


Recovery of Biocultural Memory Through Environmental Education in the Community of Santa Cruz Ayotuxco

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ABSTRACT

The Mexican indigenous communities are characterized by the natural, historical, and cultural contribution they represent; this is the case of the town of Santa Cruz Ayotuxco, being part of the Otomi community. Sadly, their indigenous identity and conformation, have been fading away, which has generated migration and the shedding of their traditions. The community has been forgetting their traditional practices, as well as their original language and sense of belonging. Today, its inhabitants have adopted indifference and disinterest in the place where they live. Therefore, there is an evident environmental deterioration, complex urbanization and, what is most worrying, vulnerability and dispossession of their territory.

The present work intends to recover, value, and spread some ancestral knowledge and practices of the Otomi community, having direct contact with the elders of the town to motivate and connect with the younger generations. The main objective is to get the youth involved in the improvement of the land, their place of origin, and visualize the problems that arise, as well as revive the language and cultural traditions of the people.

That is why, through the work with the elderly and the formation of focus groups with other members of the community, the recovery and improvement the human-nature relationship could be achieved. A change could be expected in the attitude and values of the inhabitants that contribute to the cultural and social ties, as well as the sense of belonging with their environment.

Keywords: social problems, environmental deterioration, environmental education, sense of belonging, human-nature relations

INTRODUCTION

Problem Statement

The Santa Cruz Ayotuxco community belongs to Huixquilucan Municipality in the state of Mexico; the place is characterized by its natural wealth and cultural history. The name Ayotuxco in Nahuatl means *ayotochtli=armadillo* and *co=place*; "Place of Armadillos". The name of the place considers this animal species to be abundant and characteristic of the area. This territory has a great landscape wealth, most of it formed by a diverse biological diversity, composed by flora and fauna of high environmental importance, which is, unfortunately, at risk (Ceballos et al., 2009).

Despite of being part of the Otomi community, the town of Santa Cruz Ayotuxco, over time has been losing part of the characteristics that represents this important indigenous group, leaving aside the Otomi identity and losing the sense of community. The migration of its inhabitants, the lack of interest in continuing to preserve the traditions, the

devaluation of the land and the almost extinct Otomi language among the inhabitants, in addition to complete lack of interest in the place of origin, are part of the problem it presents.

In addition to the fact that over the years political clientelism has been present, where political candidates arrive with unfulfilled promises and almost useless incentives for the residents, such as food packages and cash. These actions have generated inactivity, less participation and almost null organization among the inhabitants, as well as lack of interest and no action in the face of community problems. Thus, the territory presents environmental deterioration, landscape modification, complex urbanization, and degradation. It is considered a rural area, but real estate developers are continuously working on projects, without consulting the inhabitants, and there is also clandestine logging and extraction of flora and fauna (which are illegal activities).

This all leads to a territory violation, land dispossession, and expansion of private roads (an example of this) the construction of highways that cross the town. Authorities have implemented different projects without considering the

opinion of the inhabitants but are always justified by arguing the benefits for the community (La Jornada, 2019).

Justification

The disconnection of the inhabitants with their place of origin leads to disinterest and indifference towards the environment, leaving aside the problems that it may suffer, which results in social and environmental complications. Therefore, it is necessary to take measures and actions that may give some visibility to the problems faced by the community of Santa Cruz Ayotuxco. The actual inhabitants need to get involved in finding the solutions to their problems to improve their relationship with the territory and establish links, related to their rich cultural heritage.

Research Questions

1. What are the reasons why the community of Santa Cruz Ayotuxco has been losing the Otomi identity, as well as the traditional knowledge and practices of the territory?
2. How can the sense of belonging to the community and its values be recovered through environmental education?

General Goal

The research seeks to recover part of the ancestral knowledge of the Otomi community, as well as some traditional practices, which could involve the inhabitants of Santa Cruz Ayotuxco in actions that may improve their relationship with the territory; and establish links so they may envision the social and environmental problems that they face.

The recovery and revaluation of the historical traditions could provide a wide range of ancestral knowledge and allow individuals to gain new information about social structure and elements of nature, as well as recognize the relationships that are established between them, the processes or dynamics and their practical potential. Traditional knowledge goes beyond what is recognized (Toledo, 2009).

