on local knowledge and practices. The women working in the areas under study are responsible for food production and family care, retain traditional knowledge on diversity, on the uses of plants for nutrition and health. In the following paragraphs we will describe some strategies used by women in the study areas that outline the way to deal with the various elements of food security and sovereignty.

The crops that women manage in the Andes are varieties of corn, potatoes and grains which have received the most attention from agricultural research and stand out for their importance in the availability and quality of nutrients. The great diversity of Andean crops also implies a great variety in the processing of products: all grains can be transformed into flours that can be used in bakery and pastry products, be transformed into snacks with high nutritional value. For example in the Pomacocha community due to the decrease in the prices of quinoa for exportation, farmers have begun to produce *mazamorras*[21] and jams to be sold at fairs. However, it is a small business, which does not allow it to compete with the large supply of the agro-industry market.

Most of the study communities and those visited declared that they store the crops produced using different methods of conservation processes and the long-term preservation of food products. The most common procedure to preserve the tubers for years is the freeze-drying of the potato from which the *moraya* or *chuño blanco* and the *chuño* are obtained, in the same way the potato is also preserved in special places for several months for daily consumption.

For foods of animal origin, the most common procedure is dehydration, drying and salting of the meat. *Charqui* is the traditional form of preserving meat either whole or sliced and dried in the sun and the air. All products are stored for long periods, are rehydrated and prepared in different dishes and soups.

The storage of agricultural products represents one of the necessary conditions to guarantee the food security and sovereignty of communities. This knowledge allows the production surpluses to be stored for the following years, in order to use them when the climate prevents large harvests. These logics and strategies are aimed at ensuring the supply of food.

In all study communities, livestock farming is a complementary activity to agriculture and is generally market-oriented. For this commercial function, the sale of animals ensures a capitalization that will be used in case of need. Cattle, sheep, pigs, goats and camelids are raised, but also minor animals: guinea pigs, birds, poultry and animals are used for meat and derivatives (milk, eggs, meat, skins, wool).

The Puno plateau has become a showcase to show the progress made by farmers with the PROLECHE project. The Municipality of Huatta has installed a dairy production plant, and with the patronage of the Sierra Exportadora project inaugurated the second phase of the plants in 2014: the so-called Ecolácteos-Huatta. Many women have joined the project and sell the milk from their farms to the Municipality, some of them produce cheeses in an artisanal way. The women of Andamarca also produce *queso de carrete* (spool cheese), the cheese is associated with the local food culture and trade, and much of their production

is destined for the Lima market, thanks also to the large number of immigrants from the different provinces of Ayacucho.

In the communities of the Chicha-Soras Valley and on the Puno plateau, the breeding of camelids provides significant economic income. Demand in the wool sector has grown in recent decades both in urban areas and for exports with a growth rate of 28.9%[22].

In the study areas and in different Andean communities, women are also involved in the small-scale commercialization process. The weekly fairs generally held in the capital of the municipality are spaces visited by many farmers where it is possible to exchange seeds and products from different regions. These fairs represent events in which the agricultural diversity is evaluated at the regional level, monitor the varieties that are lost, exchange culinary knowledge, etc.

Almost 50 tons of goods are traded once a week in the *chalayplasa* (Martì, 2005) or "barter market" in the central area of the Lares Valley, ten times the volume of food distributed by the National Food Assistance Program (Pimbert, 2009). It is an ancient strategy of bartering between people from different ecological areas of the valley to get food and where everyone can participate by exchanging any type of crop. Women play a leading role where the principles of reciprocity and solidarity guide the economic exchange to guarantee the supply of food and seeds (Figure 4).

These family economy systems demonstrate the elasticity of collective solutions to individual livelihood problems, generate ecological and political solutions starting from everyday life. However, despite the evident success of exchanges, this type of economic system has not received any kind of attention from government institutions, interpreted as an archaic form of survival. Conversely, the state has increased social aid programs in this area.

The women of the Potato Park have formed the Sipaswarmi Committee and the Qachun Waqachi Association, they are groups of women who are involved in the identification,

Figure 4. Freeze-drying potatoes for long-term preservation (photo by Lianet Camara).

selection and collection of numerous medicinal, officinal and aromatic plants for the production of herbal teas, creams, ointments, soaps. These same groups manage the handicraft of the Park, the work of the women includes the process of collecting plants, mosses, mushrooms useful for the natural dyeing of the wool, the use of the loom for weaving belts, blankets, capes and other objects for the sale to tourists who visit the Park. The experience of women in weaving has meant that other communities are organized in a similar way.

Another component of economic income is derived from community or ecological tourism, many families have set up a kind of huts and accommodation for tourists and visitors. This form of tourism promotes the tourist's involvement with indigenous and rural communities by carrying out various activities: interacting and working with the

inhabitants of the area, observing their habits and customs, buying handicrafts and souvenirs.

These experiences do not add new tasks to women, rather they complement their daily work. Women are responsible for the processes that contribute to the family economy, they try to increase productive returns and income from trade. Thus a new market culture emerges, they exercise direct control over income because women tend to reinvest their income in the well-being of the family. The above examples explicitly reveal the vision of sustainability and autonomy in the respect and protection of cultures and traditions.

Many innovations respond to technical training campaigns run by external organizations, which rural women capitalize on trying to improve the quality and quantity of their products. Under suitable conditions, according to the market demand, the sale offers them the possibility of improving their income and living conditions. Also for this reason, ANPE Peru has carried out numerous actions to entrust women with the role of guardians of nature and a healthy diet. ANPE Peru works to empower rural women through leadership workshops, production improvement and exchanges of experiences on agroecological production.

5. CONCLUSIONS

Based on the experiences of the Andean rural communities presented in this article, it can be inferred that many of the traditional practices and knowledge are at risk of loss and impoverishment, this is reflected in the decline of natural and cultural diversity, with heavy effects in the economic, social and cultural systems.

Massive exodus from the countryside to the cities, ineffective state support from institutions, linguistic and belief vulnerability are aspects that put the complex cultural baggage of rural communities at risk.

While recognizing the dimension of the problems, the weight of economic powers and national and supranational policies is enormous potential in the hands of people, especially women, linked not only to their work but also to the strength of social activism. and collective organization.

To counter these critical issues, the Andean communities and in many cases groups of organized women try to find solutions capable of giving effective answers to these problems. Knowledge about plant diversity for different purposes: both food, medicinal and pharmaceutical; the power to negotiate in micro-marketing and to barter products on a small scale are in the hands of women, they are the ones who keep most of the knowledge and traditions related to the supply of food and their conservation.

The decrease in plant varieties is intertwined in a perverse way with the spontaneous or forced abandonment of local agricultural techniques, where products suitable for their socio-cultural roots are grown and consumed. This trend indirectly determines an impoverishment of food diversity, with an important impact on human health.

The Andean region, the cradle of biodiversity and home to numerous indigenous communities, aims to regulate the genetic resources regime in the context of regional agreements. The issue of the right to food is also inevitably intertwined with that of food diversity and consequently with the need to conserve environmental biodiversity and agrobiodiversity,

In recent decades, a regulatory evolution has emerged aimed at enhancing the principles related to the protection of nature, introducing provisions to safeguard biodiversity, sustainable development, the protection of indigenous communities and their traditional knowledge related to agriculture.

In this perspective, the guarantee of the economic rights inherent in the production and marketing of food becomes recessive with respect to the enhancement of the (collective) rights of indigenous communities and the protection of local agricultural knowledge.

The challenge would be to consolidate what has been advanced in the legislative field, to develop initiatives aimed at achieving complementary objectives. Without ignoring the importance of trade links with the world, the goal of food security and sovereignty will largely depend on the degree of autonomy that the state assumes in the design and implementation of public policies that privilege the right to a adequate nutrition, above any commercial or economic consideration.

From all these experiences, rural families in the study areas could enjoy sufficient physical and economic access to nutritious foods according to their needs and preferences. However, due to a number of political, economic, social and cultural factors, food is not safe and sufficient for the entire population. Public aid to agriculture and the most vulnerable population must not disappear but must be oriented in support of sustainable agricultural models, socially and economically more equitable.

In this sense, traditional knowledge, local practices together with technical skills and organizational resources would be able to express the cultural identity of local women populations and offer a valid demonstration of our need to reconnect with nature and re-establish a relationship of fair coexistence between us.

Endnotes

1 The geographer Javier Pulgar Vidal formulated the thesis of the eight natural regions in 1941, this approach is based on the existence of ecological floor or layers functional to the climate, relief, landscape, flora and fauna.
2 For further information on the historical and ethnographic aspects of vertical control of Andean production, see Murra (1975), Mayer (1994), Golte (2001).
3 Verticality in the Andes is understood as the very steep environmental gradient where different climatic zones are compressed into a single valley extending for several hundred meters of altitude.
4 Raised fields are cultivation platforms raised above ground with channels for water flow around them.
5 The Hacienda took on the meaning of property/real estate capital and what weighs on it, namely the land and the workforce.
6 "The land for those who work it" was the motor of the Agrarian Reform. This implied the dream of giving property to each peasant family a cultivation area for their livelihood and production for the national market. Matos Mar, Mejia (1980).
7 The *friaje* of recent winters is a phenomenon of anomalous and intense cold experienced. Temperatures sometimes drop as low as -35°C with serious consequences for people suffering from hypothermia, bronchitis and pneumonia, and for animals that perish due to the extreme conditions.
8 Statements by Demetrio Túpac Yupanqui, director of the Yachay Wasi School. Diary El Comercio, February 23, 2019.
9 In 1997 the ANDES Association with six communities of Pisaq area established the Potato Park as a Community Conserve Area (CCA). The management of the Park is in the hands of four communities: Amaru, Paru Paru, Pampa Llacta and Chawaytire, the communities of Cuyo Grande and Saccaca abandoned the project after some years.
10 The potato was domesticated and cultivated on the plateau of Titicaca Lake around 8,000 years BC. (Reader, 2009) and during centuries of experimentation, farmers have reproduced and selected varieties suitable for each of the multiple ecological niches of the Andes.
11 This value refers to 2014, this value could be different based on increases or disappearances of the varieties during the harvest phases.
12 The distinction in this region between cultivated and wild potatoes is rather vague instead there is a constant gene flow between the two groups.
13 This wisdom is expressed in the concept of "three and five" and in "four plus two". Apparently the criteria-numbers would be decided by the variety and type traditional crops into each community and according to the agroecological area, so in the Jalca area (area between 3500 and 4000 meters above sea level), the numbers dominate to classify the potato, while in the Quechua area dominate for corn (Tapia and De La Torre, 1997).
14 The low level of use of quality seeds highlights a weak link between the farmer and the market. Small-scale farmers have limited access to credit to buy seeds from the formal system and little control over the production environment (frost, drought and pests), so heavy investments buying seeds could be risky.
15 Law N° 27262 of 2000 was subsequently amended by Legislative Decree 1080 in 2008. It reports that the activities of obtaining, producing, supplying and using good quality seeds are declared of national interest.
16 The CIP (International Potato Center) is part of the Consultive Group in International Agriculture Research (CGIAR)
17 It is the largest seed warehouse in the world, created to safeguard the biodiversity of species grown for food purposes, to ensure human survival against phenomena such as climate change and natural disasters.
18 29.5% of rural children under five suffer from chronic malnutrition (MCLCP, 2020) and more than a third of the population (39.1%) are at risk of food insecurity vulnerability (EIA).
19 Food security is a multidimensional approach applicable at the individual, family, national and global levels, achieved when all people, at all times, have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and preferences with the goal of leading an active and healthy life (FAO, 1996).
20 La Via Campesina proposes food sovereignty as the right of people, communities and states to define and determine their own food and agricultural system as well as to implement policies to favor their agricultural production both in national and local markets. It guarantees that the rights of access and management of land, territories, water, seeds. Livestock and biodiversity are in the hands of those who produce the food.
21 *Mazamorra* is a typical sweet made from corn or other cereals.
22 The percentage for 2020 reaches -30.4%, a decrease due to the pandemic. www.sunat.com.pe

Bibliography

Alcazar, L.; Espinoza, K. (2014) *Impactos del programa Juntos sobre el empoderamiento de la mujer***.** Avances de Investigación Nº 19. Lima: GRADE.

Camara, L. (2015) *Il recupero del "saper fare" andino per la produzione agricola*". Doctoral thesis. University of Verona.

Eddowes, J. (1992) *La Huaca*. Lima: Editorial Horizonte.

Eguren, F. (2016) *La Seguridad Alimentaria en el Perú. Compendio de artículos publicados 2010-2015.* Lima: La Revista Agraria, Cepes.

FAO (2010) L*os Recursos Fitogenéticos para la Alimentación y la Agricultura en el mundo.* 2º Informe. Lima: INIA, FAO.

Gamboa, D. (1993) S*istemas de producción y multiplicación de semilla de papa bajo una lógica campesina.* Cochabamba: Univesidad Mayor de San Simon.

Golte J. (2001) *Cultura, racionalidad y migración andina.* Lima: IEP. Colección Mínima 46.

INEI (2017) *Perú: Brechas de Género, 2017: Avances hacia la igualdad de mujeres y hombres.* Lima.

INEI (2018) *Censos Nacionales 2017: XII de Población, VII de Vivienda y III de Comunidades Indígenas.* Lima: INEI.

Lapeña, I. (2012) *La nueva legislación de semillas y sus implicancias para laagricultura familiar en el Perú*. Lima: Sociedad Peruana de Derecho Ambiental Nº26.

MCLCP (2020) *Recomendaciones para salvaguardar la seguridad alimentaria y nutricional en la infancia y en poblaciones vulnerables frente al impacto de covid-19.* Reporte Nº 2-2020. Lima: Mesa de Concertación para la lucha contra la pobreza, Sub Grupo de trabajo de Nutrición y Anemia NO.

Martí, S.N. (2005) *La Multidimensionalidad de los sistema locales de alimentación en los Andes: los Chalayplas del Valle de Lares.* Doctoral thesis. Autonomus University of Barcelona.

Matos Mar J.; Mejía J.M. (1980) *La Reforma Agraria en el Perú*. Lima: IEP.

Mayer E. (1994) *Recursos Naturales, Medio Ambiente, Tecnología y Desarrollo, in Perú: El Problema Agrario en Debate*. Lima: SEPIA V.

MEF (2009) *Mapa de Pobreza Provincial y Distrital 2007: El Enfoque de la Pobreza Monetaria*. Lima: BID, INEI, MEF.

Murra J.V. (1975) F*ormaciones Económicas y Políticas del Mundo Andino*. Lima: IEP.

Persic, A.; Martin, G. (2008) *Collegamenti tra diversità biologica e culturale Rapporto del seminario internazionale*. Paris: UNESCO.

Pimbert, M. (2009) *Toward food sovereignty*. Gatekeeper Series Nº 141 London. IIED.

Quijano, A. (1967) *Urbanización y tendencias de cambios en la sociedad rural latinoamericana***.** Serie Documentos Teóricos, Nº 5. Lima: IEP.

Reader, J. (2009) *Potato: A History of the Propitious Esculent*. Yale University Press.

Swiderska, K.; Stenner, T. (2019) *The Maize Park biocultural heritage territory in Lares, Peru: Case study guidance in biocultural heritage territories*. Cusco: INMIP.

Tapia, M.; De La Torre. (1997) *La mujer campesina y las semillas andinas*. Lima: IPGRI, FAO.

Trivelli, C.; Escobal, J.; Revesz, B. (2009) *Desarrollo rural en la sierra: aportes para el debate*. Lima: GRADE, CIES, CIPCA, IEP.

Trivelli, C. (2019) Programas sociales y desarrollo territorial in Fernandez M.I. (ed.) *Perspectivas para el desarrollo rural latinoamericano: un homenaje a Alexander Schejtman*. Buenos Aires: Teseo.

Velásquez, D.; Trillo, C.; Cruz, A.; Bueno, S. (2014) *Intercambio tradicional de semillas de tuberosas nativas andinas y su influencia sobre la diversidad de variedades campesinas en la sierra central del Perú (Huánuco)*. Zonas Áridas Nº 15. pp. 110–127.

Zimmerer, K. (1996) *Changing fortunes: Biodiversity and peasant livelihood in the Peruvian Andes*. Berkeley: University of California Press.

Article

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She is interested in the island cultural landscapes, especially in Macaronesia, to understand their problems and to understand how to offer a panorama of reflection on how to design in territories with specific singularities.

Marks on the land by the "little hands": A testimony of life

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ABSTRACT

Since the early settlement of Madeira Archipelago women have always played an important role in the history of family agriculture. In addition to their household tasks, they had to collaborate with the work on the fields among other farming activities. However, when it comes to agriculture, the perception of working the lands is mainly associated as an exclusive men's task perhaps due to connotations of the hard work carried out on the steep mountain slopes of Madeira Island in a real *battleground for the human being against the hostile forces of Nature* (Natividade, 1953). This article aims to homage the Madeiran female farmers and pay tribute to their contribution on the Madeira Island's rural landscape anthropogenic shaping process.

KEYWORDS

"poio", agriculture, women, Madeira island

1. INTRODUCTION

Agriculture is inextricably linked to human survival. To produce food, human being has had to explore the territory to create colonization strategies so to inhabit it and benefit from its lands. This was a difficult process on the Madeira Island, carried out in an almost inhospitable territory, due to its forbiddingly orography. Notwithstanding all the geographical obstacles, the people from Madeira have managed to inhabit the territory in an extraordinary manner, transforming the rural landscape into something epic and functional in terms of agriculture. To that end, it was necessary to set up soil by building *"poios"*[1] and to bring water through the construction of *levadas*[2]. From that moment onwards, people on the island began to intelligently obtain the sustenance from the fields, becoming an economic reference on the Atlantic routes, through the cultivation of wheat, sugarcane and wine[3].

It is in this *sui generis* territory where the "**Marks on the Land by the Little Hands**" article unfolds. However, when considering the arduous construction of the island's cultural landscape, the female labour contribution on the fields is omitted and underestimated. Whether in existing literature, illustrations, or photographs, it is difficult to find a clear depiction of the true role of women in agriculture. The conveyed image is connoted by the differentiation of genders, that is, the woman is responsible for the domestic tasks (being the housewife, laundress, sewer and embroiderer) and the man is responsible for cultivating the land and undertaking the more physically demanding jobs. However, there's a distortion of reality, because in an island with an extreme orography such as Madeira Island's, there are women who worked hard in the *"poio"*, where the strength of the manual labour does not distinguish man and woman. The author João França's description of agriculture on the Island shows this to be true: *men and women went in a line of ants down a steep path, in curves and zigzags. Each one carried what they could: hoes, sickles, saws and axes, clothing, and pots. The field was way up high. Once they have arrived, already familiar with the agrarian land affairs, they looked around, discouraged by the steepness of that scrubby strip (...) defying the law of gravity* (França, 1972, p. 110).

The research methodology on this subject comes from the oral testimony of a 91 years old woman, Ms. Eulália Gonçalves, from Campanário parish located in Ribeira Brava Municipality who, since an early age, was "obliged" to work on the fields with her father and two brothers to contribute to the household subsistence (parents, four sisters and two brothers). Among her female siblings she was the less talented in the typical Madeira Embroidery[4], wherefore life on the *"poios"* (terraces) became her destiny[5]. On the other hand, the existing bibliography and photographs were used to support the testimony. The content presentation will be preceded by a brief characterization of the Madeira Archipelago and its parish of Campanário so that the reader can understand the interviewee's discourse.

2. CHARACTERIZATION AND GEOGRAPHIC SETTING OF THE ISLAND OF MADEIRA

The Archipelago of Madeira is located in the Atlantic Ocean, southwest of the Iberian Peninsula, between 30º and 33º latitude North. The main island of Madeira, the name of which derives from the *many, thick and large trees with which it was covered and all with an infinity of wood* (Frutuoso, 1998, p. 40), is a large "natural rock" consisting of 741 km2 of volcanic origin that rises monumentally above the Atlantic Ocean, to reach an altitude of 1,862 m at Pico Ruivo (Figure 1). It is an island characterized by a very abrupt relief, creating a landscape of mountains and cliffs cut by deep valleys and, according to Gaspar Frutuoso, *since it is very fragile, it is said that its proper name was, or should* be, the **Island of Stones** (Frutuoso, 1998, p. 40).

