CHICHI GOES COOP

Proposal for the Transition from a Conventional Village to an Ecovillage
Chichihuiatan - Chiapas - Mexico

Case study by Monika Hösterey, Peter Gringinger, Sascha Jenke, Veljko Armano Linta
GEDS Programme 2016/2017
CHICHI GOES COOP – Proposal for the Transition
from a Conventional Village to an Ecovillage
Chichihuistan – Chiapas - Mexico

EXECUTIVE SUMMARY

“Chichi Goes Coop” is a proposal for the transition of a Mexican indigenous village into a prosperous and regenerative ecovillage.

Overview

The village

San Isidro Chichihuistan is a largely indigenous village in Chiapas (a state in southern Mexico) founded in the 1960s by people who had to leave their old settlements. Chichihuistan currently has 320 inhabitants and has consistently been facing many problems typical of its region, including poverty, environmental degradation, food and water scarcity, weak healthcare and education, social tensions and low morale.

The bioregion

The population of the bioregion (Los Altos or Central Highlands of the Chiapas Region) and the entire state is young and economically poor in comparison with the Mexican average, with high emigration. All indices of social development for the indigenous people are considerably lower than the national average. There have been serious abuses of power reported, along with a problematic judicial system.

Global issues

To make matters worse, adverse effects of global warming and failure of a consumption-driven economy affect many of the world's poorest areas, and the most economic and socially disadvantaged are forecast to bear most of the brunt of ecological exhaustion and climate change.

The need for transition

The world urgently needs sustainable and regenerative models that can be replicated and adapted to different Bioregions, models that can give hope and practical know-how to everybody. Chichihuistan can become such a model, connecting with initiatives such as the Senegalese ANEV Programme (ecovillage transition programme).

Sources of inspiration

The proposal is rooted in the good practices of the Transition Movement and based on the four dimensions of sustainability and regeneration, as used by the UNESCO, Gaia Education and the Global Ecovillage Network, but goes beyond general recommendations to propose specific steps based on the actual situation and context.

What has been done so far

The transition process is already happening in Chichihuistan, with the emergence of a core group that will inspire and mobilise the community’s transformation. Several business projects and ecological undertakings have started. The process is currently facilitated by Monika Hösterey, one of the authors of this case study. The case study aims to aid the process within Chichihuistan and its expansion into the bioregion.
CHICHI GOES COOP – Proposal for the Transition
from a Conventional Village to an Ecovillage
Chichihuistan – Chiapas - Mexico
Challenges

Ecological issues
- deforestation
- illegal sand mining
- over-farming
- soil erosion
- water scarcity
- wastewater infiltration
- soil pollution
- water pollution
- loss of soil fertility
- loss of habitat and biodiversity
- access to water springs (legal issues)
- inadequate housing
- open fireplaces and no chimneys in houses

Worldview issues
- tensions between Evangelical and Catholic Christians
- ambivalent relationship towards indigenous roots
- lack of understanding of the link between environmental degradation and wellbeing (including health issues)
- Longing for symbols of wealth

Social issues
- lack of efficiency of the communal assembly (decision making body)
- disempowerment of women and young men
- lack of proactive attitudes
- conflicts between private landowners and members of the traditional cooperative
- other conflicts between groups in the community
- problems of young families with children
- low levels of education
- lack of official state healthcare

Economic issues
- small income despite hard work (especially women)
- lack of harvest surplus to sell
- having to work from a young age
- provision of childcare by the state
- small trading network
- high-interest borrowing
- spending on cola and unhealthy food
The Approach

Vision

A web of inspiring rural transition models in the global south, empowering a worldwide grassroots movement to co-create a thriving, brilliant, solidary new world.

Mission

Creating and respectfully educating a transition core group in Chichihuistan to face the challenges of transition and lead the changes to the social, environmental and economic systems while recuperating ancient values, knowledge and skills.