This will empower the cultural values and life of the community, which needs to recognize the past, using present elements to establish a positive dynamic relationship. Therefore, this research aims to provide a methodology based on environmental education that strengthens the values and attitudes of the inhabitants of the community, that may contribute to establish what is necessary and significant for the people and may rescue ancestral knowledge in the search for identity. All this may create a sense of belonging and strong ties with the land that may be positive for the environment.

RESEARCH BACKGROUND

Lost Identity of the Otomi Community in Santa Cruz Ayotuxco, in the Face of Western Thought

Mexico is a multifaceted country with a great flora and fauna diversity, but in addition, it carries with it the attractive of an important cultural component that enriches it and makes it unique. In its structure it houses the cultural heritage of a community with tangible and intangible goods. Therefore, the

cultural heritage of each town is made up of the cultural objects that prevail, either with their original meaning or as part of their historical memory (Batalla, 2004).

These cultural objects have great relevance, because through knowledge and different ways of seeing the world, alternatives can be developed in the face of the current environmental and civilization crisis.

Mexico is not a culturally unified society; on the contrary, it is characterized by differences and inequalities. Mexican society has its historical origin in the coexistence, for millennia, of different communities that inhabited it and prevail through surviving cultures in the national territory. The historical past of the country is well documented in the face of the subjugation and colonial domination, as well as invaders who arrived in these lands just over 529 years ago, this is five centuries; "it is known that many people around the country were prey to the conquerors subjugation, disfiguring their roots and identities" (Romero, 2002).

Despite the five centuries of a colonial regime, they did not eliminate cultural differences in the new Hispanic society. The conquerors altered many cultural contents, both in indigenous cultures and in the Creole variant of Western culture. Despite this misfortune, the people had the capacity to adapt, maintaining in a certain way the logic of their previous organization, following their beliefs and traditions. They subsisted as constituted towns or family groups, unified by a territory (Alvares, 2011).

Such is the case of Santa Cruz Ayotuxco community, which like other Mexican territories, suffered the atrocity of the conquerors when they were stripped off from their lands, and their Otomi indigenous identity, forced to radically change their customs; being reduced at first by colonizers, passing into the hands of the Creoles and later of "mestizos", who adopted the colonizing mentality of their predecessors. For centuries, they tried to eradicate various indigenous practices and customs, wanting to exterminate them, prohibiting their forms of worship, and forcing the community to adopt the Catholic religion (AHMH, 1871).

As Batalla (2004) mentions,

"an exclusionary dominant culture was generated, which was not part of the cultural heritage, and coexisted in opposition to the culture of the dominated groups."

So, over time, a mixture of Western culture and indigenous practices was founded, which incorporated elements of Western origin by imposition and tried to unify it with the cultural heritage.

The Otomi community went through an evangelization process, but continued to maintain a social system, in which characters of the traditional indigenous social organization prevailed. They experimented a social organization that brought together the members of the community around religiosity (Korsbaek, 1996). In addition to the prevalence of community work, where cyclical activities were developed by individuals or families for agricultural processes, there was also a constant transmission of information and therefore a communitarianism in the knowledge of biophysical environments. This does not exclude what Batalla (2004)

expresses about the “social-communitarian” practices for the things they could still exercise autonomously. So, it is about the religious but also the cultural and environmental epistemic (Batalla, 2004).

Faced with the colonizing vision of not rescuing anything from the “Indian cultures”, and denying them the value of existence, in addition to being excluded, they were forced to reconfigure themselves to survive, marking a clear separation between colonizers and colonized, and that therefore the cultural heritage was not recognized. Culture has an inseparable link with power. Of course, the relationship between culture and power implies not only the simple possession or access to materials and products, but also a structure of distribution of knowledge, skills and means that served and favored the colonizers (Portal, 2013).

The domination by the colonizing groups resulted in the artificial construction of culture where only certain traits were integrated, but others that were also important for the community were left aside. All this, as a selection of the dominant groups, which declared a certain heritage valid, leaving out a series of knowledge, languages, worldviews, practices, and elements, as part of its elitist character, thus denying the pluralism of Mexican society, in the non-conservation and valuation of the national culture and heritage. To this day, that rejection of the original culture prevails as imposition and domination in some way. The denial and rejection of the original culture created the risk of loss of identity and sense of belonging (Romero, 2002). Therefore, for the purposes of this work, the causes of identity loss and the implications it had on the environment and habitat, are considered important, especially for the Otomi indigenous community.