[...] so many woods and rocks, so many hills and glens, that everyone says that, of the ten parts of the island, they don't make the most of two, because most of it consists of mountain ranges, hanging land, rocks and glens and slopes, and there is no flat land, except in small parts, but these are such that they are worth more than any other size in gold; and, in general, the substance that has all the things that this island itself produces, either by nature or through art, is priceless (Frutuoso, 1998, p. 55).

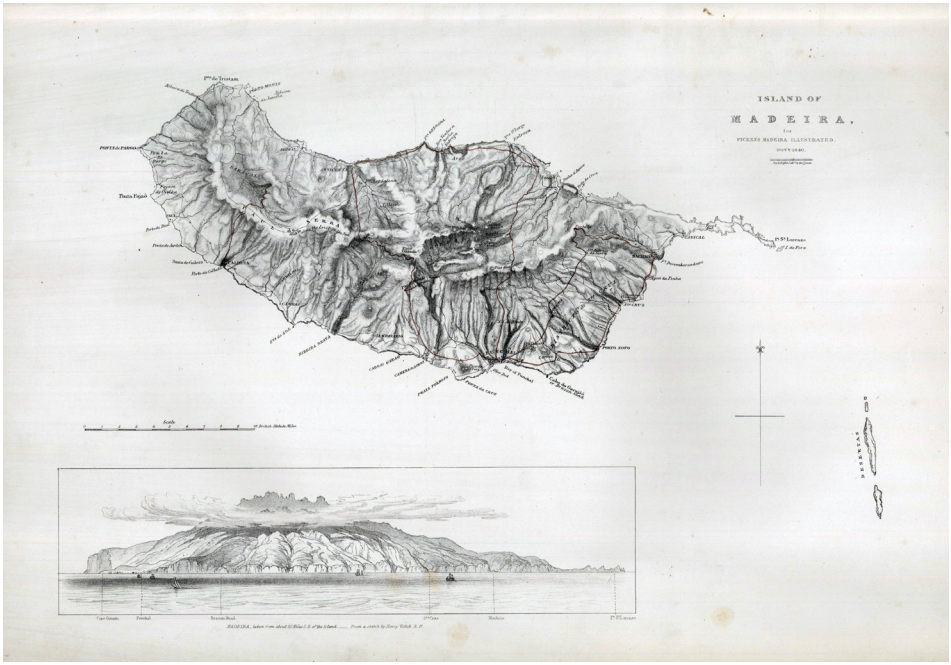


Figure 1. Map of Madeira ilustrated by Andrew Picken and sketch by Henry Veitch R.N (Picken, 1840).

3. UNDERSTANDING THE CULTURAL LANDSCAPE OF THE ISLAND

Agricultural activity has been the main way in which the landscape of Madeira has been humanized. Given an island made of "rock", it is necessary to "sculpt" the land, create soil on its surfaces and channel watercourses in order to inhabit it. This is how the *socalco* (terracing), better known as *"poio"* on the island, has emerged. Vieira (2017, p. 2) states that *what we usually define as humanization is nothing more than a process of territorialization, which has marked the appropriation of the island.* This territorialization process is undoubtedly made possible through the *"poio"*, which provides the matrix for the organization of the space and the mark of identity of the Madeiran landscape (Figure 2).

Figure 2. Socalcos (Terraces) - Eira do Mourão, Ribeira Brava 1940 (photo by Perestrellos) (Museu de Fotografia da Madeira – Atelier Vicente's, 2021).

Madeira is better than all this: it is epic work, the glorification of human effort. So present is the influence of humanity everywhere, the magnificent fruit of such heroic toil, the rough stroking of calloused and rough hands, that the landscape, so to speak, has become soaked in this presence and become humanized (Natividade, 1953, p. 28).

There is no corner of the island of Madeira where we do not perceive the humanization of the landscape, especially through its walls, which are sometimes too high to allow the use of soil (Caldeira, 2021, p. 33). The terracing is, in this context, an architectural element of earth containment, an ancestral construction made with dry stone walls[6], with the aim of creating areas with soil favourable for cultivation and avoiding landslides generated by the considerable instability of the soils, a characteristic of mountain landscapes. Ribeiro (1985, p. 60) explains that building and repairing the walls on the island of Madeira is very hard work, as it is necessary to carry the stones on one's shoulders or head and work

hanging over the abysses supported by ropes and pulleys. The author also mentions that the stone walls that support the soils are bigger or smaller depending on the slope and, as if this were not enough, after building the walls it is necessary to form the soil, that is, carry the earth from other places on one's back in baskets, where it is of better quality and to fill the platforms.

The "poio" is the expression of Humanity's wisdom over Nature, responsible for the humanization of the cultural landscape of the island, in a challenging process of territorialization that led the Madeiran "peasant" to construct, just using these poor materials, one of the most extraordinary agricultural constructions in the world and thereby write this great Epic with their blood, sweat and tears. They attacked the rock to obtain the earth, then carried it on their backs over improbable paths; they lovingly polished the mountain, the ridge, the steep slopes, the cliffs, as if they were working on tiny diamonds, often leaning over abysses and permanently risking their own life; they built poios upon poios to hold these handfuls of earth, and finally fertilized it, conquering and dominating the thread of water mysteriously born on high and which, transformed into a levada, they channelled with infinite labour along capricious and extremely rugged paths (Natividade, 1947, p. 15).

4. CAMPANÁRIO

Campanário is a parish in the municipality of Ribeira Brava, located on the south coast of Madeira Island, with an area of 11.80 km2. It is a high land, a huge promontory that rises at an average altitude of 200m above sea level, where currently 4,582 inhabitants reside[7]. According to the Elucidário Madeirense, *when the discoverers arrived in Madeira, and while exploring the island, they came across a small islet near the coast, which from a distance 'seemed to have the shape of a bell tower the name they gave to that passage and which later spread to the surrounding land* Da Silva, De Meneses, 1921.

Water is Madeira's greatest asset, enabling irrigated crops to be grown almost all over the

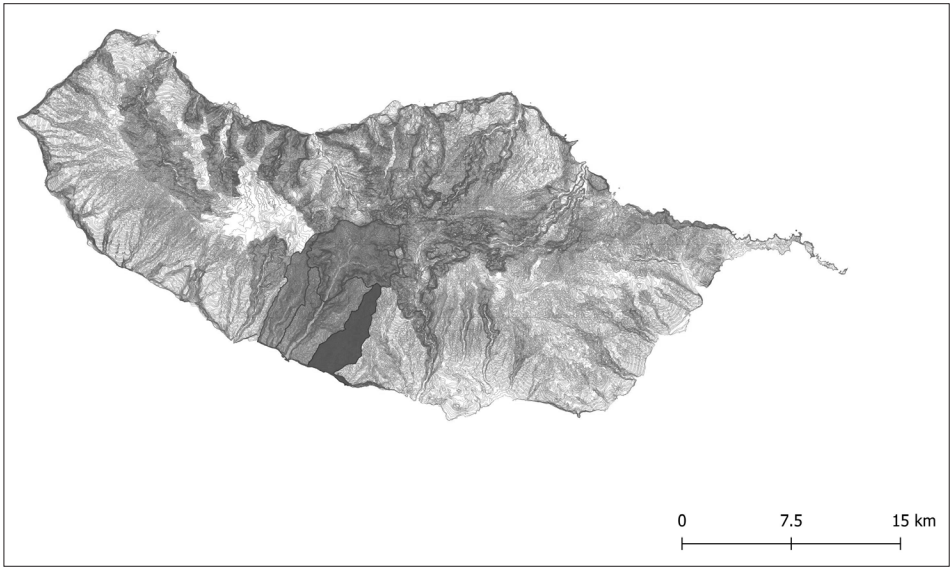


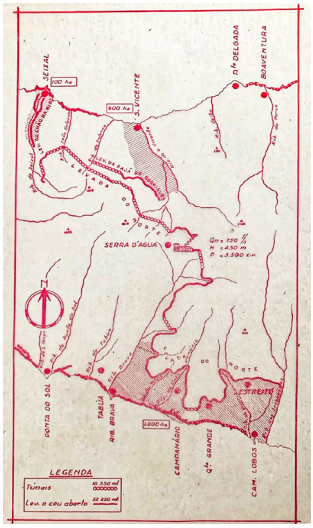
Figure 3. Map of Campanário localization (map by Liliana Ferreira).

island by means of the levadas. Curiously, our testimony takes place in one of the parishes most mentioned in the literature in relation to the lack of water and the radical change of the landscape before and after the existence of the Levada do Norte[8] (Figure 3, 4, 5 and 6) built in 1940 by the Administrative Committee for Hydraulic Water Use on Madeira.

Gaspar Frutuoso describes the agricultural landscape of Campanário as the *land for raising and farming wheat and rye, because they were mountain people, given more to raising cattle than to cultivating vines* (Frutuoso, 1998, p. 49). On this subject, Lieutenant-Colonel Sarmento (1953) points out that in Campanário the *cereal was so plentiful that the population had plenty of it such that ships would call and obtain even more for consumption in the African markets, which is why Campanário was in the early days called "the Conquered Barn"* (Sarmento, 1953, p. 41). Furthermore, Orlando Ribeiro, in his exploration of the island of Madeira, found that irrigation covered almost the entire agricultural surface of the island and non-irrigated, rainfed crops **are an exception, particularly in the parish of Campanário** and on the eastern slope of the Machico valley. According to the author,

during the summer, these regions look desolate: clumps of Andropogon hirtus and cereal stubble thinly cover the desiccated soil — pale yellow stains on a brick-red background. In the Machico valley the contrast is vivid (Figure 7 and 8) between the land "below the levada", covered with green crops and the land "above the levada", abandoned from the harvest until the autumn rains (Ribeiro, 1985, p. 63). However, to irrigate the land at Campanário, it was necessary to fetch water from *levadas* and springs located in places with difficult accesses, far away, and dryland farming was the only means of subsistence.

Regarding rainfed cultivation, Alberto Vieira (2015, p. 5) alludes to Fernand BRAUDEL when comparing rainfed crops with freedom and irrigated crops with slavery, pointing out that there is clearly a human dependence on this condition determined by the climate, so there was the need to create irrigated areas in Madeira through the construction of *levadas*. Undoubtedly, the Campanário crops were for centuries "free", but with the appearance of the Levada do Norte, people's lives came to depend on water and rural life revolved around it.



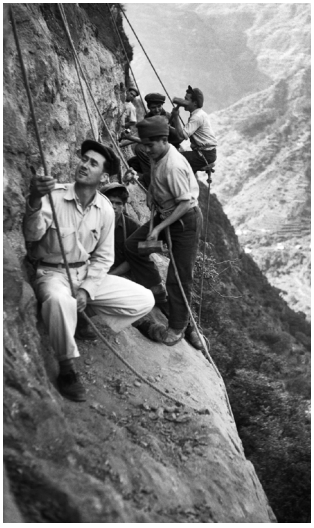


Figure 4. Map of the Levada do Norte. Campanáro irrigated area (M. d. O. P. -. C. A. o. A. H. d., 1969).
Figure 5. Construction of the Levada do Norte (photo by Museu de Fotografia da Madeira – Atelier Vicente's, 2021).
Figure 6. New levadas – Madeira Hydraulic Development (C. A. d.A. H. d., 1952).

Figure 7. Campanário, "Dry" Landscape before Levada do Norte, 1905 (photo by Joaquim Augusto de Sousa) (Museu de Fotografia da Madeira – Atelier Vicente's, 2021).

Figure 8. Campanário, "Green" Landscape after Levada do Norte. 1950 (photo ceded by "Casa da Madeira Azores").

Levadas are water channel paths, but also access paths to agricultural areas and habitation and, consequently, special circulation paths for the products of the land. Water, in turn, is not only intended for irrigation, since it also has various uses of a domestic nature. Water for domestic use, cooking and cleaning purposes was available in the levada. The levada also supplied the public washhouses as well as water for cleaning public roads (Vieira, 2015).

5. THE TESTIMONY

Name: Eulalia Ferreira Gonçalves (Figure 9) | Date of Birth: 1930 | Resident at: Campanário – Ribeira Brava

How was your agricultural life?

What appeared to be an interview turned into a monologue following a simple question. After a brief pause, looking deeply and reflectively at a past that is still present, Ms. Eulália, 91 years old, began by recounting her life in the countryside.

Senhora Eulalia: My life in agriculture begins at a very young age. I've always been a "farmer" since I was a child, probably around 10 or 12 years old. In fact, I didn't really know how to do the Madeira Embroidery[9] (Figure 11), unlike my older sister who at just 5 years old, was already making perfect *"garanitos"*[10] for the embroidery house. My mother told my father to take me with him and my other two brothers to help with the work on the fields. To be honest, I wanted my sister to go with us, but because of her talent for embroidery she had to stay at home to help with the expenses. It is interesting, but even today, at the age of 92, she still receives embroidery to work (Figure 10). I don't know if it is important to say this, but I didn't know how to embroider, I wasn't any good at it! I had small hands that were only good for farming.

At that time, we worked on the fields to have food to support the family. My family was like Abraham's[11], as big as the world, like the stars of the sky and the sands of the sea...

Figure 9. Eulália. 91 years of coordinating the work within the "poio" (photo by Liliana Ferreira).
Figure 10. Maria Serafina, Eulália's older sister, embroidering at the age of 92 (photo by Liliana Ferreira).

I always worked on the land and did what my father taught me: planting the *rama*[12], hoeing the soil, putting down the moss, set the cow dung while my father worked out the *regos*[13]. It was him who worked these ditches and made the strips of land because on sloping land like ours, the work has to be done well to avoid landslides and to provide good irrigation through watering. Only later did I start to do the ditches on my own. It was hard work. We carried the potatoes, the pears and the cabbages on our backs, making as many trips as was necessary (Figure 12 and 13). Father did not want us to carry too much, but thank God I always had the strength to carry what was necessary. I brought what I could, but my brothers carried the heaviest loads.

At that time, we planted on dryland and there was no *Levada do Norte* Before the opening of the *Levada do Norte*, we used to fetch water from a pit in Cova da Velha called the *Poço Grande* to water our farm and to our household needs (Figure 14). As water was scarce

Figure 11. Campanario embroiderers working on Madeira embroidery for the Colombian Head of State (Pereira, 1940).

in Campanário, we tried to take advantage of springs or streams, that's why our ancestors built wells with mud and rock (tanks) or reservoirs called *furnas* placed inside the rock[14].

In the past, Campanário was only irrigated with rainwater, however at that time the weather was more stable. We grew potatoes and sweet potatoes which, despite being irrigated with rainwater, were tiny and tasted delicious. I don't know why, but those drylands produced good potatoes! With the irrigation coming from the *Levada do Norte* production doubled and so did the size of the potatoes. We always produced vines on trellises and under the vines we planted food according to the season. We produced so many grapes that we sold the surplus and best quality grapes to Madeira Wine[15].

With the appearance of the *Levada do Norte* people had to build tanks and channel the water through constructing small levadas that vertically crossed the land and in turn branched off, linking up with neighbouring *levadas* (Figure 15). However, we had to deal with the rotating water *(água de giro)* [16] during the night, because in those days the

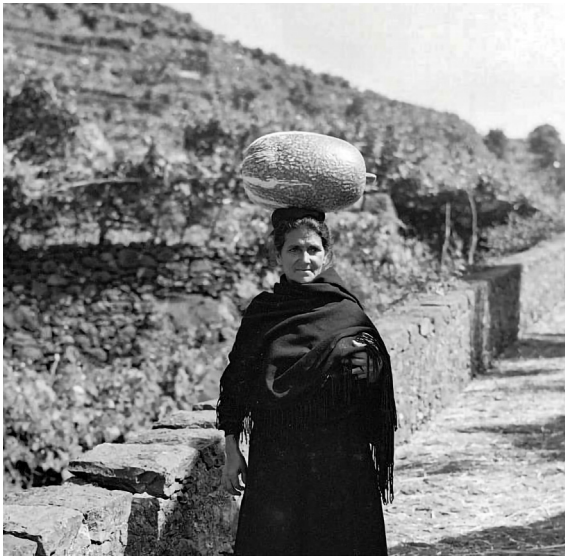
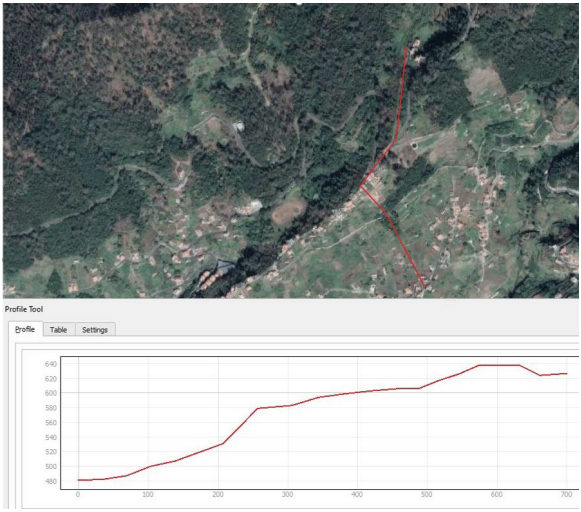


Figure 12. Children Transportation of "cattle feed" (photo by David Fairchild) (Madeira Quase Esquecida, a, 2021).

Figure 13. Beauty has no age! (photo by Willem van de Poll, 1934) (Madeira Quase Esquecida, b, 2021).

rotations were made mostly at night. I always controlled the water and went with my brother-in-law to water the land. It was only later that the rotations took place during the day. The rotations were in order, on average 44 minutes for each neighbour, depending on the size of the building, and we organized the time with them and with the *Levadeiro* [17]. At that time there wasn't an inch of the farm left untitled, with all the *poios* from the sea to the mountains, and do you know why? Because during Salazar's time[18] we had nothing! We did not have olive oil, cooking oil, flour, sugar or soap. It was only after the revolution of the 25 April[19] that products began to appear. I thank Américo Tomás, António Espínola and João Galvão, who carried out the coup d'état and changed our lives.

Ah! the old days...nowadays it's wonderful, while in the old days there were no cars to transport everything. Today people prefer other types of work, because agriculture does not provide enough. It is not valued and in Madeira you have to have the strength to climb up and down the *poios* to bring the products to the nearest path. If young people could



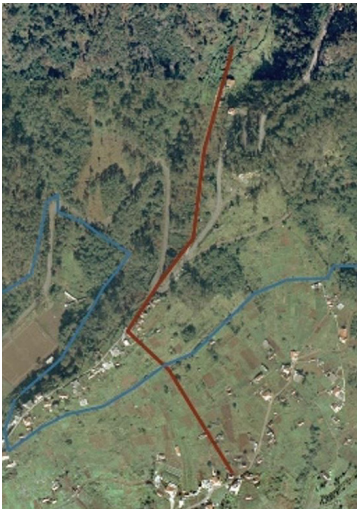


Figure 14. Calculation of Eulália's route to fetch water from Cova da velha: an average climb of 300 m over a distance of 700 m (map by Liliana Ferreira).

Figure 15. The Levada do Norte in blue. Thanks to gravity, the water is distributed over all the land (map by Liliana Ferreira).

earn a good living, perhaps agriculture and the landscape would return to what it was, but for wages that corresponded to the sacrifice entailed by the work. Young people only want to be in school and do not care about agriculture!

I am 91 years old, and I still plant some potatoes, tie the vines, remove the leaves from the vines, and collect grass. Now at my age I only do the land around my house. What I can do I do; what I cannot do I don't do. Agriculture has always been my job, but while Madeira embroidery was recognized for retirement, I had to work in both, because they never gave me a pension from agriculture, but from embroidery they did.