Overarching objectives

Chichihuistan as a:

- Transition model for southern Mexico
- Village where social, ecological, economic and worldview dimensions are integrated into regenerative abundance
- Combination of a cooperative and social enterprise
- Example of how environmental responsibility leads to welfare and ends poverty
- Rural educational centre where indigenous farmers educate all farmers
- Source of empowerment for educational practices based on love, respect and responsibility
- Model for celebrating diversity in a multicultural bioregion
- Place of healing and inspiration

The role of the case study

This case study will help the community to make a comprehensive and realistic timeline according to its needs, wishes and priorities. As the community works on defining its vision, priorities and action plans, the transition process should diverge from the proposals in this case study whenever that is beneficial, and come back to them whenever needed.

Solution proposals

Economic dimension

- Continuing and developing already existing projects: chocolate, sauerkraut, marmalade, holistic education, carpentry.
- Continuing with pilot projects: natural building, water management, organic agriculture.
- Harvesting new business ideas: fixed mirrors stoves, micro hydro, small wind mills, wind water pumps, well digging; upcycling textile; various handcrafts - furniture, toys, jewellery, household items, educational materials; producing kombucha, stevia, moringa, healthy cola, soap; tree nursery; local traditional natural medicine.
- Modelling and testing business plans.
- Creating a social regenerative transition enterprise/cooperative/NGO with an appropriate governance structure (more than one entity may be needed).
- Securing funding for initial costs, education and volunteering programmes until self-sufficiency is achieved.
- Ensuring balance of community needs and market needs.
• Ensuring balance of mainstream and alternative trading systems on the path towards a circular bioregional economy.
• Investing a part of the sales income into education, environmental restoration and the running costs of the Community Assembly.
• Investing profits into the community.
• Considering the option of creating an enterprise for eco-education and eco-regeneration.

Social dimension
• Developing a community vision with the Core Group of enthusiastic villagers.
• Developing skills for communication, self-management, trauma and shadow work, and group-building.
• Developing a functional Assembly through regenerative-leadership training and consent-based decision making.
• Distributing governance onto double-linked management circles.
• Fostering community cohesion through arts and celebrations.
• Connecting with the natural environment and networking within the bioregion.

Worldview dimension
• Expanding the visioning work to the whole community by making a Chichi Questionnaire and a Chichi Happiness Index.
• Building a spiritual ecological approach through the Evangelical Church, Catholic Church, sacred spots and walks, and celebrations.
• Education and support for traditional ecological knowledge, a healthy bioregional diet, health and wellbeing related to work, recreation, hygiene and other.
• Supporting individual transformation and providing psychological support.
• Creating “beautiful” spaces and structures that contribute to intrapersonal and interpersonal balance.
• Fostering a sense of participation in the global transition movement.

Ecological dimension
• Mapping eco-social situation, including a topographical survey, in order to apply permaculture design principles.
• Developing a more diverse, regenerative, bio-intensive agriculture through better communal land-management, crop rotation and permaculture pilot-projects.
• Restoring sand mines, managing water flows (keyline design, water retention etc.) and applying agroforestry to eroded areas.
• Resolving legal issues about water springs and securing funds for necessary geo-hydrological investigation.
• Improving water retention and introducing rainwater management systems at household and community levels.
• Introducing composting toilets with urine-faeces separation, fertiliser production and constructed wetlands for greywater.
• Diversifying crops for a more balanced diet and more resilient agriculture, resulting also in more food for sales (processed and fresh organic food).
• Testing roof covers: borax treated palm leaves and Zacate de Cuba.
• Introducing the “Smoked Roof House” pilot project for new houses and seeking government support and funding for it.
- Redesigning and transforming domestic domains for households, inspired by UNHABITAT.
- Producing electricity by micro-hydro, solar panels and small handmade windmills.
- Low-tech geothermal harvesting for heating/cooling and using a Schaeffler Solar Mirror for communal cooking.
CHICHI GOES COOP – PROPOSAL FOR THE TRANSITION FROM A CONVENTIONAL VILLAGE TO AN ECOVILLAGE
CHICHIHUOSTAN – CHIAPAS – MEXICO