The Importance of Identity for Indigenous People

To achieve the goals of this work, the elements that form culture and identity must be considered. Culture is, following Batalla (2014), the collection of elements that accumulate over time, that a specific society recognized as its own throughout history, which are transmissible from generation to generation, where some are still valid, and others are protected in historical memory. Culture is dynamic, constantly transformed, to adjust to the changes that occur and to transform reality itself. It is an incessant process that obeys internal and external factors and that translates into the creation or appropriation of cultural goods of various natures that are added to the pre-existing good or that replace them, according to the specific circumstances of each case. The most outstanding concept that is emphasized by Batalla (2014) is that every community has a culture, so people have and manage a collection of ways to understand the world.

When a series of elements are excluded, that community may fall into the error of permanently losing the knowledge that complements cultural heritage so that creates a disconnection with identity. It is pertinent to note that the inhabitants of such community are forced to rebuild their historical borders. Consequently, the territory of the people is modified by several factors such as the loss of their symbolic link with the land. Without the territory and natural resources, as key elements of belonging, that bond begins to be lost, leaving the cultural identity incomplete.

That is why, when talking about belonging, it is understood as a culturally determined appropriation practice in time and space. This temporal-spatial appropriation is constructed from networks of kinship, belonging, and meaning related to a territory and social organization. It also relates to the festivity universe, implicitly or explicitly linked to ethnicity (Portal, 2013). For the native indigenous population it is important to maintain their complex ritual system, whose center is the patron saint festivities. These annual festivities give life to a specific modality of social organization anchored to kinship, local history, and memory. The territory of the original population is not only a geographical variable, but fundamentally a historical construction and a cultural practice. This cultural practice that distinguishes a community generates a concept of collectivity that gives them power against others and from which they extract their sense of belonging (Enríquez, 2011).

Therefore, it is important to recover the physical dimension and the symbolic dimension of culture. This “symbolic form”, that Ernst Cassirer defines (quoted in Gomez, 2014),

is an underlying dimension of culture that endows the different social manifestations of a community at a certain time with unified identity and that gives them meaning.

This dimension of the symbolic form that Hans-Georg Gadamer calls “common sense”, which founds the community and represents it; constitutes the historically accumulated experience of the people that is transmitted from generation to generation, through the formation of the new generations (Gomez, 2014). The community represents the origin and the starting point, as a precedent of the pre-Hispanic, the colonial and the contemporary, giving soundness to the kinship relations, the social organization in a territory, and the ritual system, that constitutes the collective dimension.

Importance of Environmental History

The participation of the elderly in the knowledge recreation and transmission opens an inquiry that may define the environmental and cultural processes; giving a guideline to the relationship that should exist between society and nature. It is useful to recover the concept of environmental history, which in the words of Leff (2001) is, the encounter of differentiated rationalities; as well as a vast field of study of the impacts of different production systems and social developments related to the transformations of their natural base, including the overexploitation of natural resources and environmental degradation. Leff (2001) also addresses the analysis of patterns in the use of resources and nature appropriation. The interrelations between economic, political, and cultural structures, as well as ecosystem settings may condition the sustainability of a given territory.

Not only denial and cultural elitism damage the identity of indigenous populations; so, does the environmental destruction that is part of the impacts of development, progress, and modernity; causing the disappearance of ethnic groups. Therefore, environmental history shows us the ecological complexity in history and opens the possibility to construct an environmental rationality; it establishes the link

between the unsustainable past and a sustainable future. This will open our eyes to what appeared invisible (Leff, 2001).

Environmental history emphasizes the transformations of the environment by human action, such as the processes of colonization, commercial exploitation, technologies, and everything associated with progress and modernity. This allows us to understand the economic, ecological, and cultural rationality about the use of nature; also understand about the rescue and traditional knowledge of the different cultures in the environment. That is why environmental history restores everything that was considered in oblivion.