A land with immense stairways that seem to lead up to heaven; not leaving an inch of land untouched (...) human beings dig, dig, flatten and till, to open up to agriculture an endless series of steps, the poios, which provided wine and a vegetable garden which grew everywhere (...) (Castro, 1989).

6. CONCLUSION

Despite the island's mountainous characteristic that forced the use of land in poios (terraces), Madeiran women left a clear and evident "mark on the land". The rural environment still preserves its traditions and women play an important role in the family farming and not just that.

In a territory where technology is still unable to overcome the constraints caused by the Island's orography, agriculture depends and will continue to depend on the human effort. In this regard, it is necessary to recognise that women are playing an increasingly important role in agriculture. This article is an appeal to the need to raise awareness about real human effort and women's participation in this process, whether in transforming the forest, the hillsides into cultivated "poios" and in subsistence food production.

The physical conditions of the island, and these manifestations, present since the 15th century and caused by its orography, evoke this intimacy, this family spirit, which is shown in the interaction of all within the spatial nucleus that makes up the family or the community. Here, there is the idea of the "poio" as an expression of that unity, which is then transposed to the mind of the islander and is affirmed as a genuine expression of Madeira's agriculture and rural life (Alberto Vieira).
note: the text was provided by the author as part of the project he was developing about Agriculture in Madeira Island at the Center for Atlantic History Studies (CEHA).

Endnotes

1 **"***Poio***"** is the local name for Terraced Landscape: Arrangement of land in small terraces on sloping land.
2 "*Levadas*" are channels for transporting water flanked by a footpath. The first levadas on the island date back to the 16th century, and the more recent ones were built by the Administrative Committee for Hydraulic Water Use on Madeira, and date back to the 1940s. They are world-renowned for their tourist routes that show the island's cultural landscape.
3 On this topic see Vieira, A., 2014.
4 Madeira Embroidery is a typical embroidery of the Archipelago of Madeira (Madeira and Porto Santo islands).
5 "***Poio***" is the local name of a small terrace for agricultural purposes, a leveled surface built in the sloped territory.
6 "Art of dry-stone walling, knowledge and techniques" is considered as intangible cultural heritage of humanity by UNESCO: "The art of dry-stone walling concerns the knowhow related to making stone constructions by stacking stones upon each other, without using any other materials except sometimes dry soil. Dry stone structures are spread across most rural areas – mainly in steep terrains – both inside and outside inhabited spaces, though they are not unknown in urban areas. The stability of the structures is ensured through the careful selection and placement of the stones, and dry-stone structures have shaped numerous, diverse landscapes, forming various modes of dwelling, farming and husbandry. Such structures testify to the methods and practices used by people from prehistory to today to organize their living and working space by optimizing local natural and human resources. […]" (UNESCO, 2021).
7 According to the 2011 census.
8 The *Levada do Norte* is a section of the *Ribeira Brava Levada* - Campanário, Quinta Grande and Câmara de Lobos built in 1940 – *which represented (as it still does), the largest work carried out on this island to date. If we emphasize that around 40,000 farmers benefit directly from it and, indirectly, the population of Funchal and other surrounding areas, the people's contentment and their spontaneous enthusiasm on the inauguration day* (…) is not surprising (Nunes, 1952, p. 37).
9 Madeira Embroidery was one of the most important economic activities on the island along with wine and sugar. According to Pereira (1940) for the majority of Madeirans embroidery, emerged as a literally life-saving board when faced with the difficult situation agriculture on the island passed through during the 19th century. The economic crisis, caused by the situation in the vineyards, led to new alternative forms of survival, with embroidery being one of these. Daily life on the island was transformed leading to women becoming increasingly attached to the home while gaining in their social importance. Household chores became companions to the art of embroidery. This became another focus of attention for the countless visitors as they became aware of this reality when travelling around the island.
10 This is a stitch characteristic of Madeiran Embroidery.
11 Biblical figure linked to the origin of various peoples.
12 To plant the sprouted sweet potato.
13 This is a ditch traced by a hoe in the soil to plant crops.
14 Structures dug out of the rock that became known as "*furnas*" and which served various purposes.
15 The Madeira Wine Company, S.A. was originally an association of a number of Madeira wine producing companies, who decided to join forces in order to strengthen their purchasing and wine making abilities. This Association was founded in 1913. During the inter-war years, the old family firms of Blandy's and Leacock joined, followed immediately post war by Miles and Cossart Gordon, thereby creating the largest producer and exporter of Madeira wine (Madeira Wine Company, 2021).
16 Irrigation water that one is entitled to, periodically every 8 days or so, against payment of rent.
17 The person who controls and distributes the water from the *levadas*.
18 António de Oliveira Salazar was head of the Council of Ministers of the dictatorial Estado Novo government in Portugal.
19 A political and social movement which on 25 April 1974 overthrew the dictatorial regime of the Estado Novo and started a process that would end with the establishment of a democratic regime.

Bibliography

Caldeira, D. (2021) *A agricultura Madeirense e Eu.* Funchal: ARTELEIA, produção de conteúdos literários.

C. A. d.A. H. d. (1952) *Levada do Norte (Ribeira Brava - Câmara de Lobos)*. Funchal: n.n.

França, J. (1972) *A ilha e ó tempo: romance.* Funchal: Editorial o Século

Frutuoso, G. (1998) *Saudades de terra* - Livro II. Ponta Delgada: Instituto Cultural de Ponta Delgada.

Da Silva, F.A.; De Meneses, C.A. (1921) *Elucidário madeirense*. 1a edição. Funchal.

Madeira Quase Esquecida, a (2021) Available at: https://www.facebook.com/MadeiraQuaseEsquecida/photos/a.701949559841419/483756678327376/ (Accessed: 18 October 2021).

Madeira Quase Esquecida, b (2021) Available at: https://www.facebook.com/MadeiraQuaseEsquecida/photos/a.226268560742857/778611218841919/ (Accessed: 18 October 2021).

Madeira Wine Company (2021) Our history. Available at: https://madeirawinecompany.com/en/about-us/our-history.html (Accessed: 18 October 2021).

M. d. O. P. -. C. A. o. A. H. d. (1969) O Aproveitamento da Água na Ilha da Madeira, 1944 – 1969. Lisboa: Comissão Administrativa o Aproveitamentos Hidráulicos da Madeira.

Museu de Fotografia da Madeira – Atelier Vicente's. (2021) Available at: https:/www.facebook.com/mfmvicentes (Accessed: 18 October 2021).

Natividade, J.V. (1947) *Fomento da fruticultura na Madeira.* Funchal, Madeira, Portugal: Serviço de Publicações da Direção Regional da Cultura da Madeira

Natividade, J.V. (1953) *Madeira: a epopeia rural.* Funchal, Madeira, Portugal: Junta Geral do Distrito do Funchal.

Nunes, E. (1952) *Levada do Norte* (Ribeira Brava - Câmara de Lobos). Funchal: Comissão Administrativa dos Aproveitamentos Hidráulicos da Madeira.

Pereira, E. C. (1940) *Ilhas de Zargo.* Funchal: Companhia Portuguesa Editora, Ldt.

Picken, A. (1840) Madeira Illustrated. London: Day & Hagues and Hodgson & Graves.

Ribeiro, O. (1985) *A ilha da Madeira até meados do século XX: estudo geográfico.* Lisboa: Instituto de Cultura e Língua Portuguesa.

Sarmento, A.A. (1953) *Freguesias da Madeira.* Funchal: Edição da Junta do Distrito Autónomo do Funchal.

Vieira, A. (2014) *Nova História Económica da Madeira.* Funchal: Esfera do Caos editores e APCA - Agência de promoção da Cultura Atlântica.

Vieira, A. (2015) As Levadas. Os Caminhos de Água na Madeira. *Cadernos de divulgação do CEHA 9,* pp. 5.

Vieira, A. (2017) O Poio na Humanização do Território e na Construção da Agricultura Madeirense. *Cadernos de divulgação do CEHA 3*, pp. 1–43.

UNESCO (2021) Art of dry stone walling, knowledge and techniques. Available at: https://ich.unesco.org/en/RL/art-of-dry-stone-walling-knowledge-and-techniques-01393 (Accessed: 18 October 2021).

Article

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Women's voices from La Gomera: Multiactivity and self-recognition on a terraced island

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ABSTRACT

This work aims to contribute to the knowledge of the way of life of the inhabitants of terraced agricultural landscapes, with special attention to the work carried out by women and to the self-recognition of the value of their work. For this, it is necessary to listen to the female voices that have been made invisible and undervalued by a patriarchal society and by a historiography practiced by men. Through interviews with women over 70 years of age, from different locations with terraces on the island of La Gomera, the aim is to incorporate the female experience into individual and intra-history. of these cultural agro-landscapes during the last stage of the Franco regime. This work is based on the concept of cultural landscape. Terraced landscapes are landscapes built, cultivated, inhabited and perceived by its inhabitants, an expression of the deep knowledge of the environment by its inhabitants. For this reason, the interviews have tried to address all these aspects. The results show that women from La Gomera has also formed an active part in the structure of economic, social and domestic life in these cultural landscapes. They have been the custodians of the rich and diverse intangible heritage since time immemorial, although agricultural abandonment is endangering the survival of that legacy. The women interviewed recognize the important work carried out by them, individually and collectively in the survival of these landscapes in a hard period in the history of La Gomera.

KEYWORDS

women, terraced agricultural landscapes, knowledge, trades, self-recognition, La Gomera

1. INTRODUCTION

Since its very conception, rural women have been a driving force behind agricultural production. According to the Food and Agriculture Organization of the United Nations, they are responsible for 60-80% of food production in developing countries and 50% worldwide (FAO, 2000).

In recent decades, factors that include male emigration, the globalization of agri-food systems, conflicts and, more recently, global pandemics, have seen a rise in the 'feminization of agriculture' (Lahoz, 2006; Slavchevska et al, 2016). Although this is a modern-day global process, it should be highlighted how, on La Gomera (Canary Islands, Spain) there are several episodes of feminization associated with the wars (independence of the American colonies, world and Spanish civil wars) and migratory processes (Cuba and Venezuela) and, in a more recent stage, with the long working hours of the men who worked in construction of dams and roads on the island.

Nonetheless, the greater presence of women in agricultural activities has not necessarily been accompanied by their empowerment (Lastarria, 2006), understood as the set of processes that bring about the development of self-confidence, self-esteem and the capacity to undertake meaningful actions that promote change and enhance personal dignity at a personal, collective and close-relationship level (Rowlands, 1997).

The invisibility of the rural woman, defined as a social and hence systematic construct, unseen and unheard in numerous areas of the political, social, economic, and cultural reality, has been a constant throughout history (Ascanio, 1998 and 2000) and historiography (Rey Castelao, 2014). Indeed, many authors have spoken of the triple invisibility of rural women; for their status as female, rural and worker (Camarero et al, 2006).

In Spain, it has been shown "that official data underestimate the activities of rural women by some 85%" (Camarero et al, 2006, p.139). Therefore, the use of interview-sourced information and data collection methods has been recommended to explore the reality

of their work without prior assumptions of its importance or social utility (Camarero et al, 2006, p. 144).

On the Canary Islands, some island-based associations for the promotion of rural development have carried out works aimed at recording and saving the know-how of rural women. These include the Saberes Project ('saberes' meaning 'wisdom' in Spanish) in Gran Canaria which is involved in the preservation of rural women's custodianship of seeds, tastes and sounds (AIDER GC, 2018). Other relevant initiatives include attempts to preserve the knowledge held by craftswomen of La Gomera specialising in clay pottery and the palm tree, and in agricultural work (stone wall building, grapevine cultivation, export crops, etc.) although in the latter case there is less specific emphasis on female involvement (AIDER La Gomera, 2008).

Very little, however, has been published aimed at raising awareness of the work and life of the Canary rural population in so-called 'subsistence or family agriculture', particularly in the period of the Franco dictatorship which marked the end of the economic model based on primary sector activities. This lack of studies can have drastic consequences for the preservation of traditional culture and landscapes as they are the result of accumulated knowledge, skills and culture of relating to terraced landscapes over centuries. Its loss can generate a crisis of cultural identity and knowledge that can continue to be useful in the event of a return to agricultural activity. The only scientific papers that study the invisibility of women in the rural environment of the island of Gran Canaria or of the Canary Islands as a whole, are those of Ascanio (2000) and González-Pérez (2004), respectively. On the other hand, there are papers published by the Research Group on Underdevelopment and Social Delay (GISAS) of the University of La Laguna on the role of rural women in the transition from an almost despotic semi-feudal agrarian economy to a contract worker - based in the southeast of Tenerife and in La Gomera (Jerez Darias, 2015; Studer Villazán et al, 2017).

On one of the most mountainous islands of the Canary archipelago, such as La Gomera, agricultural activity was established following a process of banking that began with the

cultivation and sugar industry (late fifteenth century) after the Castilian conquest. The terraces currently continue to be the defining characteristic feature of the agricultural landscapes of this island (Romero Martín et al, 2019a and b). The diversity of these terraces is such that they receive several different names in Spanish, many of which give rise to place names. In this document, from now on we will refer to them simply as "terraces".

These types of cultural landscape have been the object of study and protection by the International Terraced Landscapes Alliance (ITLA) since its foundation and first World Congress (Honghe, China, 2010). La Gomera was one of the hosts of the IVth World Congress of ITLA in 2019 which showcased the magnificent system of terraced slopes of this island and indeed others in the macaronesian region, as well as those from 20 other countries. Included among the lines of study and action of ITLA are, most importantly, the recovery and preservation of their knowledge and culture.

The present study follows this principle, one of its objectives being to recognize and make visible the rural women of La Gomera. Their life and work on the island's terraces has made them acquire and accumulate a culture perfectly adapted to their environmental characteristics, coevolving with their socioeconomic history. Very little has been published, at either international or local scale, on the gender perspective in relation to these agrosystems. For this reason, we consider it necessary to incorporate, analyse and discuss the 'feminine viewpoint' in the common history of the agricultural terraces of La Gomera.

In view of all the above, the general aim of the present article is to make known the life and work of rural women in the framework of the terraced agrosystems of the island of La Gomera. There are two additional specific aims: the collection and analysis of testimonies provided by the women about their knowledge, occupations (both inside and outside the family circle) and life experiences and, secondly, an evaluation of the extent to which their labour (in the age in which they happened to live) has been acknowledged, recognised and appreciated.

2. STUDY AREA

La Gomera is the sixth largest of the eight islands that make up the Canary archipelago, located in the northeast Atlantic off the coast of Africa (Figure 1). Small in size (369.8 km^2), it rises steeply from the coast to its central plateau, Alto de Garajonay, at 1,487 m above sea level (a.s.l.). This volcanic island, though without eruptions for some 2 million years, has been described as an 'authentic museum of eroded volcanic forms' (Carracedo, 2008, p.161). It is an ancient massif with a roughly elliptical shape where intermediate heights (73.4% of the island's surface area falls between 200 and 1,000 m a.s.l.) and sharp slopes (61.2% of the surface area has slopes > 12°) predominate and very few flat areas are found (Santana and Villalba, 2008). Its shape can be compared to that of an orange juice squeezer, with a very abrupt relief, characterized by a radially distributed network of ravines which originate in the central plateau, and a cliff-dominated coastline (Figure 1).

The natural and cultural values of the island have been recognized by numerous institutions, including UNESCO who, in 1986, listed Garajonay as the first Spanish World Heritage Natural Site. Garajonay had previously been declared a National Park by the Spanish state in 1981. The whistled language of La Gomera, the *Silbo Gomero* has been included in the intangible cultural heritage list of UNESCO since 2009 and the island as a whole was declared a Biosphere Reserve in 2012. At the same time, the regional autonomous community government has incorporated 17 spaces, which correspond to 33% of the surface area of La Gomera, in the Canary Network of Protected Natural Areas.

The island has an abundance of resources (water, fruit, dye-producing plants, timber, fish, seafood...), which were already being exploited by the island's first pre-Hispanic settlers. However, it was not until the conquest and colonization of the island by the Spanish in 1488 that the terrace-building process and agricultural activity began, reaching its zenith in the 1960s. From the beginning, two opposing agricultural models have co-existed on the island: the traditional model of subsistence farming and the commercial or food export model (Jérez and Martín, 2017). Plots for subsistence farming tend to be situated inland and at mid-elevation and in valley beds. Different types of crops have commonly

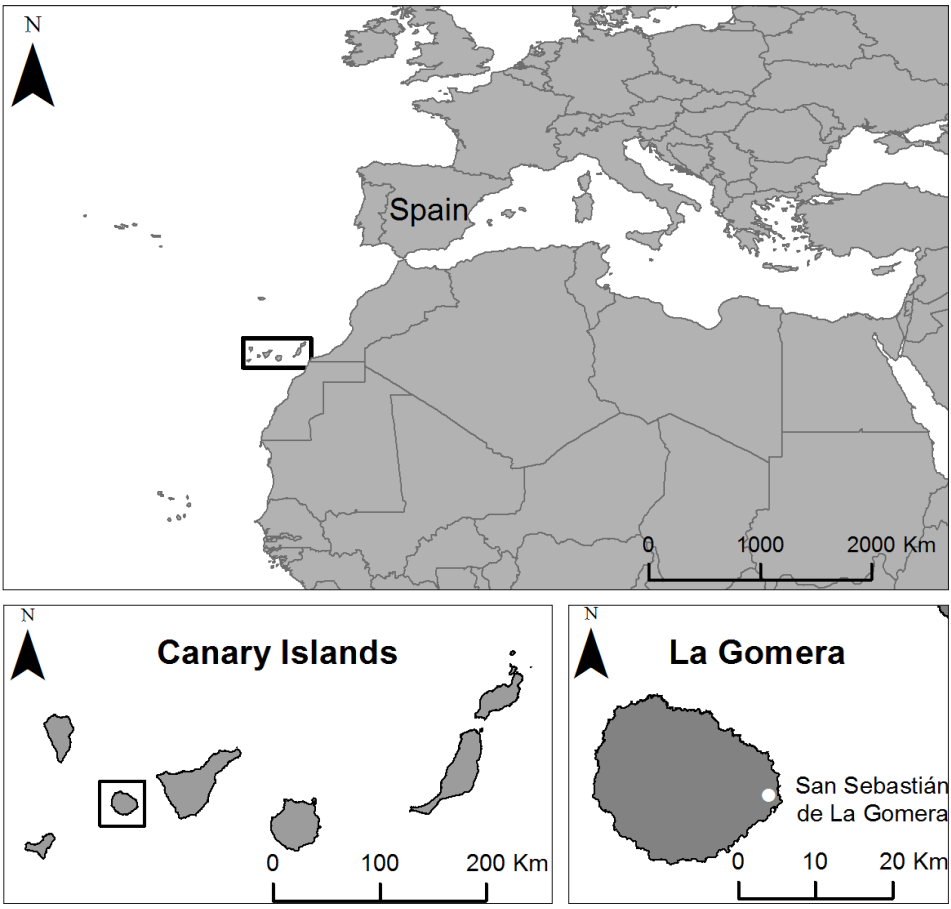

Figure 1. Location of the island of La Gomera, Canary Islands, Spain (map by Lidia Esther Romero Martín).

been grown (cereals, vegetables, fruit, grains) by small landowners and/or landless peasant farmers working on common land. Small landowners have also often found themselves obliged to work the lands of others to ensure their subsistence. Entire families were subjected to this kind of semi-feudal existence. The terraces dedicated to subsistence crops have experienced the greatest degree of abandonment in more recent times, particularly as the result of the mass emigration that took place during the 1950s, "great post-war population crisis" (Burriel De Orueta, 1982)[1] and today those that are still in operation are commonly cultivated only on a part-time basis.