Table of Contents

EXECUTIVE SUMMARY ................................................................................................................................................ II

1 INTRODUCTION ......................................................................................................................................................... 1
  1.1 Where is Chichihuistan? ..................................................................................................................................... 1
  1.2 What is the global context of Chichihuistan? ................................................................................................. 1
  1.3 Why Chichihuistan? ............................................................................................................................................ 1
  1.4 The transition movement ................................................................................................................................. 2
    1.4.1 Examples of good practice ....................................................................................................................... 2
    1.4.2 Sustainable development goals (SDGs) ................................................................................................. 2
  1.5 The role of this Case Study in Transition ............................................................................................................ 3
    1.5.1 The Core Group ....................................................................................................................................... 3
    1.5.2 The key issues ........................................................................................................................................... 3
    1.5.3 The network .............................................................................................................................................. 4
  1.6 Making of the case study ..................................................................................................................................... 4
  1.7 Case study structure ........................................................................................................................................... 5

2 VISION AND MISSION ................................................................................................................................................ 7

3 CURRENT SITUATION SUMMARY ............................................................................................................................ 9
  3.1 Ecological Dimension ....................................................................................................................................... 9
    3.1.1 The Bioregion ............................................................................................................................................ 9
    3.1.2 The territory of Chichihuistan .............................................................................................................. 9
  3.2 Worldview Dimension ..................................................................................................................................... 10
  3.3 Social Dimension .............................................................................................................................................. 11
  3.4 Economic Dimension ....................................................................................................................................... 11