In this environmental complexity, as Leff (2001) mentions

“there is an identity reconfiguration which is reborn from the silence of history, and that is where the ethnicity and ancestral traditions are reaffirmed. In this reconfiguration, the identity origins are updated, it is reaffirmed in a will and a desire to be defined through the ethnic combinations and the hybridizations with nature and culture.”

That is why the primary interest of this work is the recovery of the Otomi culture, and that through environmental history, a hermeneutic way is opened for the study of the different actors' narratives throughout history, taking into consideration their visions and relationships with the environment. The silences and the history of unspoken stories may be obtained through a historical review (Leff, 2001).

Environmental history should rescue the ancestral knowledge; that may allow the community to reconstruct their views of the world, traditions, and practices on the use of resources. In this sense, Leff (2001) makes it clear that the aspect of environmental history requires the method specification to address the ethnic bias and the identity reconfiguration, approaching the dialogue and investigating the historical memory and tradition of individuals.

Therefore, hermeneutics plays a preponderant role, when it comes to interpreting these cultural expressions, which are carried out through ethnographic work, “dense descriptions”, which lead the interpreter to gain access to the conceptual world in which our case subjects live.

Environmental Education Proposal

From an educational point of view, we seek to influence the transformation and recreation of values, which may motivate the inhabitants towards a positive relationship with the world, nature and with themselves to improve the environment in which they live and develop (Terrón, 2018).

Therefore, environmental education will permeate the various meanings that converge in educational theory. Environmental education for this work, places it as a learning process where it allows knowledge to be multidirectional (through learning communities) in addition to including values, capacities, skills, which allow subjects to transform their reality; in an individual and collective construction at the same time.

In an education from the indigenous peoples, symbolic shared with and for the community, preserved and elaborated from the past from one generation to another, in order to maintain the identity and cultural way of life. For this reason,

environmental education should tend to value culture, the rules of coexistence with nature and with society.

In an education that strengthens their identity and their sense of belonging. A comprehensive education that takes into account reality in all its complexity, without fragmenting it, and in its different dimensions, analyzing the facts and processes of the total context.

From a pedagogy that goes beyond transmitting the “tools of culture”. If not in a critical pedagogy that reflects on the education that is being acquired and that warns of damage to the environment.

For this work, the original people are considered as key actors in the understanding of the fractured relations of society due to hegemonic thinking, considering their relationship with the environment as an alternative to the environmental problems that may affect society.

Following this idea, the ancestral knowledge possessed by the original people serves as a basis for the development and construction of strategies in environmental education that may lead us not only to reflect, but to think about the possible solutions for environmental and social degradation. We should open ourselves to new epistemological visions to develop a thought process based on the construction and deconstruction, that may lead to the recovery of the autonomous spirit, giving way to a new rationality.

Hermeneutics serves as a tool to support research on the recovery of the ancestral knowledge of the Otomi people of Santa Cruz Ayotuxco, providing a different view to understand particular facts and generate new principles, which may go beyond the borders imposed by modern science concepts and methods (Grondin, 2002).

It is important to consider hermeneutics as the art of interpretation, and that on a philosophical level, it leads to the interpretation of the world and culture. Therefore, hermeneutics considers different cultural systems and analyzes all the visions. To consider the ideology and meaning of the people it must necessarily go through certain principles (Beuchot, 2009).

To consider the vision of the people it is necessary to understand the relations they exercise between them. Everything is related to everything, and the different realities belong to each other in a harmonious way, in a mutual bidirectional way, so there is a principle of correspondence. This principle acts above everything else in the symbolic, ritual, celebratory and affective levels since correspondence implies the dependence in which the human being acts with respect to the cosmos (Beuchot, 2013).

For the indigenous communities there are certain principles of great consideration, such as the principle of reciprocity by making visible that for each action there is a response, as a contribution. It is not about economic importance, but it goes much further, an act that is part of the cosmic world. For this reason, among indigenous people there is a system of cooperation and solidarity, that goes beyond a spiritual power, which forces people to return a gift or favor, and accepting something means accepting it in its spiritual essence. A form of exchange that generates reciprocity relationships and connections is a matter of coexistence (Estermann, 1998).