Export agriculture - based on the cultivation of a monoculture - began with sugar (in parallel to the exploitation of the salt mine) followed by the vine and cochineal[2]. These crops were largely replaced from the beginning of the 20th century onwards with the introduction of tomato and banana cultivation. The owners of the banana and tomato farms were large local and foreign landowners who invested in major hydraulic works.

The workers were local people working under a semifeudal sharecropping regime in the case of the banana crop and as tenant farmers in the case of the tomato crop. In both situations, workers' rights were virtually non-existent and entire families were typically subjected to extensive practices of abuse of power. The farmed terraces of bananas and tomatoes were distributed around the entire coast of the island, though finally tomato growing became more concentrated in the hills of the south of the island where the climatic conditions were more conducive to its cultivation (Jerez Darias, 2015; Jerez Darias y Martín Martín, 2017).

The greatest changes in the agricultural history of the island took place during the 20th century, with a rapid population growth, which induced territorial pressure, and intensive terracing and tilling of lands gained from the mountainsides. A clear demographic and geo-economic inflection point can be seen in the 1950s and 1960s (Figure 2). The population census that was held in 1960 shows a peak number of inhabitants (30,747) that is double the number at the start of that century and considerably higher than the 17,239 recorded in 2021 (ISTAC, 2022). From the decade of the 1960s onwards, an economic polarization began to take place that was favouring the southern slopes, with the valleys of the north (Vallehermoso, Hermigua and Agulo) undergoing socioeconomic stagnation. A significant part of the large export-based farming properties of the valleys and hills of the south were converted into tourist developments and residential areas. The island economy saw a drastic departure from being farming-based (76% of the active population in 1950) to becoming strongly dependent on tourism and services (80% of the active population, according to EPA, 2021) (Figure 2).

Migration, first to Cuba (second half of the 19th century[3]), later to Venezuela (1947-

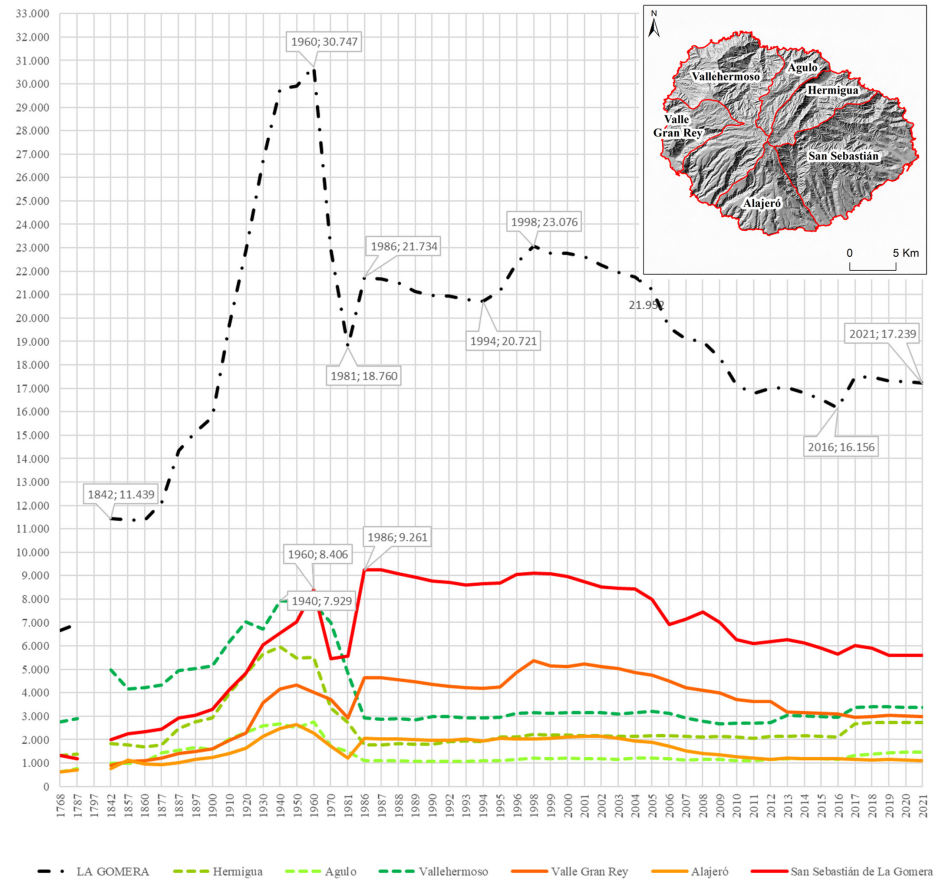

Figure 2. Evolution of the population of La Gomera 1768-2021. (map by Lidia Esther Romero Martín) (ISTAC, 2021).

1980, post Spanish civil war-Venezuelan oil crisis) and more recently to Tenerife (1970s and 1980s), acted as an 'escape valve' against underdevelopment, social injustices and the uncertain future of La Gomera's population. The first of these emigratory periods let mainly to the loss of young men, while the second was a process that began with the departure mostly of married men who would, in some cases, subsequently call upon their wives to join them (a 'family regrouping' initiative promoted by the Venezuelan government). Often, however, the families would never be reunited and the emigrees would settle down

with Venezuelan creoles[4]. Exactly how many women joined their husbands and how many were permanently left behind is difficult to know as the emigration statistics did not include the names of the women (Hernández González, 2008).

Another important factor to consider is the highly deficient communication network on the island. This was correct until 1949 when the northern highway was finally completed. And even until the 1970s, when the port of San Sebastián de La Gomera began to grow and the ferry connection to the south of Tenerife was opened, as a result of the rapid growth of tourism there. Prior to that time, however, any travel that was made on the island was on winding and dangerous roads and paths (Curbelo, 1984).

La Gomera presently has the third lowest population of the different islands in the Canary archipelago with 17,239 inhabitants (ISTAC, 2022). It has an ageing population (Figure 3) with a low birth rate, and a highly varying female:male ratio[5] (in 2021, from 100.1:100 in Agulo, a municipality in the north of the island, to 89.54:100 in Alajeró, situated in the south of the island) (Figure 3).

Within the archipelago, the island is in penultimate place in terms of cultivated agricultural land, after Fuerteventura, with 853 ha (2021, ISTAC). Today, la Gomera's inhabitants mostly work in the service sector, with the island welcoming around one million tourist visitors each year. The island has become a nature-based tourist destination, with interest primarily in hiking and cultural and scientific topics. Since 2009, it has formed part of the EUROPARC network through the European Charter for Sustainable Tourism, with the management of the Garajonay National Park, the Association of Rural Development and other public-private institutions ensuring the defence and promotion of ecotourism on La Gomera.

The abandonment of agriculture, the fall in the number of inhabitants, the ageing of its remaining population and the rise of tourism are endangering the preservation of the cultural terraced landscapes of the island, its agricultural diversity (traditional varieties of cereals and legumes, fruit tree orchards, grapevine cultivation, etc.). Although some walls

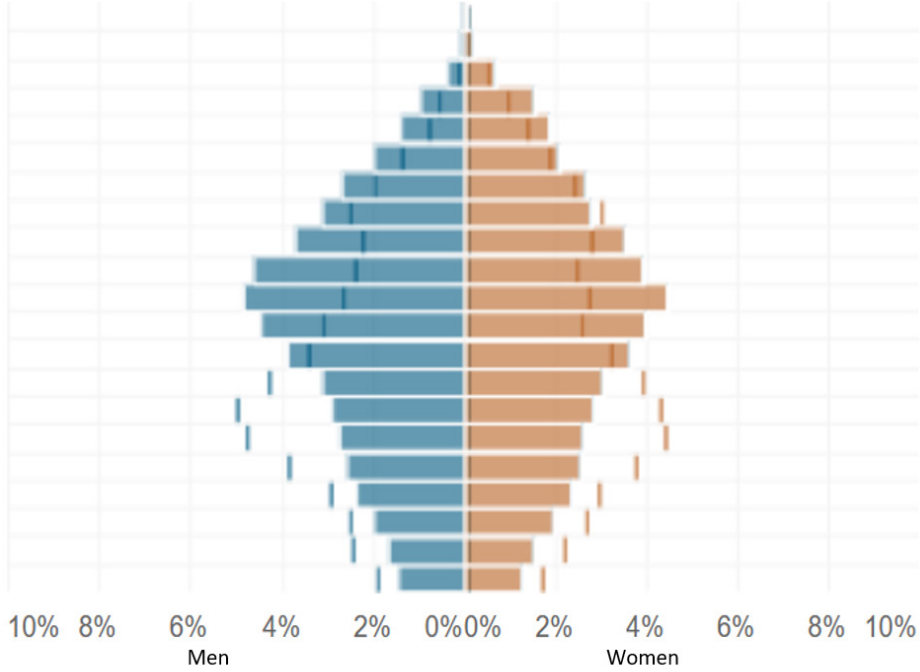

Figure 3. Evolution of the structure of the La Gomera population by age range (0-5 years) and sex in 2021 compared to the year 2000 (note the transparent bars) (ISTAC , 2021).

of the farmed terraces have been restored (thanks to the La Gomera Ecoplan, different plans developed by island associations, tasks undertaken by the island's local government), important work has been carried out to save and preserve the cultural memory of the terraces (AIDER La Gomera, 2008), and new custodial territory management formulas have been tested (AIDER La Gomera, 2010-2013), these have been insufficient to slow down the state of abandonment and deterioration of many of the terraces or to promote their active recovery. Finally, it should be noted that this deterioration not only affects the walls of the agricultural terraces, but also palm groves and farmhouses, along with many other elements of the ethnographic heritage associated with agriculture and animal rearing (presses, wells, threshing floors, bread-making ovens, brick ovens, limestone kilns, corrals, stables, cave houses, mills, etc.).

3. METHODOLOGY

The methodology employed is qualitative in nature. Several semi-structured interviews were held with questions in three thematic blocks: biographical data, occupations and knowledge, and life reflections, to learn about their lives within the terraced cultural landscape of the island

During the interviews these topics were tackled with a dynamic margin so that the women would perceive the interview as an informal chat that would make them feel comfortable when expressing themselves and, in this way, provide the interviewer (lead author of the present paper) with the opportunity to uncover aspects that had not previously been taken into consideration. Open and general questions were formulated, which, over the course of the interview, evolved towards more specific questions under the semi-direction of the interviewer who would redirect the conversation to the thematic blocks.

A total of 8 women were interviewed during 6 sessions, with two women being simultaneously interviewed in two of the sessions. Although it was hoped to be able to cover the entire island in terms of interviews with women from the six municipalities of the island, we were unable to find interviewees from two municipalities in the south: Alajeró and Valle Gran Rey. The north of the island, however, was fully covered, with 1 woman from Hermigua, 3 from Vallehermoso (2 of which from Tamargada district), 1 from Agulo, 2 from Cuevas Blancas (San Sebastián de La Gomera) and 1 from Tejiade (also San Sebastián de La Gomera). The selection of women was based on a similar profile, focusing especially on age, social class, and proximity to agricultural work. In this line, the women interviewed come from the peasant social class, with an age between 70 and 90 years (interval in which they were able to consciously experience the Civil War and the postwar period), and who dedicated themselves in their youth, and part of their adult life to work in the fields. Currently, some of them continue to cultivate their land idly, while others have no contact with agriculture, either due to age, lack of property or because they do not want it.

The main themes that were addressed in the interviews were two: on the one hand, their link with the stone-walled landscape (such as the domestic and agricultural tasks they performed), and on the other hand, self-recognition and social life. Including the knowledge and occupations of the women, their opinions on self-awareness, how they value their contributions, as well as questions and reflections on traditions and aspects of their lives in the past that they miss in the present. All the interviews were orally recorded after obtaining prior consent to do so. The results given in the following section were obtained after analysing the transcriptions of the interviews, treating the data obtained from a deductive analysis that starts from their testimonies, and following the structure of the interview. Based on the testimonies of the interviewees, the aim was to uncover information about the past history of rural women from La Gomera island, their domestic stories, and their female intrahistory. The methodology that was followed, which involved directly listening to the women relating their own life stories, also allowed us to ensure the preservation of multiple aspects of their lives that would otherwise have run the risk of falling into oblivion. The prime purpose was not merely to give voice to these women, but to additionally use these studies as tools to ensure those voices are heard.

4. RESULTS

4.1 Occupations and knowledge of women in the terrace agrosystems of La Gomera

The women interviewed, all of whom were born in La Gomera, had an average age of 82 (in 2021), and their lives had been closely connected with farming in different forms and occupations. While their original family structures were varied (for example, the interviewee IH had 15 siblings in contrast with CA who had just one sister), all of them had married and formed families with generally 2 or 3 children. Just one (HP) had stayed on the island when her husband emigrated, whereas the others went with their husbands to Venezuela (LA, JM and two who preferred to remain anonymous) or Tenerife (one who preferred to remain anonymous).

All the women described their own life in their rural environment as, at the very least, highly demanding. Although the work they undertook received little external recognition, they described the tasks they performed as being of equal value to those of their husbands since they considered the contribution that each was making as essential for the survival of the family. For this reason, while there may have been a gender-based work distribution (especially regarding those that demanded physical strength or 'brute force', as required in the construction, for example, of large terraces, tanks or roads), they did not perceive their work as being 'unequal' even though it was unpaid (unlike that of their husbands) but rather as being part of a reality with which they simply had to live.

The construction of the terraces (where the farming activities would take place) was a task predominantly carried out by the men given the physical strength that was required. Nonetheless, the women would contribute and participate in some tasks, like transporting buckets with stones for the construction of the walls. However, while there was generally little or no participation by the women in the actual terrace construction itself, all the interviewees were able to describe in perfect detail the different steps and materials necessary in the process, including the use of guidelines, wedging stones, earth filling, and donkeys (to transport the materials). They also explained the meanings of several local words and expressions that were used to describe different aspects of the process, including *sorriba*[6], *portillo*[7], *ripias*[8], *ereta*[9], and *llano*[10], the different uses of harder and softer stones, and the names of tools used to shape or move the stones, including the *marrón* and *barra*[11]. One of the women offered the following description:

> *They'd shape the stone with a hammer. You see how those walls are levelled, well they'd stretch a line of thread from that corner to this one and the wall would end up perfectly levelled. Stone by stone and with no cement. One further in and another further out, acting like a wedge. You should go to Cuevas Blancas and have a look there (IH, 2021).*

Another explained a part of the process in the following manner:

> *The men with a claw tool and hammer... They'd have a sort of mallet, large and heavy. The man would lift it over his head and smash it down to split the stone. If it didn't split completely it would usually at least open up a bit of a gap and they'd stick an iron wedge in there, whack the wedge with the mallet and split the stone that way (EM, 2021).*

Some of the women highlighted the brute force that was required to carry out this work and how it was impossible for them to lift or carry as much weight as the men. However, they did not see this as a question of inferiority but rather a simple distribution of tasks. The interviewees were born and worked on the lands that their parents and grandparents shared with others and/or on small plots which they owned. Their participation in agricultural tasks included numerous activities such as planting, collecting or bartering food, among others, although the intensity of the work may vary due to different issues (number of children who can help in the family unit, as well as the presence of the husband or other relatives to distribute the work).

In all cases, the crops that the worked lands supplied were used to sustain the household, and it was the women who managed the meals, cooked and fed the family. A traditional form of goods exchange - bartering with neighbouring households and nearby settlements - was employed to obtain other foodstuffs that were not supplied by the families' own land. On occasions, the women would go by foot (sometimes barefoot) to other places on the island to exchange, purchase or sell food (Figure 4).

The viticulture process was the same in all stories presented by the women interviewed: leaves were removed to allow better sunlight access and to extend the growing period of the clusters. When the grapes were fully grown, the clusters were cut and taken to the press, where the grapes were crushed underfoot and the must was obtained. This was commonly an opportunity for a family gathering which combined work and fun and in which both adults and children would participate (Figure 5). On occasions, the crushing process would be repeated to obtain a better must. The barrels were then filled and left in rooms for storing wine barrels for at least two months.

Figure 4. Tenant farmer women carrying tomatoes in San Sebastián (photo by Antonio Passaporte) (Passaporte 1, 1931).

Figure 5. Woman after grape harvesting in Agulo municipality sitting next to baskets of grapes (La Quebrada del Mocanal), 1985 (photo by Juan Rodríguez Escuela).

Today, however, this activity has disappeared to a large extent, with the traditional processing method largely abandoned. Many of the presses around the island have fallen into disuse, are in ruins or have been left behind in sheds and forgotten about.

The women were also responsible for looking after the animals from a young age. All the families had animals of one sort or another: goats, cows, sheep, chickens, pigs and donkeys. While the donkeys were only used for carrying loads (Figure 6), the others all played a vital role in providing food for the family. Looking after these animals was an essential role in the rural families, and it was the women who undertook most of the work involved while their husbands spent long days working in other places.

The goats provided milk and cheese, two essential foods in the households. The cheese-making technique, almost exclusively a task undertaken by the women (with both cow and goat milk), was passed down orally from mother to daughters. All the interviewees

Figure 6. Man and woman with their donkey returning from San Sebastian (photo by Antonio Passaporte) (Passaporte 2, 1931).

knew how to make cheese and their descriptions of the processes involved were all similar. The women also participated in wheat threshing and winnowing, as well as in the sheep shearing process to obtain wool with which to make blankets or *jergas*[12]. The animals were of vital importance as a source of food and/or labour in numerous farming tasks. While relation between human and beast may, to a large extent, have been utilitarian in nature, bonds of affection were often established with the animals as their owners were fully aware of their value and importance for the survival of the family.

As commented previously, it was also the women who were responsible for managing the food and preparing the meals. The most typical meals comprised large stews and soups into which whatever foodstuff was available would be thrown:

> *Do you know what we used to eat a lot of before...? Watercress stew, which we'd collect in the ravines. We'd go to Las Rosas ravine which was all nice and clean, though today it's very different and covered in bramble. We'd collect watercress and beans there, and the running water was just so clean and transparent (EM, 2021).*

Apart from vegetables and potatoes, their dishes would also involve fish (salted for preservation purposes), cheese, hard-boiled eggs and pork, etc. One of the most common foodstuffs they used was *gofio*[13]. To toast it, they would place a clay pot (bought from the women who came from Chipude) on top of the *chiniques*[14] and, with a *juercan*[15] , they would stir the corn together with beach sand to prevent it from burning (Figure 7). Then, with a *zaranda*[16], they would separate the sand from the corn and start the process again. Once toasted, it would be taken to the mill to make the *gofio*, although traditionally it was also made by hand using a stone grinder.