4 DESIGN PROPOSALS FOR ECONOMIC DIMENSION ......................................................................................... 13
  4.1 Economic Blueprint .......................................................................................................................................... 13
    4.1.1 Multidimensional Economic Value ......................................................................................................... 13
    4.1.2 Values ....................................................................................................................................................... 13
    4.1.3 Mission ...................................................................................................................................................... 13
    4.1.4 Challenges .............................................................................................................................................. 13
    4.1.5 The Economic Reality in Chichihuistan ................................................................................................. 14
  4.2 Proposals of Solutions ....................................................................................................................................... 14
    4.2.1 Turn the impression of disadvantage into advantage - from scarcity to abundance ......................... 15
    4.2.2 How will we make a good start? (Pre-Start Phase) ............................................................................... 15
    4.2.3 At the end of this Pre-Start Phase, there are three choices: .................................................................. 16
    4.2.4 SWOT analysis ........................................................................................................................................ 16
    4.2.5 The Elevator Pitch or Project Overview ................................................................................................. 17
    4.2.6 Create a Social Cooperative .................................................................................................................... 17
    4.2.7 Working and testing the idea .................................................................................................................... 17
  4.3 What kind of enterprise? What legal structure can we imagine? .................................................................. 22
    4.3.1 Why Merging? COOP+ Regenerative Transition Enterprise ............................................................... 22
    4.3.2 A Regenerative Enterprise ...................................................................................................................... 23
    4.3.3 A Transition Enterprise has certain characteristics: ............................................................................. 24
    4.3.4 Structure – creating a legal vehicle for our enterprise ........................................................................ 24
    4.3.5 The Master Plan ....................................................................................................................................... 25
  4.4 Bioregionalism and Alternative Trading Forms ............................................................................................ 27
  4.5 Externalities and Subsidies ............................................................................................................................... 27
  4.6 Implementing SMART Criteria: Specific, Measurable, Achievable, Realistic and Time-Bound ................... 28
4.7 Revitalization of local economies/ Right livelihood closing the loop ........................................... 28
4.8 8. Profit? What is that in Our Transition, Social Regenerative Enterprise? ............................... 28
4.9 Education ...................................................................................................................................... 29
4.10 Implementing Generosity ............................................................................................................ 30
4.11 How Do We Build Regenerative Vitality in Chichihuistan regarding the 4 dimensions? ............. 30
4.12 Ecological Regeneration Plan .................................................................................................. 30
4.13 What more do we need? .............................................................................................................. 31
4.14 A Business Idea Example: HighCycleClothes ........................................................................... 31
5 DESIGN PROPOSAL SOCIAL DIMENSION .............................................................................. 33
5.1 Vision, Mission, Purpose, Core Values and Regenerative Goals .................................................. 33
  5.1.1 Project Case Study Social Vision .......................................................................................... 33
  5.1.2 Community's Vision .............................................................................................................. 35
  5.1.3 Integration of Visioning: ......................................................................................................... 35
5.2 Building and Maintaining Regenerative Communities ................................................................. 36
  5.2.1 Communication ...................................................................................................................... 37
  5.2.2 Trauma and Shadow Work .................................................................................................... 37
  5.2.3 Governance ............................................................................................................................ 38
  5.2.4 Participation and Decision Making ....................................................................................... 38
  5.2.5 Buildings Groups and Dealing with Conflict ......................................................................... 39
  5.2.6 Leadership and Power Dynamics ......................................................................................... 40
  5.2.7 Arts and Celebrations for Social Cohesion ............................................................................ 41
  5.2.8 Bioregional Development ..................................................................................................... 43
6 DESIGN PROPOSALS FOR WORLDVIEW DIMENSION ......................................................... 45
6.1 Introduction ..................................................................................................................................... 45
6.2 Worldview Future Vision .............................................................................................................. 45
  6.2.1 The vision .................................................................................................................................. 45
  6.2.2 Values, approaches and principles .......................................................................................... 47
6.3 Steps towards the Vision .............................................................................................................. 48
  6.3.1 Visioning with Chichihuistan ............................................................................................... 49
  6.3.2 Spiritual Ecology ..................................................................................................................... 50
  6.3.3 Education and daily life ......................................................................................................... 52
  6.3.4 Transformation and transition ............................................................................................... 54
7 DESIGN PROPOSALS FOR ECOLOGICAL DIMENSION ....................................................... 57
7.1 The Main Ecological Challenges .................................................................................................. 57
  7.1.1 The main ecological challenges ............................................................................................. 57
  7.1.2 Ecological Vision ..................................................................................................................... 57
  7.1.3 Believe in our success .............................................................................................................. 57
7.2 PERMACULTURE ......................................................................................................................... 57
  7.2.1 Permaculture Design Principles ............................................................................................. 57
  7.2.2 Permaculture zones ................................................................................................................ 58
  7.2.3 Permaculture application ......................................................................................................... 59
7.3 Ecosystem Health .......................................................................................................................... 60
  7.3.1 Reforestation, keyline swales and regeneration ..................................................................... 60
  7.3.2 Reforestation and agroforestry ............................................................................................... 63
7.4 WATER MANAGEMENT ............................................................................................................. 65
  7.4.1 Investigations and studies ........................................................................................................ 65
  7.4.2 Managing water sources ......................................................................................................... 65
  7.4.3 Water distribution network ..................................................................................................... 68
7.5 Food Supply ..................................................................................................................................... 69
  7.5.1 Healthy diet ............................................................................................................................. 69
  7.5.2 Food for own use ...................................................................................................................... 70
  7.5.3 Food Surplus .......................................................................................................................... 71
7.6 Buildings and Construction .......................................................................................................... 72
  7.6.1 General guidelines .................................................................................................................. 72
  7.6.2 Roofs ......................................................................................................................................... 73
  7.6.3 Private domains ..................................................................................................................... 75
7.7 ENERGY SUPPLY ............................................................................................................................................ 77
  7.7.1 Prosperity and energy use ............................................................................................................................ 77
  7.7.2 Energy production ........................................................................................................................................ 81
8 CONCLUSIONS .................................................................................................................................................. 82
  8.1 Summary of Design Proposals ........................................................................................................................ 82
      8.1.1 Economic Dimension Proposals ............................................................................................................... 82
      8.1.2 Social Dimension Proposals ..................................................................................................................... 83
      8.1.3 Worldview Dimension Proposals ............................................................................................................ 84
      8.1.4 Ecological Dimension Proposals ............................................................................................................ 85
  8.2 The Next Steps .............................................................................................................................................. 87
9 BIBLIOGRAPHY .................................................................................................................................................. 88