The path of hermeneutics should be taken from the interpretation of the communities, in their understanding of culture and thought. Therefore, it must consider many aspects and areas that support the pedagogical processes. In this type of educational processes, memorization does not work, but it should be based on true experiences, which mark the people's lives with the intention of reconfiguring their identity. The goal of these teachings is the construction of a person that is not made alone, but that is part of a community (Eliade, 2001).

Knowledge is based on traditions and social practices related to a certain space, time, language, and culture, which appear as horizons of human existence (García, 2012). Hermeneutics focuses on action to understand its meaning and locate it in the methodological, ontological, and epistemological planes, with the individual at the center of the experience (López, 2013). This suggests that there is a unity between the individual and the investigated object.

As a method, hermeneutics is established in a dialogue with the past and with others. A conversation is established in which something is expressed that is not exclusive to the original author, nor to the interpreter, but is common to both. From there, both parties tend to understand and make themselves understood by a common language and shared opinions. That is why language constitutes openness and the possibility of significance, through dialogue and interpretation, aiming at the construction of meaning. People's identity is configured by being part of certain processes, through dialogue and negotiation (Leff, 2000).

From the hermeneutic perspective, the role of the environmental educator can be considered as an interpreter of the links and the different senses of the society's environment. Environmental education would be contributing to the broadening of the understanding of society-nature relations. (Carvalho, 2000). Education must be directed towards the problematization of social interests. Opening educational practice to understanding the possibilities and to the commitments towards environmental problems, could strengthen and help build a socio-environmental ethic that contributes to the construction of a more environmentally just society.

The complexity of environmental conflicts escapes the dominating positivist rationality; and in this situation the social, cultural diversity, traditions and indigenous knowledge are minimized, and therefore there is a high risk of their disappearance. However, cultural diversity has been until now, the only way towards a sustainable society, because of the knowledge and connection with nature. From the hermeneutic position, according to Leff (1998), one could contribute to an education that is oriented by the desire to "*learn to learn the environmental complexity*" and that a dialogue of knowledge could be very productive. In this sense, the non-formal educational dimension of environmental practices could be infused to the rest of the community.

In this way, hermeneutics offers an appropriate comprehensive vision, capable of welcoming diversity, which makes it strategic towards a sensitive listening to the dialogue between traditional knowledge and modernity, that combines science with other types of consciousness. This interchange as a methodological alternative in the recreation of the

community's ancestral knowledge involves a local knowledge approach without violating its nature. Problems should be addressed by the research with the participation and involvement of key stakeholders. The dialogue will depend on the will to break down obstacles (such as the generation gap, and gender notions, and others). To achieve these dialogic processes, it is necessary to deconstruct and reconstruct scientific and abstract frameworks with significant concepts developed and understood on a local scale, allowing the recognition of complex phases and processes.

This dialogue highlights the recognition, recovery, and valorization of local knowledge, signifying its identity and positioning itself in a framework as part of a resistance to the dominant culture, which transcends the time and space of classical scientific knowledge. A dialogue gives new dimension to the diversity of knowledge in the construction of science by redefining local traditions and practices as a set of general principles that give meaning to people's lives (Leff, 2004). This emerging collective construction between people with different specific historical experiences and knowledge allows for them to share thoughts, which may add new context and meaning to history, traditions, territories, experiences, processes, and actions. In these new collective understanding, meanings and knowledge undoubtedly serve as a basis for collective resistance actions and for the construction of new processes (Alarcón-Cháires, 2017).

For this reason, this environmental education proposal aims to be a pedagogical option that supports a new vision for the relation between society and the environment. This may lead to a more comprehensive look about the contribution of the traditional knowledge in the Otomi community.

METHODOLOGY

For this work, we have proposed to use hermeneutics as a methodological tool, which allows us to have a look from the environmental complexity and from where a thought is projected to achieve knowledge reconstruction in the "interpretative narrative debate" with the facts narrated from experience. The daily experience of key actors and their interpretation will be used. The inhabitants of Santa Cruz Ayotuxco should achieve a cultural recovery of the Otomi ancestral knowledge and may generate a sense of belonging, as well as a recovery of values and ancestral practices and traditions with a conduction from environmental education.

Through an environmental education proposal, the community may become more integrated, and persons may be more involved in the participation processes to address social and environmental problems. The community's traditional knowledge may be recovered: the work with the land, as a symbolic principle; the traditional ways of organization, as well as the productive practices that encourage, not only economic recovery, but that contribute to the interrelation between individuals and their environment.