When special events were being celebrated, including Easter Day or the Saints Days of John or Mark, the women would meet to knead bread and make large batches of junkets, rye bread cakes and sweet buns for all the neighbours. On such occasions - as the pots and ovens were heated using firewood - all the women recall going, from a very early age,

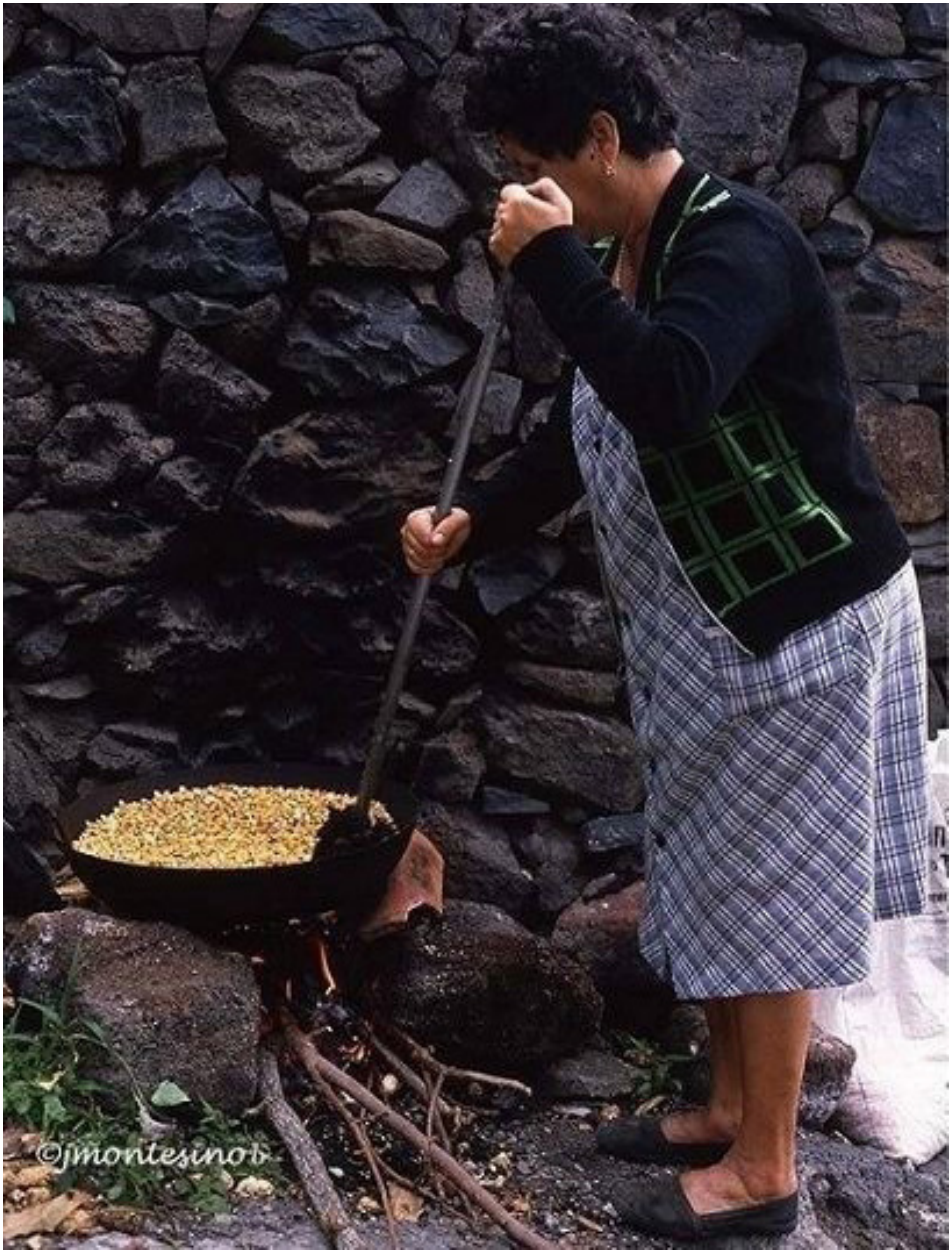

Figure 7. Woman from La Gomera (Carmen Ramos) toasting corn in the 1980s (photo by Juan Montesino Barrera) (Facebook, 2021).

into the mountains to search the firewood for cooking, and returning with large loads. The matrilineal nature of the oral tradition for passing on recipes and culinary techniques was described by all the interviewees. It was the mothers, grandmothers, aunts and sisters who were responsible for feeding the family.

The growing of herbs for medicinal and culinary purposes was common at the time framed in this study. These were used to soothe aches and pains or to add taste to the soups and stews. These herbs were grown close to the houses as opposed to on the terraces (which were not necessarily situated near the houses) so that they would be easily accessible daily. Some of the interviewees reported how various of the herbs would be bought from women who came from Chipude, "grown from the seeds of *magas*[17]" (CA, 2021).

Another use of these herbs was to soothe the menstrual pains that the women would suffer from, especially when they were working on the terraces. Menstruation, it should be noted, was strictly a taboo topic at that time, and the women were unable to communicate their physical discomfort.

> *So much pain. Very strong. There were women who would go out into the countryside to work and just be unable to continue and shout out that something had come over them. Someone would take them home, and they'd boil up some water with some herbs in it, which they'd sip at until the pain passed (EM, 2021).*

Despite the many occupations and tasks the interviewees were responsible for, their work remained essentially invisible and undervalued within society at large. One of the main reasons why the work of rural women was so ignored was the fact they were not paid for their labour. As a result, there is no statistical record of their efforts and no possibility of quantitative studies being performed; their work was essentially not being taken into account in official narratives nor within social-economic system (Ascanio, 2000; Camarero-Rioja et al, 2006). Some of the interviewees recall going to have government coupons stamped, but they were always dependent on the main source of income of their

husbands or a subsequent widow's pension:

> *I've never worked anywhere but in the fields and at home. I was daft to have worked so hard but never be paid a penny. Then, when my husband died, we got virtually nothing in terms of pension or coupons (IH, 2021).*

As reported by Jerez (2015) in a thesis on the territorial organization of La Gomera, the paid work performed by women tended to be as day labourers, sharecroppers or tenant farmers in tomato plantations (Figure 8) or in packing warehouses or fish canneries, all of which were situated in the south of the island. Of the women interviewed, at least three of them worked in the tomato fields and were paid for it, even if the conditions were not suitable. A type of semi-feudal sharecropping regime was the most common type of work in La Gomera at that time, a system that was grossly unjust for the peasant community. The women suffered the most through a double discrimination in terms of their social status and gender: they were paid less than the men and underwent a series of abuses and harassments, which could be described, at best, as discriminatory (Jerez, 2015).

Nonetheless, the labour of the women in the tomato plantations was essential, with La Gomera being the third biggest tomato exporter in the Canary Islands (Díaz, 2008). Although many women moved to the south of Tenerife to work in the tomato plantations there, there were also many successful companies operating in La Gomera, including Elder and Fyffes (British), Rodríguez López S.A (Tenerife), or Fred Olsen S.A. (Norway), and later the Bonny Group. Through these companies, women began to occupy a place in the rural labour world, especially in tomato or banana packing. Even so, extremely few of the women signed any actual work contracts and had precarious working conditions with no fixed salary or work schedule.

In short, the labour of the women interviewed on the terraces of the island is present in agricultural activity and its multiple processes: from planting and cultivation (through harvesting, irrigation, harvesting and bartering) to its ultimate end of sustaining the family. Although their work in the construction of terraces has been minor, in order to study

Figure 8. Women working in tomato harvesting (photo by Antonio Passaporte) (Passaporte 3, 1931).

the cultural landscape of terraces, other factors that go beyond physical and architectural aspects must be taken into account, such as cultural heritage and the social relations of production that underlie the stone-wall system of the island.

4.2. Women's lives and life experiences on the farmed terraces of La Gomera from the perspective of dignity and sisterhood

Once the role of the interviewed women in agriculture on the island has been analysed, it has been considered relevant for the case to focus the following block of analysis on the self-recognition that the interviewed women had of themselves, in order to give voice to issues such as their awareness and opinion about gender inequality, the sisterhood that existed between them, community solidarity as a key to survival, or loneliness in situations such as migration. According to studies such as the one by Studer Villazan et al (2017), women would have a double (and even triple) working day. If one day, for example, a woman had to go and work on the land and had nobody to leave the children with, she would take them with her and stay on the land until sundown.

> *I'd get up, give the kids some breakfast and take them with me to pick herbs. I'd lay a blanket on the ground and sit them there. When I'd finished, I'd stick the blanket on my head, and with one of the children on my back, another in my arms and two or three others hanging on to my trousers I'd drag myself and them home. That was what a woman's life was like back then, for me and everyone my age (EM, 2021).*

Another reported as follows:

> *In the times of the civil war, yes, people would help each other. There was always a mother, a grandmother or a sister who'd take care of the little ones. But that wasn't the case at other times when you'd have to look after them all day yourself, sitting them down somewhere close while you went about your work or searching for something to eat that night. And you'd probably have to carry what you'd got or picked back home on your head while carrying the kids as best you could. A lot of women went through that. Life was so tough back then (LA, 2021).*

When they returned home, they would prepare the food and feed themselves and the children. If the husbands were out working all day, some of the women would go to them, carrying on the top of their head, which was covered with a *ruedo*[18], large pots of prepared food to feed the whole group of men as they would not conceive of taking food for just one man.

Throughout the interviews the women would repeatedly express and stress just how difficult their lives had been, the hard work they had to do, the sacrifices they made, and the enormous physical and psychological efforts that were required to carry on with their lives. Mothers, grandmothers, aunts, sisters, daughters, all played the role of caretaker, food manager, cook, seamstress, livestock breeder, farmer… While the men were off on long workdays, the women were relegated to domestic tasks, in the silence and invisibility of the home.

However, and despite the above, they remember with nostalgia those times when neighbours would help each other. The collective actions of these communities of neighbours were often a determining factor in the survival of families. If anybody needed help or if somebody in the family fell ill, others would lend what they could in assistance. This form of behaviour was remembered several times by all the interviewees, independently of whether they had been directly asked about it or not. Some of them had been lucky enough to receive help from their parents, grandparents and in-laws in the upbringing of their children, while others either had to make their own arrangements or relied on the support of a neighbour, thereby creating a community-based upbringing with a backdrop of sisterhood and solidarity.

It is because of the existence of this strong social cohesion that the interviewees said they did not feel a lack of equality between them and the men when they were growing up and being raised in their rural environment. All played a vital role in the proper functioning and performance of the rural works that were carried out and in the survival of their families, with both men and women undertaking arduous tasks. While it may be true that some of the interviewees described their work as being 'of assistance' to their husbands, they nevertheless proudly defended having successfully raised their children while their

husbands were out at work. Others, on the other hand, underlined how they worked as hard as the men, and indeed more so given that once they had returned from work the men would never engage in any household chores. The women, however, would do so, aware as they may have been that this was in effect a double workload but also that such chores were just like a real job: "What happened was that when both the men and their wives were out working all day and it was time to go home, it was always the women who would work in the house while the husbands did nothing. God spare us! So basically, it was the women working double time" (Anonymous, interview 6, 2021).

Likewise, several interviewees reported how the baton of the role of mother would be passed on to the eldest daughter of the family. The families tended to be large in number, and some of the interviewees were the first female offspring in the family and, despite having elder brothers, it was they who would take on the role of caretaker. In contrast, the younger sisters were not given that responsibility, at least not to anywhere near the same extent. In addition, being the eldest sister had other responsibilities, as they were the first to live through situations that it was socially frowned upon to talk about. These would include the taboo surrounding menstruation or the wedding night. The women who spoke in the interviews about how they would have to suffer the pains of menstruation while working on the land described how hard it was to be unable to stop working despite feeling exhausted and their frustration at being unable to openly communicate to others their physical discomfort. Here, once again, sisterhood played its part, and among each other the women would find support, understanding and assistance.

> *We'd have to carry around this sort of chamber pot to wash and clean ourselves in secret so that our brothers wouldn't see it. You wouldn't believe how much I'd cry when my period came. But amongst us sisters, we'd whisper about it to each other in secret and lend each other whatever was needed (IH, 2021).*

Their self-awareness and self-determination were showcased in the interviews when the women spoke of the pride they feel when recalling the life, they have lived, with some saying they would be happy to live that life again. All the women, however, indicated that

they were not really aware during their youth of what they were going through, but that they simply accepted it as the reality that was happening to them (in reference to their labour, economic, family or marital situation) (Figure 9).

> *Well, some argue that they're just the times you're born into. But I would say that if things go from bad to better, then that's good, but if they go from good to worse, then that's not so good at all because you can go through anguishing times without knowing how to deal with them and worrying about where it's all going to end up. The newest generations have it all laid on for them from the day they're born. I guess you just have to adapt to what there is, and that's that (LA, 2021).*

Some of the women even recall the shame they felt when they had to go to the villages, aware of the social stigma attached to them for being peasants at a time when the island

Figure 9. Women interviewed (LA and HP), natives of Tamargada (Vallehermoso) on the day of their interview. LA passed away on January 19, 2022 (photo by Lidia Esther Romero Martín).

was in a moment of transition and its productive system was shifting towards the tertiary sector. However, while this may, at the time, have generated some type of inferiority complex, when they were relating these events the women who were interviewed revealed their strength of character and indifference, demonstrating their dignity by describing the hardness of the of the rural nature of their life when compared to that of the villagers who enjoyed a more comfortable and modernized way of life.

> *Yes, that's the way I think today. We worked much harder than they did, but grew up ashamed of our situation (IH, 2021).*

According to the results of a study carried out by Studer Villazan et al (2017), such narrations should be placed into the historical context of the Franco Regime and conservatism, where the invisibility of women in the type of society that they happened to live in was also manifest in the sphere of work, as they tended to have no contracts, no allowances, no unemployment benefit, no disability payments, and few old age pension rights. In any case, for women to be able to exit the family situation, gain their "independence" and discharge their parents from the responsibility of feeding and housing them, they would have to marry and switch from the family yoke to a marital one. It should be noted that the women who were interviewed got married between the ages of 16 and 23, with some of their husbands as much as 10 or even 15 years older than them. According to one of the women:

> *Yes. I went to Venezuela. When my mother died, she was 42 years old and I was 16. I got married when I turned 17 and at the start of the next year I set off for Venezuela. My husband was already there. It was a proxy wedding. We spent a few years working there, but all the children were born here (Interview 6, 2021).*

In light of this last statement, it should be noted that three of the husbands of the interviewees had to emigrate to Venezuela (though also to Cuba and the south of Tenerife in other cases) in order to send money and packages to their families back home that would allow them to survive. Some of the women spoke of how they were left behind

by their husbands while others went with them at an early age. In the case of those who remained on the island, they reported how they had the support of their parents and in-laws, ensuring that between them the lands could be worked and the children born before the husband's departure raised. It was the women, however, who were essentially responsible for managing the family budget, the house, the animals, the meals and the farming land. In other words, it was these women who constituted the cornerstone in the livelihoods of those who stayed in rural La Gomera during the migratory boom of the 1940s-60s. Other interviewees reported how they followed their husbands shortly after they had migrated but did not stay long. Others accompanied their husbands from the start, returning together some years later having saved sufficient money to build a house, buy land and maintain a family.

5. DISCUSSION AND CONCLUSIONS

The successfully achieved aim of this study has been to give a voice to rural women from La Gomera and see how they lived their lives as young and mature adults in a period during which the current extreme abandonment of farming activities began. What has been reported from other territories is confirmed; namely that the women of La Gomera performed multiple tasks in multiple spheres (productive, reproductive and community) over the course of very long workdays, which exceeded those of many men. The perfect adaptation of these women to the complexity and severity of the natural environment in La Gomera, because of altitude, geographic orientation and the orographic barriers that constitute the ravines and catchment areas, has also been shown. The diversification of strategies, the combined and complementary use of different ecosystems and agrosystems (mountain, coast, terraced farming for food, wine, etc.) form an important part of the farming culture of la Gomera in which the women have been major protagonists.

The fact that social structures have historically pushed women into the background is not necessarily reflected in the self-awareness that the interviewed women had of themselves. In one way or another, they expressed being aware of their productive, reproductive and

community-based importance and - with pride and without any sense of victimhood - defended the numerous sacrifices they have had to make in their lives. With character, they have described their work, how it provided them with dignity and empowerment through its remarkable achievements, despite occasionally acknowledging the unusual nature of certain aspects of their past life.

Given the interviewed women's multiplicity and diversity, it is impossible to speak in a generalized manner about their lived realities. These realities varied depending, among other factors, on where exactly the women were born, their life experiences and other character-forming circumstances. What can be spoken of in a generalized manner is undoubtedly the importance of the exhaustive and exhausting work that the women undertook during their lives both on the land and in their homes: "I was never a slave to my husband, I was a slave to the land" (EM, 2021). Conscious of the arduous work they did during their lives, they also shared the sorrow they feel when they see the current state of abandonment and deterioration of the lands where they toiled so hard.

It was also possible to discern and record through the interviews with the women their world view, the elements that formed part of their lives, the long journeys they had to make to trade and barter provisions, the way they managed the food supply, brought up their children and conducted their marriage, as well as their views on illness and death. All this forms part of the cultural landscape of the terraced farmland, because not only is it important to consider their construction, subsequent uses and productive exploitation, but also all the social, economic, political and cultural systems that were associated with them, and which also form part of the cultural heritage of the island.

For this reason and given the risk of losing forever this history and cultural heritage, if it is not recorded for posterity, we defend the importance and necessity of undertaking this kind of qualitative research. The technique of interviewing not only allows the recovery and recording of local terminology and know-how, but allows, through their own voices, capturing the life stories and biographies of otherwise anonymous women and, in this way, show a part of history that has been stigmatized and pushed into the background

(González, 2004). As an ongoing scientific research, the hope is to continue this study by increasing the number of women interviewed and even extending its scope to include women of other social classes in order to gain a more holistic viewpoint of the female universe of the time period considered. And part of these testimonies can be incorporated into the narrative dedicated to women, in an interpretation center that has been projected to install the town of Agulo on terraces. The voices of some of the interviews can also be used in audio guides of interpreted routes on terraces that are designed and offered as tourist experiences. For all the above reasons, it is important to engage in recording, investigating and highlighting these narratives, thereby preserving for posterity otherwise untold memories of rural women.

This is a living cultural heritage from which much can be learnt and based on which the present can be improved and the challenges of the immediate future tackled, including adaptation to global climate change and the attainment of the Sustainable Development Goals or, more specifically, food sovereignty and gender equality.

Finally, from the registered testimonies, it can be verified that despite the triple invisibility indicated by some authors (woman, rural and worker) (Camarero et al, 2006), the Gomeras were women with self-confidence, self-esteem, with high personal dignity and conscious of their abilities and the support received by their family environment, their neighbours and their peers.

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Endnotes

1 La Gomera suffered at that time the exhaustion of its economic activity (exceeding its carrying capacity) and it is the time of the Spanish civil war and the famine.
2 The cochineal is the Canary name for Dactylopius coccus Costa, a parasite of plants such as prickly pear, native to America, from which the natural dye is extracted, made up of two famous substances, carmine and carminic acid.
3 Between 1848 and 1898, coinciding with the cochineal trading crisis, a total of 1,461 people left La Gomera for Cuba. Of these, 1,285 were men (87.95%) and just 176 women (12%). This migratory period was thus dominated by males, generally young and single.
4 It is not known exactly how many so-called 'white widows' were permanently left behind by their husbands in La Gomera. These women were defenseless, along with their children, before the law and had no rights to a pension or similar financial assistance.
5 For more information on the number of females per 100 males, see GitHub (2022)
6 *Sorriba*: transportation of plant material from the uplands to the terraced areas closer to the coast
7 *Portillo*: local name used to describe the falling of rocks from the walls of the terraces
8 *Ripias*: name given to small stones and fragments of split stones used to fill up gaps in the walls and allow drainage
9 *Ereta*: name given to terraced plots on La Gomera with a long and narrow stretch of levelled land
10 *Llano*: name given to larger-sized terraced farms often situated on valley beds
11 *Marrón* and *barra:* names of tools used in the construction of the walls to, respectively, ensure the proper shape and size of the stones and their correct positioning
12 White woolen blankets with three strips which were sown together and finished off with a black-coloured stripe or squares
13 A sort of flour made from toasted grains
14 Stones used to support the cooking pots
15 Stick with a cloth ball at one end held together with strips of banana leaf, and used to stir the corn while being toasted
16 Type of sieve made from vegetable fibres; also the name of a traditional dance in Lanzarote island
17 Name given to women who lived and worked in the countryside in the westernmost islands of the Canary archipelago
18 Cloth that was wrapped around the top of the head so that the load would be easier to carry and to ensure that what was being carried would not enter into direct contact with the skin. Sometimes the women would pick fresh herbs and place them on the cloth so as not to burn their heads.

Bibliography

AAIDER La Gomera (2008) *La Gomera, hablando con la memoria*. Dirección Editorial: Asociación Insular de Desarrollo Rural e La Gomera.

AIDER La Gomera (2010-2013) *Agropaisajes insulares*. Proyecto de custodia del territorio en islas turísticas y rurales (La Palma, La Gomera e Ibiza), financiado por el Ministerio de Agricultura, Alimentación y Medio Ambiente, en el marco de la red Rural Nacional.