Text Tables

Table 4-1: Fundraising Goals for 2018 .................................................................................................................. 20
Table 6-1: SWOT Analysis of the Social Dimension ........................................................................................... 34
Table 6-2: Integral Social Vision for Chichihuistan .............................................................................................. 36
Table 7-1: SOWT Analysis for Energy in Chichihuistan ....................................................................................... 77
Table 7-2: The Two Energy paths for Chichihuistan ............................................................................................ 78

Text Figures

Figure 2-1: Vison-to-outputs Integration Diagram ............................................................................................... 8
Figure 3-1: Overview pictures of Chichihuistan local environment ..................................................................... 10
Figure 4-1: REconomy Project Development Process .......................................................................................... 15
Figure 4-2: SWOT – the first steps to create a common enterprise ........................................................................ 17
Figure 4-3: Resourcing and Financing CHICHI goes COOP ............................................................................... 22
Figure 4-4: The Eight Forms of Capital .................................................................................................................. 23
Figure 4-5: CHICHI COOP Products and Services ............................................................................................. 25
Figure 4-6: CHICHI COOP Business Canvas ..................................................................................................... 26
Figure 4-7: Education Framework in Chichihuistan .............................................................................................. 29
Figure 4-8: Chichi Coop educational requirements .............................................................................................. 30
Figure 4-9: High Cycle Clothes Business model .................................................................................................... 32
Figure 6-1: Compass Community Development Model ........................................................................................ 36
Figure 5-1: The Visioning and Back casting Process ............................................................................................. 45
Figure 5-2: The ladder of inference ....................................................................................................................... 46
Figure 5-3: Sacred/prayer place in the community ................................................................................................. 52
Figure 5-4: Art, celebration sharing and offering in the community ......................................................................... 56
Figure 7-1: The Permaculture Design Process .................................................................................................... 58
Figure 7-2: The Permaculture Zones .................................................................................................................... 59
Figure 7-3: Chichihuistan Property and Water Map ............................................................................................... 62
Figure 7-4: Sediment Traps .................................................................................................................................. 63
Figure 7-5: Contour Lines and Check Dams ........................................................................................................... 63
Figure 7-6: Water retention spaces (blue spaces) ................................................................................................. 67
Figure 7-7: Schematic of a WET System ................................................................................................................ 69
Figure 7-8: Zacate Plant .......................................................................................................................................... 73
Figure 7-9: “Smoked Roofs” – Scheme of a house with a chimney opening into the roof cavity .......................... 74
Figure 7-10: Sequence of transformation of a conventional village into an ‘ecovillage’ .................................... 76
Figure 7-11: Energy Transitions for Chichihuistan ............................................................................................... 80
Appendices

Appendix A ................................................................................................................................................. 24 Pages

Current Situation Description
San Isidro Chichihuistan /Municipio de Teopisca /Chiapas/Mexico
Geographical, cultural and general context
1 INTRODUCTION

1.1 Where is Chichihuistan?

San Isidro Chichihuistan is an indigenous village in Chiapas, southern Mexico, about 40 km (1 hour by car) from the next bigger city San Cristóbal de las Casas. Chichihuistan was founded by five young couples in the 1960s, after looking for a place to live because they had to leave their native places. The reason to leave their homes was the lack of land, lack of food, lack of income and a great discrepancy in spiritual aspects.

50 years later, Chichihuistan currently has 320 inhabitants and has consistently been facing many problems typical of its region, including poverty, environmental degradation, food and water scarcity, weak healthcare and education, social tensions and low morale.