Proposal Description

1. **Knowing the locality:** I made the tour in the locality, considering the important historical sites, and considering the most frequent recreational, social, and

religious activities in the community; as well as productive practices and landscapes. This has allowed us to visualize and locate potential participants by the relevance of their activities and links with the community for a subsequent invitation to get involved in the research.

2. **Community participation:** In this phase, the inhabitants of Santa Cruz Ayotuxco community were invited to participate in the experience's recovery, so they could share those events that have shaped the town's history. For this phase, the local authority was contacted, and the commissioner, who represents the community and makes certain decisions concerning the town, was presented with the proposal, gave green light to it, and accepted to get involved. There were also talks with the group in charge of the town's traditional practices and customs.
3. **Information collection:** This stage, considered the longest, is the one that corresponds to fieldwork, where there is direct contact with the different community institutions, as well as the participation of the inhabitants is needed. For the information collection we used formats. One of the fundamental elements were the interviews with the elderly inhabitants, who keep the memories of the past. In this case, it was considered useful to record the histories of those key actors since that information is crucial for a better understanding of the environment. Those life stories can be defined as individual's accounts of their existence over time, but they also reconstruct important events and experiences that should be transmitted. Those stories constitute the narrative of significant relevant events where group relationships were delineated (Aceves, 1996). These life stories are considered a qualitative sample, in the collection of information through field notes and recordings, photos and videos, which allows us to have greater detail on the information.
4. **Classification and results:** This stage considered the most important for organization and analysis. It is here where the most relevant aspects are determined, such as taking the essence of each participant in terms of their contribution to the ancestral knowledge. This phase is crucial to understand the community's environment and for the development of strategies that motivate its inhabitants to participate and get involved in the environmental and social issues of the place. After collecting all the information, one of the fundamental purposes of the research is the periodic conversations with inhabitants, to create a community of lifelong learning and shared stories and anecdotes as well as to practice some traditional activities.
5. **Research dissemination:** This project has relevance for the community, so it is proposed to generate a printed publication where the results are captured and portrayed. This publication will become part of the important documents of Santa Cruz Ayotuxco and will serve for the knowledge of its current inhabitants and for future generations; in addition to the recognition of the territory by the community itself.

RESULTS

Collection of Information from Key Stakeholders

For the collection of information there were some setbacks that made the program difficult to carry out in scheduled time and form, due to the global contingency caused by SARS-CoV-2, in addition to adjusting to the participants' agendas, who have various activities, but who gave us their time and shared experiences.

Central Characters of the Otomi Ancestral Knowledge

The ancestral knowledge has generally been transmitted through language, making memory the most important resource in indigenous people's tradition, and can be transmitted from generation to generation in an oral manner. According to Toledo (2009, p. 70), to carry out a correct appropriation of local resources it has been necessary to have a cognitive system, since each praxis or each material "life" always corresponds to a "symbolic life". For this reason, ancestral knowledge is considered relevant to understand a community's vision of the world, being a vital knowledge catalogue, which together with language and hermeneutics will be the indispensable elements for its interpretation and understanding.

Mentioned below are some of the key participants, who were selected according to their age, activities, and the positions they occupy in the community:

1. **Participant A-76-year woman:** Peasant, owner of a traditional mill and who knows the history of the community as well as traditional knowledge with local medicinal plants.
2. **Participant B-70-year man:** Peasant, worker, and community member, recognized for his work in community activities.
3. **Participant C-82-year woman:** Farmer, whose life has been dedicated to the countryside. She knows cultivation techniques as well as traditional elaboration of tortillas (traditional food based on corn).
4. **Participant D-71-year man:** Peasant, worker, and local community member, involved and recognized for work on community issues.
5. **Participant E-74-year man:** Community producer and village commissioner, who has been dedicated for years to community affairs, in addition to collecting information of interest about and for the community.
6. **Participant F-68-year man:** Communal landowner in charge of organizing the traditional ball in the town's festivities.
7. **Participant G-72-year man:** Nopal producer and community member, who has greater knowledge on the practices of the town as well as about local history.