Ascanio Sánchez, C. (1998) Deconstruyendo olvidos: el proceso migratorio canario desde una perspectiva de género, in *XIII Coloquio de Historia Canario-América*. Gran Canaria: Cabildo Insular de Gran Canaria.

Ascanio Sánchez, C. (2000) La mujer en el medio rural grancanario. Enfoques y sistemas de invisibilidad, in *XIV Coloquio de historia Canario-Americana*. Gran Canaria: Cabildo Insular de Gran Canaria.

Burriel De Orueta, E. (1982) *Canarias: población y agricultura en una sociedad dependiente*. Barcelona: Oikos-tau.

Camarero Rioja, L.; Castellanos Ortega, M. L.; García Borrego, I.; Sampedro Gallego, R. (2006) *El trabajo desvelado. Trayectorias ocupacionales de las mujeres rurales en España*. Madrid: Ministerio de Trabajo y Asuntos Sociales, Instituto de la Mujer.

Carracedo Gómez, J.C. (2008) *Los volcanes de las Islas Canarias*. IV La Palma, La Gomera y El Hierro: Editorial Rueda S.L.

Curbelo Curbelo, C. (1984) La Gomera: Transporte por carretera y organización del espacio insular. *Revista de Historia Canaria*, 175, pp. 855–870.

Díaz Padilla, G. (2008) *Pescantes de La Gomera: testimonios de la arqueología industrial de Canarias*. Cabildo Insular de San Sebastián de La Gomera.

EPA (2021) *Encuesta de Población Activa*. Madrid: Instituto Nacional de Estadística de España.

Facebook (2021) La Gomera, su paisaje y su gente. Available at: https://www.facebook.com/jmontesinob/?locale=es_LA (Accessed: 19 August 2022).

FAO (2000) La mujer rural y el derecho a la alimentación, in El derecho a la alimentación en la teoría y en la práctica. Available at: https://www.fao.org/3/w9990s/w9990s10.htm#TopOfPage (Accessed: 19 August 2022).

GitHub (2022) Latin America and the Caribbean. Available at: https://carlosmunozdiaz.github.io/ (Accessed: 19 August 2022).

González Pérez, T. (2004) Las mujeres en el mundo rural isleño. *Tenique Revista de Cultura Popular Canaria,* 6, pp. 215–233.

Hernández González, M. (2008) La emigración canaria a América a través de la historia. *Cuadernos Americanos,* 126, pp. 137–172.

ISTAC (2022) *Estadística de la Evolución Histórica de la Población. Municipìos por islas de Canarias 1768-2021*. Gran Canaria, Tenerife: Instituto Canario de Estadística.

Jerez Darias, L. M. (2015) *La organización territorial de La Gomera: un ejemplo de subdesarrollo*. PhD tesis. La Laguna: Universidad de La Laguna.

Jerez Darias, L. M.; Martin Martin, V. O. (2017) La Gomera: Una isla en manos de la gran propiedad territorial isleña. *Boletín de la Asociación de Geógrafos Españoles*, 74, pp. 9–33.

Lahoz, C. (2006) El papel clave de las mujeres en la seguridad alimentaria. *Seguridad Alimentaria y Políticas de Lucha contra el Hambre*, pp. 117.

Lastarria Cornhiel, S. (2008) *Feminization of Agriculture: Trends and Driving Forces*. Washington, DC: World Bank.

Quijano, M. A. F.; Correa, E. P. (2003) Mujeres rurales y nueva ruralidad en Colombia. *Cuadernos de desarrollo rural*, 51.

Passaporte, A. 1 (1931)Tenant farmer women carrying tomatoes in San Sebastián. Photographic collection of the Spanish Historical Heritage (Fototeca del Patrimonio Histórico Español). Collection no. 10792. LOTY Foundation.

Passaporte, A. 2 (1931) Man and woman with their donkey returning from San Sebastian. Fototeca del Patrimonio Histórico Español. Collection no. 10803. LOTY Foundation.

Passaporte, A. 3 (1931) Women working in tomato harvesting. Fototeca del Patrimonio Histórico Español. Fototeca del Patrimonio Histórico Español. Collection no. 10788. LOTY Foundation.

Rey Castelao, S. (2015) El trabajo de las mujeres rurales en la España Moderna. Un balance historiográfico, 1994/2013. *Revista de Historiografía*, 22, pp. 183–210.

Romero Martín, L. E.; Hernández Cordero, A. I.; Santana Cordero, A. M.; Vargas Negrín, C.; Palerm Salazar, J. M. (2019a) Terraced landscapes in the Canary Islands: La Gomera, "The Terrace Island", in *World Terraced Landscapes: History, Environment, Quality of Life*. Cham: Springer.

Romero Martín, L.E; Rodríguez Rodríguez, Mª Ángeles; Callejas Castro, E. (2019b) Los bancales como señas de identidad de los gomeros: una mirada al territorio, in *Habitar en Territorios de Terrazas y Bancales (Conclusiones del IV Congreso Mundial ITLA)*. Gobierno de Canarias, Canarias Cultura en Red, Observatorio del Paisaje de Canarias.

Rowlands, J. (1997) *Questioning Empowerment. Working with Women in Honduras*. Oxford: Oxfam Print Unit.

Santana Santana, A.; Villalba Moreno, E. (2008) *Atlas Anroart de Canarias*. Las Palmas de Gran Canaria: Anroart Ediciones.

Slavchevska, V.; Kaaria, S.: Taivalmaa, S. L. (2016) *Feminization of agriculture in the context of rural transformations. What is the Evidence?* Washington, DC: World Bank. https://doi.org/10.1596/25099.

Studer Villazán, L.; Martín Martín, V.O.; Jerez Darias, L.M.; Fernández Peraza, C.J.; Torres Mejías, A. M. (2017) La mujer rural en el sureste de Tenerife (1960-80): Un estudio de historia oral. *XXII Coloquio de Historia Canario-Americana*, pp. 1–10.

Article

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Intertwining tectonics – the intercultural work of Anni Albers

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ABSTRACT

This article reflects on the intertwining of art, architecture and landscape in the work of the artist and educator Anni Albers. It focuses on the tectonic quality of weaving as a central theme in Albers's oeuvre, which she developed following her studies at the Bauhaus and throughout her repeated visits to archaeological sites in Mexico.

The text looks at Albers's interpretation of the geometries of architecture and landscape, as well as of local weaving traditions, through the examination of her formal and material experiments. It follows the development of the spatial aspect of her weavings and their conversion into constructive elements alongside her collaborations with architects and the textile industry. The article also takes into consideration Anni Albers's theoretical contributions to transferring design knowledge, such as *On Weaving*, a compendium of weaving techniques that includes textiles from Albers's collection of Pre-Columbian art along with pieces of her own work, as well as that of contemporary artists.

Moreover, the article investigates how the study of ancient Mesoamerican architecture and art contributes to the universality and radical contemporaneity Albers sought in weaving. It shows the relevance and topicality of Albers's work, revealing her trailblazing ideas, beyond preserving or passing on artisanal traditions, drawing on craft as a means for carving out and transmitting the essential quality of weaving as a space-creating, future-oriented activity.

KEYWORDS

Anni Albers, weaving, tectonics, architecture and landscape, Mesoamerican culture, design knowledge transfer

1. INTRODUCTION

The motivation for this article arose from a visit to the exhibition *Josef Albers in Mexico* at the Peggy Guggenheim Collection, Venice in 2018, which showed the influence of Mexican architecture, both pre-Hispanic and Hispanic, on the work of artist Josef Albers (1888-1976). What the exhibition elicited to a great extent was the role of Josef Albers's female partner, textile artist Anni Albers (1899-1994), in the couple's lifelong exploration of Meso- and South American culture. Although numerous exhibitions and publications, such as *Anni Albers* at the Tate Modern in London or *Anni and Josef Albers Latin American Journeys* have tried to fill this gap in recent years, I consider it important to point out Anni Albers's continuing relevance as an intermediary between cultures – European and American – and as an investigator 'in practice'. For though almost a hundred years have passed since German-born Annelise Fleischmann started her studies at the Bauhaus School in Weimar in 1922, her ideas remain highly topical today and influence countless designers, artists, and scholars all over the world. This article focuses on her importance as an intermediary between cultures, times, and production processes, highlighting her multifaceted activity as an artist and designer, teacher, collector, scholar, and writer.

In particular, the present article attempts to elucidate two aspects related to Anni Albers's travel experience and her contact with Mesoamerican and Andean weaving culture: Firstly, how her own ideas of the essence of weaving, related to material and structure, came to be corroborated and developed through her acquaintance with not only textiles and tools, but also architecture and landscape; secondly, how Anni Albers incessantly endeavoured to transmit her inter-cultural ideas to students and professionals worldwide and how her unprejudiced and unconventional thoughts offer a source of inspiration for professionals today, serving as an impulse for – interdisciplinary – efforts to fully develop the potential of textiles. Consequently, the first part of the article explores the constructive and spatial aspects of Anni Albers's work and the tectonics of her weaving, informed by Mesoamerican and Andean culture, architecture, and landscape. The second part focuses on Anni Albers's interdisciplinary approach, her experimental form of knowledge transfer, and its impact on contemporary textile applications.

2. BACKGROUND

Anni Albers's weaving activity oscillated between art and design, manual and machine production. In the course of her studies at the German Bauhaus, where she was allocated to the weaving workshop, she received classes by artists Johannes Itten, Wassily Kandinsky, and Paul Klee. During the first Bauhaus phase in Weimar under director Walter Gropius she produced hand-woven artistic works, wall-hangings, and rugs; her final study project at the Dessau Bauhaus, dating from 1930, then led by Hannes Meyer, however, was an innovative, light-reflecting yet sound-absorbing wall fabric for an auditorium, intended for industrial production.

And a light-reflecting material was something completely new at that time, as was a sound-absorbing material that had a light surface. So this was quite an intriguing kind of textile engineering (Albers, 1968).

Already during her study years, in line with a general societal interest in non-European cultures, Anni Albers had come into contact with American textiles, through visits to the extensive textile collection at the Museum of Ethnology in her hometown Berlin, the study of respective literature, such as *Kunstgeschichte des alten Peru* (*The art of old Peru*) by Walter Lehmann and Heinrich Ubbelohde-Doering, and the formal composition studies with Paul Klee, who used images of Andean textile samples in his classes in order to explain basic composition strategies. The study of pre-Hispanic, 'primitive' art and its abstract visual language was perfectly consistent with the early Bauhaus ideal of a craft revival and the search for a universal aesthetic (Gardner Troy, 2002, chapter 3). In 1933, Anni and Josef Albers would emigrate from Nazi Germany to the United States and start building up their own workshops at the newly founded Black Mountain College in North Carolina, through the intermediation of American architect Philip Johnson, at the time director of the architecture department at the Museum of Modern Art in New York. When visiting Mexico City in 1936, on the occasion of an exhibition of Josef Albers's works, the Alberses found themselves not only surrounded by a lively creative scene, a cultural beehive (Salinas, 2019), but also close to pre-Hispanic archaeological

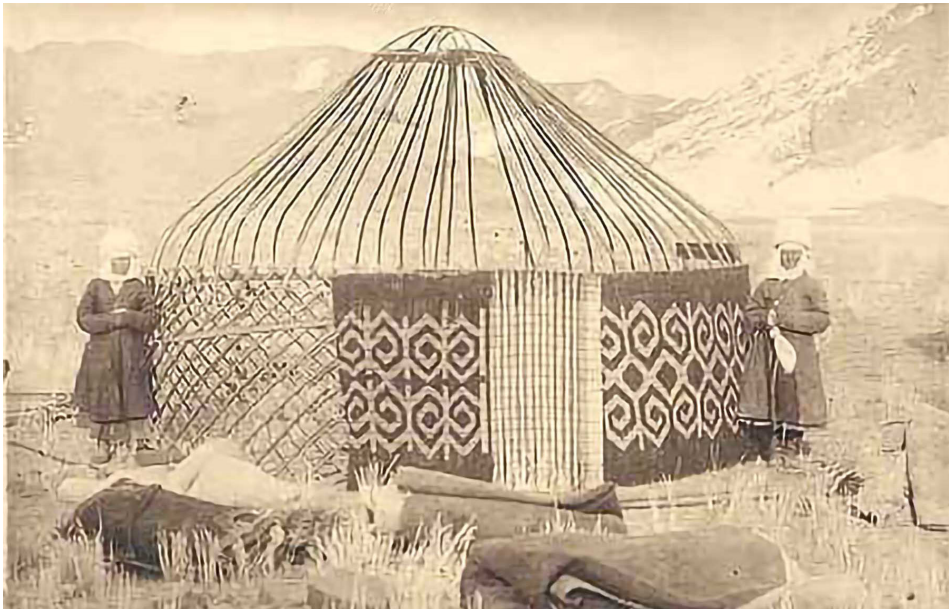

Figure 1. Above top, Kirgiz Yurt with reed screen, Central Asia. Photograph, 19th/20th century (Photo Archive, Anahita Gallery).

Figure 2. Above bottom, traditional Burmese Woven Bamboo House. Detail (photo by Julien L. Balmer, Visualspectrum Photography).

sites, which they repeatedly visited in the course of their following journeys to Meso- and South America between 1937 and 1967. The impressions during their numerous journeys, especially of the architecture and landscapes, inspired both artists deeply and informed their future work (Reynolds-Kaye, 2017).

3. THE TECTONICS OF WEAVING

Woven elements are among the first architectonic structures. As German architect Gottfried Semper disclosed in his seminal book *Style in the Technical and Tectonic Arts; or*, *Practical Aesthetics (Der Stil in den technischen und tektonischen Künsten; oder, Praktische Aesthetik: ein Handbuch für Techniker, Künstler und Kunstfreunde. Frankfurt am Main, 1860)*, textile art is the "primeval art", the earliest technical art form, ahead of carpentry and masonry (Semper, 2004, p. 113). Wattle and woven fabrics have been used as shelters (Figure 1 and 2), such as tents, for tens of thousands of years. Anni Albers refers to this essential function of textiles in her essay *The Pliable Plane; Textiles in Architecture*, where she comments on enclosures of walls and roofs as extensions of body-protecting clothes: *And if we think of clothing as a secondary skin we might enlarge on this thought and realize that the enclosure of walls in a way is a third covering, that our habitation is another 'habit'*. (Albers, 1957, p. 40).

Albers's text points out the spatial significance of weavings: although seemingly plane surfaces, textiles can be bent and folded and create space as they are being deployed in space. In this sense, Albers follows Semper's idea of textiles' space-creating capacity: *Weaving began […] as a means of dividing the "home", the* inner life *from the* outer life*, as a formal construct of the spatial idea. It preceded the simple wall made from stone or another material* (Semper, 2004, p. 248).

Weaving is inherently tectonic. It is a technique based on a simple geometry determined by an orthogonal structure of two sets of threads, the tensioned warp threads, and the crosswise moving weft thread(s), interlacing each other (Figure 3). This is only seemingly a

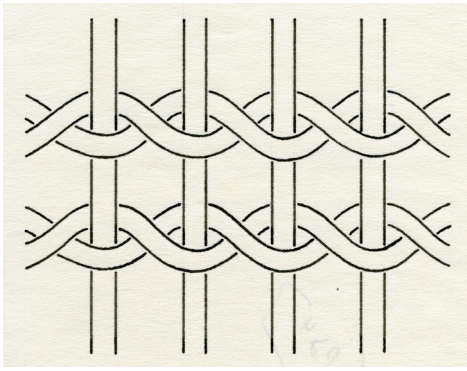

Figure 3. Above left, Anni Albers: Diagrams showing twining, ca. 1965 (Detail). From plate 24 "Early techniques of thread interlacing" in On Weaving, 1965. The Josef and Anni Albers Foundation (JAAF), 27.7. (© 2022 The Josef and Anni Albers Foundation / Vegap, Madrid).

Figure 4. Above right, willow spiling retaining system (Salix River and Wetland Services, Thetford, Norfolk).

simple affair, as one deducts from Anni Albers's own definition of weaving as "the **intricate** interlocking of two sets of threads at right angles" (Albers, 1946, p. 23) [accentuation by the author]. Usually, a weaving starts with a lower, horizontal line of weft thread crossing the vertical warp, then zigzagging upward to ultimately form parallel lines of threads. This way of constructing a textile, interlacing elements from the ground line upwards, is similar to constructing stone or brick walls and ultimately, to constructing terraces by retaining walls, which, interestingly, can be made out of woven material, too (Figure 4), a fact, which shows that weaving is a most versatile constructive technique.

4. THE CONTINUOUS LOGIC[1] OF WEAVING AND ARCHITECTURE

4.1. Structure

Anni Albers's textile work and writings reflect on structure as one of the central topics. In her essay, *The Pliable Plane; Textiles in Architecture*, Albers defines weaving as "a process of structural organization" (Albers, 1957, p. 36). She further notes:

If […] we think of the process of building and the process of weaving and compare the work involved, we will find similarities despite the vast difference in scale. Both construct a whole from

separate parts that retain their identity, a manner of proceeding, fundamentally different from that of working metal, for instance, or clay, where parts are absorbed into an entity (Albers, 1957, p. 36).

Weavings and masonry therefore have structural similarities: not only are they built up from a bottom line, but their constituting elements remain visible in the end product, as Albers herself depicts in a series of paintings (Figure 5). Just as in a stone or brick wall the individual elements are visible, in a weaving each thread still remains identifiable, a fact that Anni Albers accentuated in later works by adding additional, eye-catching free floating weft threads into the weaving (Figure 6).

4.2. Material and colour

Anni Albers treats materials and colours as integral, constituent parts of the textile structure. In her wall hanging *Black White Yellow* (1926 / 1965) (Figure 7), for example,

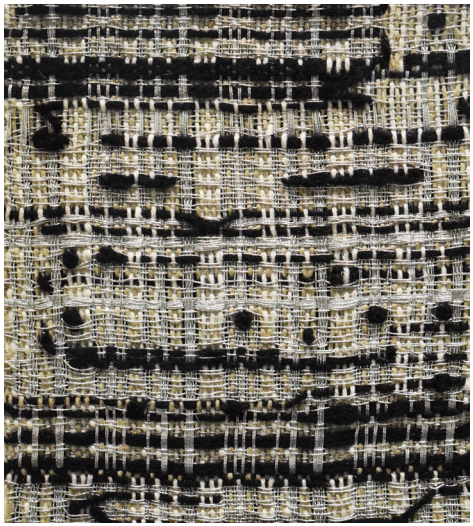

Figure 5. Above left, Anni Albers: Wall XII, 1984. Watercolour on screen print (28 ½ x 22 ½ in. / 72.4 x 57.2 cm). JAAF, 1994.12.6. (photo by Tim Nighswander / Imaging4Art) (© 2022 The Josef and Anni Albers Foundation / Vegap, Madrid).

Figure 6. Above right, Anni Albers: Haiku, 1961 (Detail). Cotton, hemp, metallic thread and wool (22 1/2 × 7 1/4 in. / 57.2 × 18.4 cm). The Josef and Anni Albers Foundation (JAAF), 1994.10.86. (photo by Constanze Sixt).

Figure 7. Above left, Anni Albers: Black White Yellow, 1926/1965. Re-woven by Gunta Stölzl Workshop. Mercerised cotton and silk (80 1/4 × 47 3/8 in. / 203.8 × 120.3 cm). Metropolitan Museum of Art, New York, 69.134. (© 2022 The Metropolitan Museum of Art / Art Resource / Scala, Florence).
Above right, Anni Albers: Black White Yellow, 1926/1965. Re-woven by Gunta Stölzl Workshop. Mercerised cotton and silk (80 1/4 × 47 3/8 in. / 203.8 × 120.3 cm). Detail. Metropolitan Museum of Art, New York, 69.134. (© 2022 The Metropolitan Museum of Art / Art Resource / Scala, Florence).

she used yarn of three basic colours, black, white, and yellow. Nevertheless, the work appears to be made of a wide palette of colours, which is due to the effects caused by the diverse sizes and the changing proximity of varying colour fields[2]. One could consider this method of manipulating perception part of an augmenting strategy, which achieves maximum effect while relying on a reduced set of elements. The same strategy applies to the deliberate use of materials with distinct light-reflecting qualities – silk, rayon, and linen. The effects produced in this way are additionally altered through the changing orientations of the respective threads within the piece, contingent on their varying use as warp or weft. Depending on the materials and orientation used, the quality of the interlacing of threads within the weaving produces different effects. Plain colour fields, for example, appear to be stiffer than those composed of several colours. Colour thus becomes a function of material quality and structure and vice versa.