1.2 What is the global context of Chichihuistan?

We stand at a defining moment in human history. Rapid population growth, an obsessive consumption driven economy and a continuing inability to accept that there are limits to growth have led to unsustainable human activities on our planet. If current consumption and population patterns continue, it is estimated that by 2030’s we will require the equivalent of two earth to support us (Global footprint Network). This ecological overshoot is resulting in diminishing fisheries, severe deforestation, depletion of freshwater systems, and the building up of harmful greenhouse gas emissions. The latter has serious consequences for global warming.

Adverse effects of global warming and failure of a consumption-driven economy affect many of the world's poorest areas, and the most economic and socially disadvantaged are forecast to bear most of the brunt ecological exhaustion and climate change. It is paramount for our species to transition into a regenerative presence on the whole planet we inhabit.

1.3 Why Chichihuistan?

Mexico is ranked 77th in the Human Development Index. In its rural parts, poverty and inequality are rampant and the situation is especially bad in indigenous areas. The current way of life in rural villages is unsustainable and is leading to immigration to urban areas, and in some cases to “the land where gold and honey flows” – the USA. Furthermore, many people recognize that the low quality of life has serious consequences for local environments as rural inhabitants often consider nature as something to exploit. This is not a lone example. The world urgently needs sustainable and regenerative models that can be replicated and adapted to different Bioregions, models that can give hope and practical know-how to everybody.

This case study for this rural indigenous context hopes to be a spark for lighting a bigger fire so that other communities can use the tools and insights developed here, encouraging Transition in South America and wider. The case study will be presented to the local authorities and subsequently to the state and national ones, but it will also be presented to
individuals, bioregional communities, partner organisations, sponsors and networks as an invitation to shift destructive worldviews and support the creation of eco-villages and other transition initiatives. A constructive response to all the challenges the world is facing needs to include support for all grassroots movement, just like it needs the support these movements can give to the global efforts.

1.4 The transition movement

“While in the North efforts focus on communal scaling down of ecological footprints, the South efforts are focused on ‘scaling up’, using appropriate sustainable technologies and work with existing underutilised indigenous knowledge to meet basic needs.” (Joubert 2012)

1.4.1 Examples of good practice

Senegal is among the first countries to use eco-village strategies for sustainable development with a Government Agency for Eco-villages dedicated to transitioning 14,000 traditional villages to eco-villages in the next 10 years.

The ANEV (L’Agence Nationale des Ecovillages) development programme in Senegal has four main components:

- Good local governance
- Self-sufficiency
- Renewable energy and the preservation of natural resources
- Promotion of the private sector and sustainable financing

All of these components are contributing to meeting a number of national development targets.

The Senegal example also provides transition indicators useful for this case study:

1. Motivation and engagement of local population
2. Stability and social cohesion
3. State of natural resources and environment
4. Availability of resources – especially soil
5. Presence of other projects or programs to facilitate and create synergies with Ecovillage program - financial perspective
6. Accessibility
7. Size of migration to urban areas
8. Evidence of successful community development
9. Geographical spread

1.4.2 Sustainable development goals (SDGs)

The approaches and proposals in this case study are in line with the United Nations’ Sustainable Development Goals, many of which are directly relevant for Chichihuistan and its bioregion:

1. No poverty
2. Zero hunger
3. Good health and well-being
4. Quality education
5. Gender equality
6. Clean water and sanitation
7. Affordable and clean energy
8. Decent work and economic growth
9. Industry, innovation and infrastructure
10. Reduced inequalities
11. Sustainable cities and communities
12. Responsible consumption and production
13. Climate action
14. Life below water
15. Life on land
16. Peace, justice and strong institutions
17. Partnerships for the goals

The SDG’s are implicitly addressed through the discussion and proposals in the four Gaia dimensions and their integration into an overall development and transitioning approach for the community.

1.5 The role of this Case Study in Transition

1.5.1 The Core Group

This case study is the initial step towards a core group in Chichihuistan, a group that will work on the foundations of what may become a transition initiative. It is necessary to go through the whole process step by step, like in the creation of a social enterprise or a Chichi COOP. Part of the task consists of identifying potential change makers and empowering the organisation of little events that are directly connected to the wellbeing and awakening of Chichihuistan (e.g. cultural music and handcrafts gatherings, waste collecting, children singing and playing, milpa food without GMOs, basic health knowledge speeches, future visioning workshops etc.)