Each of the participants shared their own experiences, anecdotes, and knowledge, which are of vital importance for this research and for the purpose of it. Within the life stories of each one, the information that is considered of greatest relevance in the reconstruction of the history of the community was selected, as well as the knowledge related to

the work of the land with symbolic value and tradition that are mostly religious.

For the collection of life stories, a field log was used, and it was the main means of archive; writing down the facts narrated by the participants and recording the activity and actions in time sequence whenever there was an opportunity to approach the key actors. In addition to the field log, audios and videos were used to speed up and have a better collection of information.

To carry out the interviews and collect the life stories, we created a script that would allow us to know important and relevant data about the work's goals. Each participant has responsibilities and commitments related to the community, so it was necessary to ask for personal information that would identify them, as well as questions related to the place and topics of interest such as their experiences from childhood in the community, what they learned by their elders, the importance they gave to their place of origin, how they perceive their relationship with the environment, the customs, beliefs and traditions that have been followed, and the significant changes that they have seen over time in the community.

Elements That Make up the Santa Cruz Ayotuxco Otomi Community, A Brief Current Environmental History

With the information collected from the participants, it is possible to interpret the stories, and the construction of the history as well as the elements that have built the community:

The community belongs to the Otomi ethnic group. In the territory we may locate centers of religious historical interest, as well as vast tradition and cultural knowledge. The conformation of the locality is also characterized by being related to the tenure of the land. With the agrarian distribution in the region, the town is governed by communal goods. The community has its own history, even with certain elements prevailing that make part of its Otomi identity. Communal life is framed in sacred practices or rituals in which, in addition to worshipping religious catholic images, pilgrimages are made to sacred sites: hills, springs and the deities that inhabit them as part of the cult.

However, although the town still possesses part of that Otomi identity, there are not many records and reports of its history (which has been little documented). That is why the key actors of this research have made their contribution to the collection of information and knowledge of the history of the place. With the contribution of their own photographs and information, the participants have documented the history of the site¹.

Part of what was shared in the interviews were the ways of life in the past. Santa Cruz Ayotuxco community is described as a site rich in biodiversity from which goods were provided for local consumption, a quiet site with people's unity, by the participation of the vital inhabitants in the community's decisions and for the benefit of all. Unfortunately, the community vision has been changing over time, modifying the practices to the extent that some have been lost.

Features and Practices That Highlighted and Enriched the Community

Traditions

In the cultural field, family, music, dance, oral tradition, and the system of responsibilities to organize the main religious festivities are considered a fundamental part of the town's history. Among the responsibilities are "mayordomos, fiscales, cargueros, topiles, rezanderos and cantores", among others, who were considered of great importance in the daily life of the community. The rites and religious worship are considered as fundamental elements for the expression, conservation, and preservation of the identity and personality of this indigenous community. Some of these activities have been carried out through its Otomí Ceremonial Center, which is shared with surrounding towns (Xochicuátla, belonging to the Municipality of Naucalpan). This ceremonial center possesses an extensive cultural and historical heritage.

Social organization

The community still maintains forms of traditional authority, although in decreasing intensity, through instances that regulate the social organization, covering the family, the neighborhood, and the community. The family is the basic unit, followed by the neighborhood and the community. This last one is organized through committees, that are created to give continuity to the most important holidays and to cover the collective demands related to the implementation and maintenance of public services.

Economic activity

The most practiced activity was agriculture, particularly the cultivation of milpa (a multi plant field or orchard to grow corn and other fruit trees), which was the main economic activity in the area; followed by the production of pulque (an alcohol beverage made from a cactus) in addition to the breeding of sheep, pigs, cows, horses, chickens, and rabbits, among others, either for self-consumption or for sale.

Symbolic value of the land

The settlers were long dedicated to the milpa and used the traditional plowing of the land for the cultivation of corn. The symbolic link that was given to the land was through religion and ritual. Traditionally the sowing was carried out on March 19 in honor of Saint Joseph, reason why they decorated the plowing animals, an event that coincided with the entry of spring, an ideal date for the planting of corn. The process was done through a ritual, to give thanks and obtain a blessed planting, in which complete families participated together and the collective support was noticed with everyone who worked the land.