Albers also experiments with new and unusual materials, such as lurex and cellophane, to investigate the textural, visual, and acoustic effects of the textile. Many of these experiments take place within the framework of her professional and commercial collaborations, such as her 30-year lasting alliance with Knoll furniture company's textile department. Comparing Albers's textile samples for Knoll with those of other invited artists, her designs stand out through their structural qualities, offering unconventional textures (Figure 8 and 9).

Other collaborations and commissions of Anni Albers refer to concrete spatial contexts, related to architecture. She developed room dividers (Figure 10 and 11) and even complete textile outfitting for buildings, such as for Walter Gropius' MIT Harvard Graduate Center dormitories (1949/50) or Philip Johnson's Rockefeller Guest House in

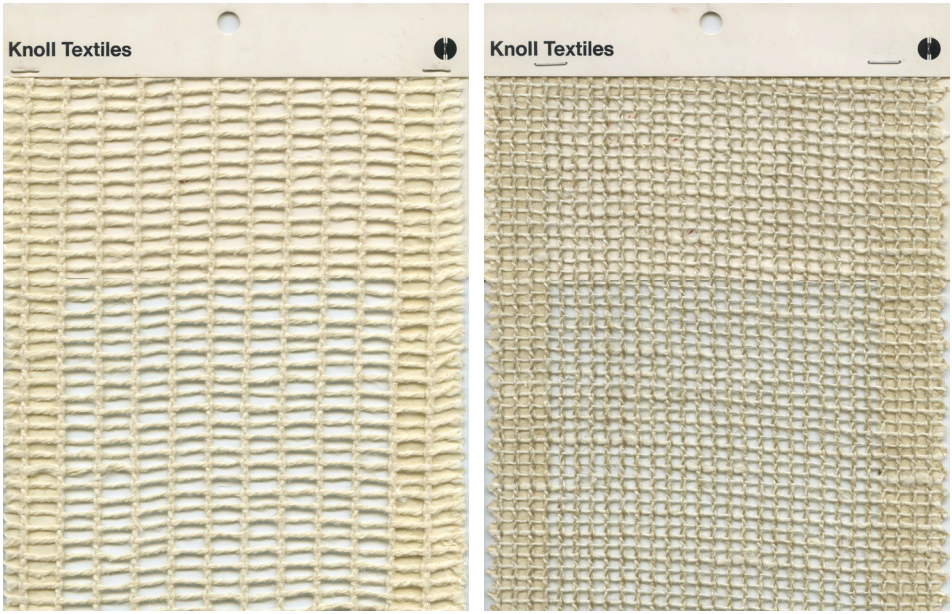

Figure 8. Above left, Anni Albers: Track, 1958. Designed for Knoll Textiles. Linen casement material. JAAF, 1994.13.1. (© 2022 The Josef and Anni Albers Foundation / Vegap, Madrid).

Figure 9. Above right, Anni Albers: Lattice, 1958. Designed for Knoll Textiles. Linen casement material. JAAF, 1994.13.3. (© 2022 The Josef and Anni Albers Foundation / Vegap, Madrid).

Figure 10. Above left, Installation view of the exhibition 'Anni Albers Textiles', 1949. The Museum of Modern Art Archives, IN421.4. (photo by Soichi Sunami) (© 2022. The Museum of Modern Art, New York / Scala, Florence).

Figure 11. Above right, Installation view of the exhibition 'Anni Albers Textiles', 1949. The Museum of Modern Art Archives, IN421.1. Detail view (photo by Soichi Sunami) (© 2022. The Museum of Modern Art, New York / Scala, Florence).

New York (1949/50). For the Guest House, which was used in parallel as an art collection display, Albers designed oscillating curtains with copper lurex threads that changed their appearance according to the incidence of light. Light and reflection also played an important role in her religious commissions, such as the ark panels at the Temple Emanu-El in Dallas (1957), which are entirely made from shimmering lurex. The woven elements in these examples are not decorative objects, but in modifying light and spatial conditions, exert a clearly architectural function.

As art historian Briony Fer points out, Albers's textiles are integral parts of the building and its surrounding:

[...] Albers's collaborations on architectural projects can be seen as speculative exercises on the role of textiles within different kinds of environment, as if Klee's notion of 'internal architecture' had now expanded to incorporate both domestic and public spaces not confined to the individual picture but as part of a lived environment (Fer, 2018, p. 37).

4.3. Woven landscape

Anni Albers's incessant exploration of weaving structures finds its expression in a technical evolution of her oeuvre throughout her career. In parallel, there is also substantial evolution, as she turned from utilitarian weavings toward *pictorial weavings*, a term coined

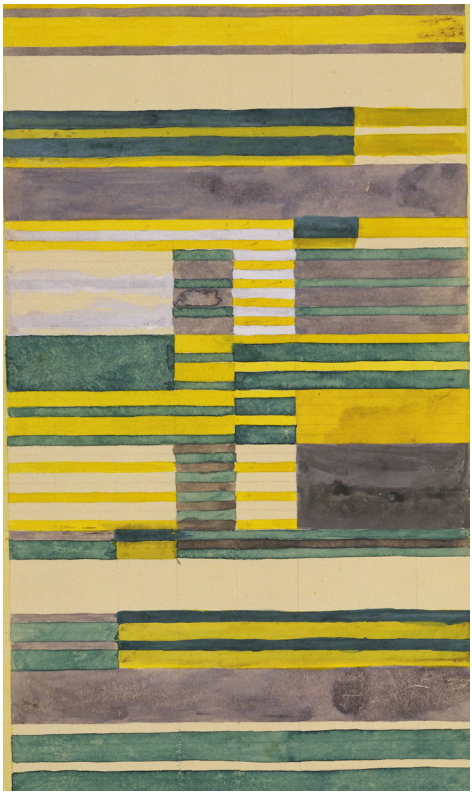

Figure 12. Above left, Anni Albers: Design for Wall Hanging, 1925. Gouache on paper 13 3/16 x 10 7/16' (33.5 x 26.5 cm). Museum of Modern Art, New York, 395.195 (© 2022. The Museum of Modern Art, New York / Scala, Florence).

Figure 13. Above right, aerial view of Garlstorf, Germany (Google Earth, 2021).

by Anni Albers just at the time of her incipient contact with Mesoamerican culture. In an interview with the Josef and Anni Albers Foundation's director, Nicholas Fox Weber, dating from 1974, Anni Albers explains: *I gave the name pictorial weavings to these pieces, which I considered pictorial in character, only to distinguish them from what usually is called tapestry, which is a term, which has to do with the technique of weaving* (Albers, 1974).

The *pictorial weavings* should not just be servant objects, but purely artistic entities, detached from any mundane function, paintings with thread.

Although the contents of Anni Albers's oeuvre may be considered abstract, already in her Bauhaus works one discovers analogies between the geometric forms and colours of her weavings on one side, and the agricultural and urban landscapes of her surroundings on the other. These analogies become even more concrete in the *pictorial weavings*, their titles explicitly referring to architecture and landscape, or even specific sites, such as *City* (1949), *Northwesterly* (1957), *Pasture* (1958), *South of the Border* (1958), *Tikal* (1958), *In the Landscape* (1958), *Intersecting* (1962), *Under Way* (1963), etc.

In Albers's work, motif and technique are closely related: Her early studies and wall hangings are mostly in plain weave, defined by linear elements, stripes, and rectangular surface layers, organized in strictly orthogonal patterns (Figure 12), visualising the analogies of the orthogonal weaving structure with orthogonally shaped agricultural areas and contemporary building structures (Figure 13).

Many of her pictorial weavings, in contrast, include more diverse forms and sophisticated techniques, such as the interweaving of additional threads and knots, giving the weavings a three-dimensional quality. These changes can be considered as adaptations to the newly discovered sinuous landscapes and meandering paths, or as allusions to traditional Meso- and South American objects, such as Quipu[3] (Figure 14 and 15).

In her *pictorial weavings*, Albers extensively develops the woven structure itself, advancing from a simple, compact, plain weave type, which she used for many of her early tapestries

Figure 14. Above left, Anni Albers: "Dotted" Weaving (Detail), 1959. Wool. 23 3/4 x 11 in. (60.3 x 27.9 cm). Museum of Fine Arts, Boston, 2012.1317 (photo by Constanze Sixt).
Figure 15. Above right, Quipu. Inca Culture, 15th century. Camelid fibres, 65 cm. (Museo Machu Picchu, Casa Concha, Cusco / Universidad Nacional de San Antonio Abad del Cusco. UNSAAC).

at the Bauhaus, toward a looser, more flexible weaving type, leno, or gauze weave, and often a supplementary weft type, a tendency that she followed through until the end of her weaving career in the late 1960s. This technical and formal evolution can be related to both the Alberses' experiences during their numerous journeys to Mexico, Chile, and Peru, their cultural and scenic discoveries of pre-Hispanic sites, many still in the process of excavation. The lively experiences, combined with an avid study of the newly discovered historical objects and constructions, made an impact on Anni Albers's weaving. As the textile artists and scholars Paulina Brugnoli and Soledad Hoces de la Guardia observe: *Critical of the European tradition, she [Anni Albers] identified the net potential of weaving for communication and drew from the vast knowledge and skill of the Andean weavers to make the textile a representational field* (Brugnoli and Hoces de la Guardia, 2007, p. 68).

One of the central pieces that mark Albers's paradigm shift is *Monte Albán* (Figure 16), dating from 1936.

Brenda Danilowitz, chief curator of the Josef and Anni Albers Foundation, calls Albers's experience of visiting the archaeological site of Monte Albán in Oaxaca, Mexico, an "epiphany" (Danilowitz, 2010). She explains that in her pictorial weaving with the

Figure 16. Above left, Anni Albers: Monte Albán, 1936. Silk, linen, wool, 57 1/2 x 44 1/8 in. / 146 x 112 cm. Harvard Art Museums / Busch-Reisinger Museum, BR81.5. (© The Josef and Anni Albers Foundation / Artists Rights Society (ARS), New York. Photo © President and Fellows of Harvard College).

Figure 17. Above right, Anni Albers, Monte Albán, 1939. Gelatin silver print. JAAF, 1976.7.1397. (photo by Josef Albers) (© 2022 The Josef and Anni Albers Foundation / Vegap, Madrid).

referential title *Monte Albán* Albers *had broken out of that strict geometry, and for the first time in her weaving had used these floating threads to describe the surface […] so you can see that kind of emerging out of that geometric background, all these images of the landscape sort of ghostly coming through the structure and interrupting the strict formality and the geometry of the landscape of the weaving with another geometry, which is the geometry of the architecture in that landscape* (Danilowitz, 2020).

Virginia Gardner Troy further describes how *in Monte Alban she [Anni Albers] used the floating weft thread to form layers that refer to the ascending and descending steps, the flat plazas, and the underground chambers of the ancient site. In addition, she arranged the horizontal and vertical stripes of the plain weave structure so that they interlock like masonry walls* (Gardner Troy, 2012, p. 119).

Adding to the formal shifts is the extremely reduced colour palette in Albers's weavings around that time, also evident in *Monte Albán*'s coeval, *Ancient Writing* (1936), which shows that Albers's interest rather lay in accentuating the depicted forms, may it be of the archaeological sites or of patterns and text. The reduced chromatic aesthetic is also in line with the black-and-white photographs Josef Albers took during the couple's travels and which may have served as a basis or memory aid for Anni's posterior weavings.

Monte Albán can be considered a compendium of complementing impressions, a woven synthesis, which encompasses different views of the same scene, aerial view, section, and elevation, even details, such as the shadows of building terraces, clearly marked in Josef Albers's photographs (Figure 17). All these elements complement one another to coalesce into a misty image that is at the same time both a technical description and an impressionist depiction.

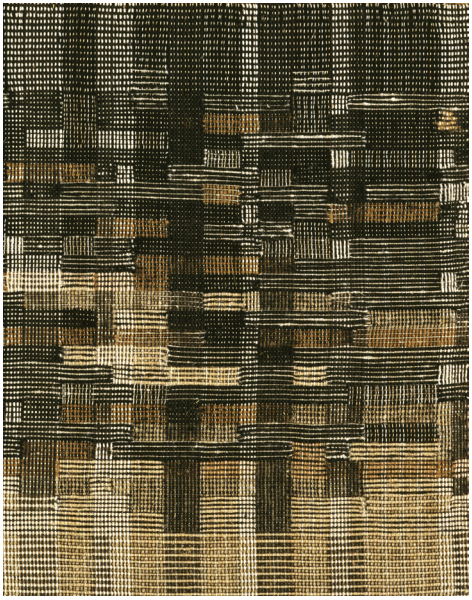

Figure 18. Above left, Anni Albers: Untitled (Tapestry), 1948 (Detail). Linen and cotton, 16 1/2 x 18 3/4" (41.9 x 47.6 cm). Museum of Modern Art, New York, 200.1950 (© 2022 The Museum of Modern Art, New York / Scala, Florence).

Figure 19. Above right, Salinas de Maras, Cusco, Peru, 2008 (Detail) (photo by Paul Williams).

Spatial weaving and structural continuity

The evolution and emphasis of the spatial character of her *pictorial weavings* become more evident as Albers progressively introduces irregularities, additional threads, knots, overlapping elements, openings. She thus creates three dimensional objects, such as *Untitled* (1948) (Figure 18), that not only allude to overlapping layers of urban or agricultural landscapes (Figure 19), but themselves are made of several woven and stitched layers.

As Karis Medina, associate curator at the Josef and Anni Albers Foundation, has discovered, the same warp, or at least, the same warp type, served Anni Albers for various works: *Untitled*, for example, is not a stand-alone piece, but belongs to a larger family of weavings, which also includes *City* (1949) and *Black-White-Gold I* and *II* (both 1950), and is apparently based on one of Anni Albers's display fabric samples (Medina, 2020). These works can be considered experiments of possible spatial variations, parting from one common structural ground. This procedure is quite unusual, especially considering how meticulously Anni Albers would plan every weaving, producing numerous drafts and drawings of the envisioned design and adapting the structure and material according to the desired outcome, as is documented for her Bauhaus weavings.

Curiously, in contrast to Albers's earlier works of her Bauhaus time on one side, and her graphic work from the late 1960s on the other, and according to Medina, there are no study drawings of her *pictorial weavings* up to this day. This means that either Anni Albers destroyed them, or she consciously wanted to start each *pictorial weaving* without a clear idea of the outcome of the work, with only a loose basic structure that allowed her to freely develop her ideas during the weaving process. This stance would be completely in line with the way of weaving of her ancient masters, Peruvian weavers, to whom she dedicated *On Weaving (1965)*, her seminal compendium of weaving techniques that includes textiles from Albers's collection of Pre-Columbian art along with pieces of her own work, as well as that of contemporary artists. The Andean weavers apparently did not have access to any written or drawn weaving instructions. However, they are thought to have invented new models in direct contact with the material, through their practical mastery and creativity.

This explanation for not making preliminary studies or diagrams before weaving could apply to Anni Albers as an admirer of ancient Andean weaving culture, even more so considering her augmenting knowledge and experience. Against this backdrop, it also seems logical that she would have progressively reduced the number of warp threads and expanded the distance between them in later works: As her experience grew, she needed less and less structural backing. In this sense, Anni would also fulfil her idea of designing in "direct experience of a medium": *The material itself is full of suggestions for its use if we approach it unaggressively, receptively. It is a source of unending stimulation and advises us in the most unexpected manner.* (Albers, 1961, p. 6).

Giving "the object to be a chance to design itself" (Albers, 1958), she thus seems to explore and prove her own theories to be right.

5. KNOWLEDGE TRANSFER

A key issue for Anni Albers was knowledge transfer, which she pursued throughout her multi-disciplinary work in a combination of weaving, printing, writing, studying, teaching, travelling, and collecting. While demonstrating a strong perceptiveness for ancient, non-European cultures, she understood all these activities as future oriented, aimed at achieving a symbiosis of traditional techniques and industrial production, manual craft, and machine power.

Intermediating past and future – continuity of creative energy

While Anni Albers's lifelong interest in pre-Hispanic, especially Mesoamerican and Andean cultures may seem astonishing for a vanguard artist, it is the logical consequence of her particular concept of progress. As she states in *On Weaving*, *For those of us concerned in our work with the adventure of search, going back to beginnings is seeing ourselves mirrored in others' work, not in the result but in the process* (Albers, 2017, p. 34).

The study of ancient textiles thus nurtures or vindicates her experimental work and her emphasis on the direct, manual contact with materials, with the objective to find new technical solutions. In a magazine article titled *Constructing Textiles*, Anni Albers specifies that retrospection and progress do not exclude each other, but are interdependent:

Retrospection, though suspected of being the preoccupation of conservators, can also serve as an active agent. As an antidote for an elated sense of progress that seizes us from time to time, it shows our achievements in proper proportion and makes it possible to observe where we have advanced, where not, and where, perhaps, we have even retrogressed. It thus can suggest new areas for experimentation (Albers, 1946, p.22).

Anni Albers, like her partner Josef, had an extreme sensitivity towards the topicality of pre-Hispanic artistic expressions, so much so, that both felt a direct relation to pre-Hispanic artists and their works. "See, we are not alone after all." (Danilowitz, 2007, p.17) is their declaration on a visit of the textile collection of the Museum of Archaeology and Anthropology in Lima. This immediate sense of closeness or even identification was favoured by the couples' commitment to abstract art, as Brenda Danilowitz notices:

It seemed to be a world where there was a continuity in art, and not only art, but abstract art, and these were the forms they saw, these really powerful geometric forms, which they saw in the architecture, in the textiles, in the weaving, and that completely captivated them (Danilowitz, 2020).

It might have been a moment that fits Anni Albers's description in the aforementioned interview with Nicholas Fox Weber: "Something that widens your feeling of being in the world" (Albers, 1974).

Their deep impression by geometric elements of pre-Hispanic buildings and objects left its mark in both Josef and Anni Albers's own pictorial language. For decades, Anni Albers repeatedly works on one of those elements, the triangle, a basic component of traditional patterns (Figure 20), which she uses in drawings, wall hangings, and especially in her

Figure 20. Above left, Tapestry. Peru, 1300-1536. Cotton, 10 13/16 × 9 1/16 in. (27.5 × 23 cm). The Harriet Engelhardt Memorial Collection of Textiles, 1958.13.97. (Yale University Art Gallery).

Figure 21. Above right, Anni Albers: Study for Camino Real, 1967. Gouache and diazotype on paper, 17 1/2 x 16 in. (44.5 x 40.6 cm). JAAF, 1994.10.22. (photo by Tim Nighswander / Imaging4Art) (© 2022 The Josef and Anni Albers Foundation / Vegap, Madrid).

prints. She seems to search for the right expression of this form with different techniques, in different media. Indeed, many of her painted studies seem to be textiles (Figure 21).

6. INTERDISCIPLINARY AND INTERCULTURAL RESEARCH

The studies of the triangle and other traditional graphic elements in various techniques reveal Anni Albers's interdisciplinary and experimental approach to art and design:

She was quite surprised herself at how much she was inspired in her weaving by the forms of the architecture, and also the ceramics. I think it was really ways of translating some of those patterns or those ideas of ornament and pattern, incorporating those into the weavings. […] this was

Figure 22. Above left, Anni Albers and local weavers in Santo Tomás, Oaxaca, Mexico, ca. 1956. (photo negative by Josef Albers). JAAF 1976.19.12878 (© 2022 The Josef and Anni Albers Foundation / Vegap, Madrid).