This process is already happening. Some of the people who are engaging in these first steps may become the initiators of the core group of the subsequent transition movement. During the initial process, one of the authors of this case study will walk with the core group and share how transition is done in other places, bringing examples to show what is happening around the world. Chichihuistan is not yet linked with any other ecovillages in its bioregion so doing so may create considerable enthusiasm, especially in the younger generation.

1.5.2 The key issues

The emerging core group should be trained in the key issues of transition:

1. **Healthy Groups:** Learning how to work well together
2. **Vision:** Imagining the future you want to co-create
3. **Get your community involved in Transition:** developing relationships beyond friends and natural allies
4. **Networks and Partnerships:** Collaborating with others
5. **Practical projects:** Developing inspirational projects
6. **Part of a movement:** Linking up with other Transitioners and beyond
7. **Every revolution needs its banners:** the role of creativity in Transition
8. **Reflect & celebrate:** Celebrating the difference you’re making
The purpose of the celebration part is to bring the much needed joy and happiness to the village, creating the fertile soil for regenerating trust and mutual support and contributing to the balance of the three H's:

**The Head:** we act on the basis of the best information and evidence available and apply our collective intelligence to find better ways of living.

**The Heart:** we work with compassion, valuing and paying attention to the emotional, psychological, relational and social aspects of the work we do.

**The Hands:** we turn our vision and ideas into a tangible reality, initiating practical projects and starting to build a new, healthy economy in the place we live.

### 1.5.3 The network

In this rural indigenous context transitioning may be easier than in anonymous urban centres because it is essential to know other members of the community. From there, it will be beneficial to proceed and create the first local network which involves the nearest villages: San Isidro, El Ocotal, Campo Grande, El Carmelito, El Chivero, Nuevo León, San Francisco, Ojo de Tigre, San Antonio, Ojo de Agua. Once the exchange is established (trading, celebrations, partnerships), the process can expand to the whole nearer Bioregion.

The process will benefit from social experience, personal growth and education. In the best scenario, the Bioregion will be like a big family with mutually supported goals, a common striving towards equality and the opportunity for everyone to find their place and life's meaning.

### 1.6 Making of the case study

This case study was done as part of the Gaia Education Design for Sustainability Programme 2016/7. The case study team is grateful for the support and insights provided by Gaia Education and its facilitators.

The case study was completed as a team effort based on dedicated online collaboration of four team members, based in Australia, Croatia, Germany and Mexico (Chichihuistan). The different perspectives resulting from the team’s diversity proved to be a valuable asset.

It is hard to overestimate the importance of the fact that one of the team members lives in the very community whose transition is the subject of this case study. This has provided the team members and their work with irreplaceable information about the current conditions and the general social atmosphere, as well as with reality checks and a strong sense of purpose for this case study.

The process was rooted in the four-dimension approach established by Gaia Education and the Global Ecovillage Network, and adopted by the United Nations, notably for disseminating and implementing the Sustainable Development Goals.

The coherence of the process benefited from the team’s application of Dragon Dreaming in the early phases, when the intentions and directions had to be expressed and agreed upon.

The resulting team-vision for the process, i.e. the purpose of this project was set to be the following:
An inspiring and balanced process for us and a case study that will help inspire Chichihuistan to decide to become:

A deeply spiritually connected, sharing and trustful democratic community, finding its own way to heal itself and the land and transition to:

A regenerative, resilient, just, economically vibrant, educated, balanced, happy, beautiful and inspiring presence in their bioregion and the world.

The team hopes that their good intentions and inspiration drawn from multiple sources can be felt in the proposals made in this case study, and can contribute to the inspiration, happiness and wellbeing of the people and place of Chichihuistan and all those who choose to walk with them.