In this practice, from the children to the elderly, everyone participated in a notorious coexistence and all resources were shared. This act of celebration and contribution towards the land and cultivation, was the way in which the community related to nature, and therefore generated a sense of appropriation to it.

¹ In an interview with the Navarrete family, personal communication, May 18, 2020

Over the years those practices stopped, gradually forgetting this knowledge. The knowledge of traditional agriculture contributes in an important way to the community (not only locally) but worldwide. As described by Toledo (2009),

“Although very few attempts have been made to evaluate the contribution of the traditional sector to the survival of the entire species, the figures indicate that this portion of humanity still supplies significant volumes of food, raw materials, water and other satisfiers to the rest of the world.”

Another of the most practiced activities, followed by the milpa, was the production, distribution, and sale of pulque in the so-called pulquerías, spaces that served as an economic sector, meeting point and coexistence for the inhabitants after the local workdays. As described above, all these activities were part of the essence of the place, of which there are few that prevail and others, unfortunately, are no longer practiced. What becomes evident as a result is the disinterest of the inhabitants towards their own community.

Towards the Construction of a Learning Community

As part and result of this research, the aim is to build a learning community, which can be permanent, and that transmits, replicates, and serves as support to the Santa Cruz Ayotuxco community in the linking and understanding of their environment, through environmental education. As it has been stated, through environmental education the community may recover its traditional knowledge. It is necessary to consider education as a key element because it is part of the development of the subject. This education includes the individuals in society through socialization; where opinions, moral practices, national or professional traditions, collective opinions of all kinds constitute the social being (Durkheim, 1975).

Environmental education is fundamental in the consolidation of these communities since it manifests a constant need to look for new educational spaces, in which we work with the elements and relationships between the subjects and the natural environment. Having a point of view from the individual, where the formative skills allow the understanding and management of the cultural elements to modify and change their environment. This gives education an innovative possibility that allows the formation to mature and draws educational goals. In this case the traditional knowledge should be appropriated by the inhabitants of the community and create attitudes of change towards the place where they live, reconstructing the relationship between human and nature.

To achieve this kind of education, local group talks are fundamental as a means to advance towards the final purpose of this work, which is to maintain a learning community where traditional knowledge, environmental education and the interest and participation of the inhabitants allows them to recover ancestral knowledge that may become lost and find better ways to coexist with other members of the community and with the territory. The consolidation of a learning community only occurs through time and constant work.

DISCUSSION

According to result obtained, it can be seen that environmental history is important in understanding the relationship human being has with his environment and how it has been modified by himself over time; in addition to the various forms in which the nature appropriation has been given in a positive and negative way.

For this reason, the reconstruction of the past history of the community under study gives way to reflection on the past, present and future of its environmental complexity. This environmental history reconstruction considers relevant aspects, such as the colonization process in the community, the local exploitation resources over time and also considers the ancestral knowledge and traditions that are part of their identity.

In this way, the environmental history reconstruction contributes and reaffirms that identity origin and also understands of its disappearance causes. The historical importance of this reconstruction is inform to the community how this identity reaffirmation is linked to the origin and therefore forms part of its configuration and how it is affected by current environmental and social problems. But also how it can be done to face these problems in the environment reflection and valorization.

CONCLUSIONS

Achieving a recovery of the ancestral knowledge of the Santa Cruz Ayotuxco Otomi community, will allow its inhabitants to reconnect and generate a sense of belonging with their environment by adopting values, reflect and get involved in the socio-environmental issues of the community.

Through experiences, the community may also recover the local festive traditions and community work, in addition to the symbolic value of the land as a way of interrelating between individuals and the territory. Achieving the construction and organization of a learning community through environmental education will serve as support for the reflection, participation, and action of its inhabitants towards the resolution, improvement, and conservation of the environment.

Therefore, this work aims to be a pedagogical option that supports a new vision of the relationship between society and the environment, that generates a comprehensive look at the contribution of the traditional knowledge of the Otomi community.

The formation and permanence of learning communities will frame the purposes of environmental education, in achieving community education, integral formation and the socialization of the individual through the experiences and daily practices, learning from the past experiences of the indigenous people. This contributes to the revitalization of culture and the maintenance of a sense of belonging; as well as deepening and strengthening traditions as a mechanism for the transmission of culture.

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