Figure 23. Above middle, Students using backstrap looms at Studies Building railing. Black Mountain College, 1945. (photo by John Harvey Campbell) (Courtesy of the Western Regional Archives, State Archives of North Carolina).

Figure 24. Above right, Anni Albers card weaving at Black Mountain College. (Courtesy of the Western Regional Archives, State Archives of North Carolina).

exactly the sort of textual exercise she would give to her students. Here is a design: How do you create that, not out of stone, but in weaving (Danilowitz, 2020).

To fully understand weavings and their techniques, Anni Albers explored the origins of the most exquisite works, visiting pre-Hispanic sites in Meso- and South America. She studied the exhibits in local museums and got into contact with weavers (Figure 22) and their tools (Figure 24), subsequently introducing the basic weaving tool, the traditional Pacific back-strap loom, to her students upon her return to Black Mountain College (Figure 23). Albers highlights that "the very simplicity of the tool, rather than being a hindrance, on the contrary, has permitted an infinite variety of weaves" (Albers, 1961, p. 67).

Anni and Josef Albers could be considered catalysts of the past, as they "saw themselves mirrored in these processes, these creative works of the past. They didn't see a distinction, […], it was really learning from the past and bringing the past into the present." (Danilowitz,

Figure 25. Above left, Fragment. Andes, Chancay, 1000–1400. Wool (7 ¾ x 12 ½ in. / 19.7 x 31.8 cm). The Harriet Engelhardt Collection, 1958.13.4 (Yale University Art Gallery).
Figure 26. Above right, Fragment. Andes, Chancay, 1100–1300. Wool, 7 1/4 x 9 1/2 in. (24.1 x 18.4 cm). JAAF, 1994-16-92 (The Josef and Anni Albers Foundation).

2020). This fact can be illustrated by the collection activity of Anni Albers, which included Andean, mainly pre-Hispanic ceramics and textiles for her private collection and textiles for *The Harriet Engelhardt Memorial Collection of Textiles,* Anni Albers set up as a teaching collection for Black Mountain College in 1947. Albers collected not only complete garments but also many fragments, some of which she cut and unravelled (Figure 25 and 26) in pursuance of fully understanding the techniques applied to them. The motive for this act, which might seem outrageous to some scholars, could be found in the quest to learn, applying one's knowledge in future activities. As Anni Albers states:

I find it intriguing to look at early attempts in history, not for the sake of historical interest, that is, of looking back, but for the sake of looking forward from a point way back in time in order to experience vicariously the exhilaration of accomplishment reached step by step. This is learning (Albers, 2017, p. 34).

7. THE RECIPROCITY OF LEARNING AND TEACHING – EXPERIMENTAL RESEARCH

To Anni Albers, learning and teaching were fundamentally experimental activities, which

complemented each other. She was literally both teacher and student, constantly striving to amplify her theoretical and practical knowledge. When Albers started directing the weaving workshop at Black Mountain College in 1933, she had to content herself with provisional premises and a lack of equipment, as planning and construction of the Campus proper took several years, and it was not ready until 1942. From the beginning, she had to improvise the teaching activities with her students and provide low-cost teaching equipment. The experiments she executed with students may be considered the logical consequence of those external restrictions, but they also reflect her creative attitude – to create from zero. In several interviews she reports how she told students to imagine they were in the Peruvian desert and had to invent woven structures out of the materials they found in their immediate surroundings (Albers, 1968). In another exercise, students were asked to create weave-like structures with unusual, random material, such as seeds, grass, paper, or metal strips, which they organised in striations, simulating surfaces and forming tectonic levels (Figure 27 and 28).

These pre-textile studies introduced students to structural topics, as "a certain system is necessary to make it look like a weaving, a certain horizontal / vertical direction" (Albers, 1974). After leaving Black Mountain College in 1949 to follow her husband, who in 1950 was appointed Chair of the Department of Design at Yale University, Anni Albers took classes with George Kubler, a specialist in pre-Columbian art and professor of art history at Yale. In his university course, she elaborated a scholarly work titled: *A Structural Process in Weaving. A Suggestion Applied to a Weaving Problem of a Remote Past and Applicable Today* (1952). As the title of this text, which is published in Anni Albers's compendium *On Designing* (1959), indicates, she approaches a topic of ancient weaving – the conundrum of textiles whose width exceeds that of the known loom types – in the interest of gaining knowledge, which could then be applied in contemporary weaving.

Again, Anni Albers is looking at the past to provide for progress in the future. She took her endeavour very seriously, maintaining, as Albers and textile scholar Virginia Gardner Troy brought to light, correspondence with Junius Bird, a specialist in Andean textiles at the American Museum of Natural History, in order to revise her thesis (Gardner Troy,

2012, p.147). She even returned to university as an auditor, when Bird was invited to lecture at Yale.

8. APPROPRIATION VS. TRANSFER

What is remarkable in the relation of Anni and Josef Albers with Meso- and South American culture is that what at the beginning seemed like a transient, 'colonial' caprice, an excitement of discovering new excavation sites of ancient architecture and purchasing antique objects, can hardly be considered an act of simple appropriation, as it turned out to be a lifelong commitment and engagement, based on the urge to transfer knowledge. Consequently, the Alberses donated Anni's collection of textiles and the

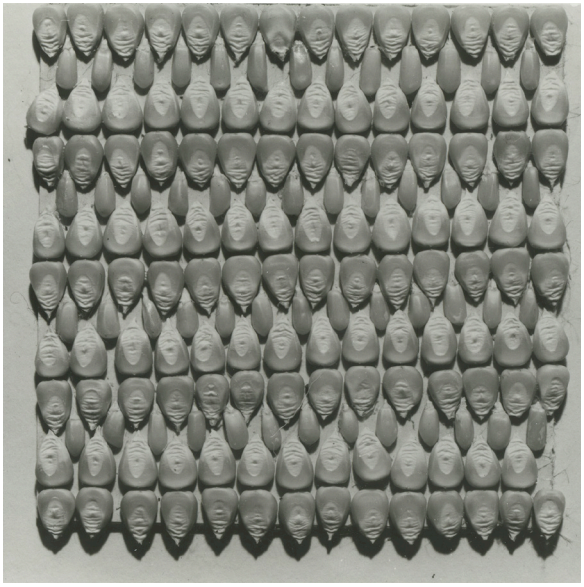

Figure 27. Above left, Anni Albers: Study made with corn kernels, late 1930s. Gelatin Silver print, 8 x 10 in. (20.3 x 25.4 cm) (photo by Todd Webb) (© Todd Webb Archive).

Figure 28. Above right, Anni Albers: Study in textile appearance through imitation in corrugated paper, n.d. Ink and gouache on corrugated paper mounted on cardboard. JAAF 1994.18.3. (photo by Tim Nighswander / Imaging4Art) (© 2022 The Josef and Anni Albers Foundation / Vegap, Madrid).

couple's common collection of pre-Hispanic art, altogether more than 1400 objects, to Yale University's Peabody Museum of Natural History; Yale University also preserves The Harriet Engelhardt Memorial Collection in its Art Gallery. In 1973, the then called Josef Albers Foundation (today the Josef and Anni Albers Foundation) launched a Traveling Fellowship for scholarly research involving pre-Columbian art and artefacts of Mesoamerica, Central America, and South America, which is still awarded today by Yale University. The Foundation also pursues to follow the Alberses' intercultural endeavour, providing for artist residencies at two outposts of the Foundation in Senegal and Ireland.

Through her writings and teaching activity, Anni Albers exerted a strong influence on professionals in the field of textiles and fibre art, such as Sheila Hicks, a former student of both Josef and Anni Albers, who trespassed weavings' physical and spatial limits and developed numerous three-dimensional structures, including for exteriors, or Ruth Asawa, who created a wide range of wire sculptures.

Promoting ancient textile culture through her reception and adaptation, Anni Albers also left a mark on the cultural reassessment of ancient textiles in South America. As textile artists and scholars Paulina Brugnoli and Soledad Hoces de la Guardia note:

Andean textile art and its rich legacy began to reach out from its continent of origin to Europe in the early twentieth-century. In Germany it stimulated a large number of German artists at a crucial time of cultural and technological development, social change, and insecurity. In an updated form, this legacy later returned to Latin America, where generations of artists and designers - not always aware of its remote pre Columbian origins – re-adopted its concepts. […] The cultural achievements which in Latin America have always had negative connotations because they were 'Indian', were understood by the Bauhaus artists in Germany, who made them their own. They stressed the excellence of Andean textile art and thus initiated a new process of self-evaluation (Brugnoli and Hoces de la Guardia, 2007, pp.61-62).

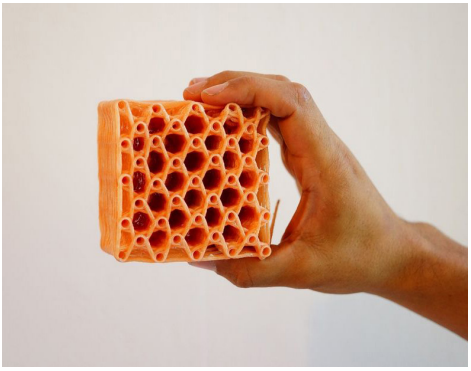

Figure 29. Above left, Oluwaseyi Sosanya: 3D weaving machine (Dezeen, 2014).
Figure 30. Above right, Oluwaseyi Sosanya: Auxetic sample (photo by Guillaume Couche) (Peters, Drewes, 2019).

9. CONTEMPORARY WOVEN STRUCTURES

Remarkably, Anni Albers's life-long exploration of ancient Meso- and South American art ultimately contributed to the radical contemporaneity of her own oeuvre and ideas. The study of the past permitted her to develop trailblazing ideas, beyond preserving or passing on artisanal traditions, drawing on craft as a means for carving out and transmitting the essential quality of weaving as a space-creating, future-oriented activity.

Although Anni Albers herself apparently struggled to unite disciplines and concepts, distinguishing in her work between utilitarian objects and artistic expressions, between weaving and printmaking, her importance for weavers and weaving today lies in her invocation to "blur the lines between art, architecture and craft"[4]. Her legacy is the encouragement of her students and followers to explore and bring forward new weaving possibilities, as "the vast field of weaving itself is open today for experimentation" (Albers, 1946, p. 23). Envisioning the future, she advocated for integrating handweaving into the industrialised weaving process, highlighting its importance in prototyping, as a method for progressing in weaving technique and textile construction: *[…] For just as silk, a soft material by nature, can become stiff in the form of taffeta through a certain thread construction, and cellophane, a stiff material, can be made soft in another, so an endless number of constructional effects can produce new fabrics* (Albers, 1946, p. 26).

Figure 31. Above left, Achim Menges with Moritz Dörstelmann, Jan Knippers, Thomas Auer et al.: Elytra Filament Pavilion. V&A Victoria and Albert Museum, London, 2016. (photo by Naaro: Freya Najade and Marcela Spadaro) (Menges, 2016).

Figure 32. Above right, Achim Menges with Moritz Dörstelmann, Jan Knippers, Thomas Auer et al.: Elytra Filament Pavilion. V&A Victoria and Albert Museum, London, 2016. Detail view (photo by Naaro: Freya Najade and Marcela Spadaro) (Menges, 2016).

In relation to weaving's connection to architecture and spatial design, Anni Albers states: *The essentially structural principles that relate the work of building and weaving could form the basis of a new understanding between the architect and the inventive weaver. New uses of fabrics and new fabrics could result from a collaboration; and textiles, so often no more than an after-thought in planning might take place again as a contributing thought* (Albers, 1957, p. 40).

Her prophecy is being fulfilled, as today, progress in architecture is closely related to lightweight structures, and textiles therefore play an essential role in spatial design, whether as assisting elements, such as fibres for the reinforcement of concrete replacing heavier steel meshes, or as three-dimensional fibre structures, produced by 3D looms in three-dimensional weaving techniques (Figure 29 and 30).

Light and flexible structures are at the forefront of a new *pliable architecture*, a term coined by Dutch textile artist Hella Jongerius, certainly with the idea of developing further Albers's *pliable plane*. Current explorations of biological fibre systems and biomimicry techniques also show that fibre structures may be produced without looms, through new tools and processes, such as robotic winding, a technique that was employed by the research team around architect Achim Menges for the Elytra Filament Pavilion at

the Victoria and Albert Museum (Figure 31 and 32). This project optimises, just as the exoskeleton of a flying beagle, which lent it its name, the load bearing functions of each element of the total compound.

10. CONCLUSION – OUTLOOK

As this article highlights, Anni Albers heralds a new era for weaving. With her thorough examination of and speculation on the material and constructive past of textile culture, she opens weaving's path towards the future: fibres and their "intricate interlocking" (Albers, 1946, p. 23) are ultimately becoming the material and structure of the future. In 1981, Anni Albers was awarded the American Craft Council Gold Medal, in recognition of her "uncompromising excellence" (Larsen, 1981). In his presentation at the awards ceremony, the Council's president, textile artist Jack Lenor Larson wanted to praise her as visionary, but Albers asked for a change: "As to name calling, instead of visionary, I suggest experimenter." (Fox Weber & Tabatabai Asbaghi, 1999, p. 178). Today, her suggestion turns out to be 'experimenter, and therefore visionary'.

Endnotes

1 The expression *continuous logic* is extracted from a remark by the curator Glenn Adamson at the book launch and design conversation on the occasion of the reedition of *On Weaving*, where he points out that textiles and architecture both have a continuous logic, it only manifests itself in different scales. (The Josef and Anni Albers Foundation, 2017).

2 These experiments can be regarded in close proximity to Josef Albers's relational colour theory, published in: *Interaction of Color*, New Haven: Yale University Press, 1963.

3 '*Quipu: Quechua khipu* ("knot") […], an accounting apparatus used by Andean peoples from the 2500 BCE […], and consisting of a long textile cord […] with a varying number of pendant cords. […] Experts believe that—in addition to the various knots placed there—a cord's composition, ply, length, end treatment, and colour, as well as spacing between cords, were all significant factors in a *quipu's* use and meaning. The type of knot tied and its position on the pendant relative to the top cord usually records a numeric value.[…] During the Inca period, quipus were created and maintained as historical records […]" (Encyclopaedia Britannica, 2022).

4 MoMA Museum of Modern Art Curator Juliet Kinchin's remark about textile artist Aurèlia Muñoz on the occasion of the exhibition *Taking a Thread for a Walk*. (MoMA, New York, Oct 21, 2019 – Jan 10, 2021) relates to a tendency, which may have been informed by Anni Albers's interdisciplinary endeavours (Kinchin, Custodio, 2019).

Bibliography

Albers, A. (1946) Constructing Textiles, *Design* 47(8), pp. 21–26. Republished in *On Designing*, 1959.

Albers, A. (1957) The Pliable Plane; Textiles in Architecture, *Perspecta* 4, pp. 36–41. Republished in *On Designing*, 1959.

Albers, A. (1958) Designing as Visual Organization [Lecture]. New Haven: Yale University. Available at: https://www.albersfoundation.org/alberses/teaching/anni-albers/designing-as-visual-organization (Accessed 1 October 2021).

Albers, A. (1961) *On Designing*. 2nd edition. Middletown: Wesleyan University Press.

Albers, A. (1968) Oral history interview with Anni Albers, 1968 July 5. Interview by Sevim Fesci, Washington D.C: Archives of American Art, Smithsonian Institution. Available at: https://www.aaa.si.edu/collections/interviews/oral-history-interview-anni-albers-12134 (Accessed 2 October 2021).

Albers, A. (1974) Anni Albers. Interview by Nicholas Fox Weber. The Josef and Anni Albers Foundation. Excerpts available at: https://www.albersfoundation.org/videos/anni-albers-experiments (Accessed 2 October 2021).

Albers, A. (2017) *On Weaving*. Expanded edition. Princeton: Princeton University Press.

Brugnoli, P.; Hoces de la Guardia, S. (2007) Anni Albers and Her Great Teachers, the Andean Weavers, in Danilowitz, B.; Liesbrock, H. (eds.) *Anni and Josef Albers: Latin American Journeys*. Ostfildern: Hatje Cantz, pp. 61–71.

Danilowitz, B. (2007) 'We are not alone.' Anni and Josef Albers in Latin America, in Danilowitz, B.; Liesbrock, H. (eds.) *Anni and Josef Albers: Latin American Journeys.* Ostfildern: Hatje Cantz, pp. 17–31.

Danilowitz, B. (2010) Josef Albers: From North Carolina to Mexico and Beyond (Lecture). Newark : Newark Museum, 10 April. Available at: https://vimeo.com/143633514 (Accessed 16 October 2021).

Danilowitz, B. (2020) Panel: Anni Albers en México (online panel discussion). Mexico City: Fundación Jumex, 11 November 2020. Available at: https://vimeo.com/478621980#_=_(Accessed 2 October 2021).

Dezeen (2014). 3D weaving can 'reduce cost and improve structural integrity' in architecture. [online] Vimeo. Available at: https://vimeo.com/102046444 (Accessed 2 October 2021).

Encyclopaedia Britannica. (2022). Quipu | Incan counting tool. [online] Available at: https://www.britannica.com/technology/quipu. (Accessed 2 Ocotber 2022).

Fer, B. (2018) Close to the Stuff the World is Made of: Weaving as a Modern Project, in Coxon, A.; Fer, B.; Müller-Schareck, M. (eds.), *Anni Albers*. London: Tate Publishing, pp. 20–41.

Fox Weber, N.; Tabatabai Asbaghi, P. (1999) *Anni Albers*. New York: Guggenheim Museum Publications.

Gardner Troy, V. (2002) *Anni Albers and Ancient American Textiles: From Bauhaus to Black Mountain.* Burlington, Vermont: Ashgate.

Kinchin, J.; Custodio, I. (2019). Aurèlia Muñoz's Águila Beige (Brown Eagle), MoMA Magazine [online]. The Museum of Modern Art. Available at: https://www.moma.org/magazine/articles/209 (Accessed 2 October 2021).

Larsen, J. L. (1981) Presentation Speech (draft), 11 September 1981. Minneapolis: American Craft Council.

Medina, K. (2020) Warp Families. The common threads of Anni Albers's Pictorial Weavings (online lecture). New York Textile Month, New York, 18 September 2020. Available at: https://www.youtube.com/watch?v=YY3AdeUIGYA (Accessed 2 October 2021).

Menges, A. (2016) Elytra Filament Pavilion, Victoria & Albert Museum. Available at: http://www.achimmenges.net/?p=5922 (Accessed 21 October 2021).

Peters, S.; Drewes, D. (2019) *Materials in Progress: Innovations for Designers and Architects.* Berlin/Boston: Birkhäuser.

Reynolds-Kaye, J. (2017) Making Mesoamerica Modern: Anni and Josef Albers as Collectors of Ancient American Art, in Reynolds-Kaye, J., *Small-Great Objects. Anni and Josef Albers in the Americas.* New Haven: Yale University Press.

Salinas, Ó. (2019). La otredad convertida en lo propio. Anni Albers y su relación con Latinoamérica [lecture]. Ciclo Homenaje a Anni Albers, 8º Encuentro BID de Centros de Enseñanza de Diseño, Central de Diseño, Barcelona, 21 November 2019. Available at: https://www.youtube.com/watch?v=TnFZYrxLQOM (Accessed 2 October 2021).

Semper, G. (2004) *Style in the Technical and Tectonic Arts; or, Practical Aesthetics.* Translation by Harry Francis Mallgrave and Michael Robinson. Los Angeles: Getty Research Institute.

The Josef and Anni Albers Foundation (2017) Anni Albers *On Weaving* Book Launch and Design Conversation (panel discussion). New York: Vitra Pop-Up, 19 September 2017. Available at: https://vimeo.com/239858253 (Accessed 9 October 2021).

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