1.7 Case study structure

The case study begins with a short Vision and Mission chapter. This is followed by a summary of the current situation and context (the complete description can be found in Appendix A), organized into the Four Dimensions of whole systems design in the following sequence: Ecologic – Worldview – Social – Economic. The Design Proposal is then written in the opposite order, starting with Economic and ending with Ecologic. This structure is taken from Karam Kriya (applied numerology). In this way the Dimensions represent a continuous loop of actions where the Economic Dimension takes the central point (the endpoint of description and the starting point for the proposal), as we identified it as the primary point of intervention in Chichihuistan. The case study is summarised in the conclusions which also provides thoughts on next steps.

The further and deeper rationale for the sequence of the Design Proposal is that the first empowering impulse for the community to consider transitioning has already happened in the form of small business pilot-projects such as the production and sales of organic chocolate, sales of organic eggs etc.

This economic activity has sparked conversations in the Assembly and in other less formal situations. It has also activated various groups within the community, especially women and younger men. Obviously, the social aspect of the community is transforming and this is a prerequisite to build the trust within the community to step into the Worldview Dimension.

The need to navigate these transformations has inspired a part of the community to participate in recently started future-visioning workshops. This worldview work is expected to expand and allow the community to steer itself with more awareness and regenerative capabilities.

If steered well, all the process will have a regenerative effect on the ecological aspects too, as this will be a part of planning, education, projects and changes in daily life.

Even though this explains the loop structure of the case study, the actual reality is that all four dimensions are interconnected and the transition can only be achieved by simultaneous work on all of them as part of a complex system. That means different sequences of problem solving actions are running at the same time, while the described one is the dominant one.
Current situation sequence

Design Proposal sequence
2 VISION AND MISSION

The vision and mission of Chichihuistan are to be determined by the people of Chichihuistan within an ongoing collaborative and democratic process most likely facilitated by their Assembly.

However, as a jump start for the community processes in Chichihuistan, this case study proposes projects and activities rooted in the following:

Vision

A web of inspiring rural transition models in the global south, empowering a worldwide grassroots movement to co-create a thriving, brilliant, solidary new world.

Mission

Creating and respectfully educating a transition core group in Chichihuistan to face the challenges of transition and lead the changes to the social, environmental and economic systems while recuperating ancient values, knowledge and skills.

Overarching objectives

Chichihuistan as a:

- Transition model for southern Mexico
- Village where social, ecological, economic and worldview dimensions are integrated into regenerative abundance
- Combination of a cooperative and social enterprise
- Example of how environmental responsibility leads to welfare and ends poverty
- Rural educational centre where indigenous farmers educate all farmers
- Source of empowerment for educational practices based on love, respect and responsibility
- Model for celebrating diversity in a multicultural bioregion
- Place of healing and inspiration

Ecological outputs:

- Reforestation and regenerative forestry
- Water cycle regeneration and water security
- Soil regeneration and sand mine restoration
- Organic agriculture and food security
- Renewable energy and responsible consumption
- Protection of habitats, ecosystems and landscapes
Vision-to-outputs integration diagram

Figure 2-1: Vison-to-outputs Integration Diagram
3 CURRENT SITUATION SUMMARY

Following is a summary of the current bioregional and local situation in Chichihuistan. A full account of the current situation with further details as it was used for the case study is provided in Appendix A.

3.1 Ecological Dimension

3.1.1 The Bioregion

San Isidro Chichihuistan is located in the Los Altos (central highlands) bioregion of the southern Mexican state of Chiapas, 2040m above the sea level.

The climate in the bioregion is humid temperate subtropical with wet and dry seasons. The bioregion is very bio-diverse, but the diversity is falling due to over-farming, deforestation and mining, which also causes erosion and falling freshwater levels.

The biggest city is San Cristobal de las Casas with 200.000 inhabitants, catering for several millions tourists a year. The city and the rest of the bioregion have a very high percentage of indigenous population. Most of the population in the bioregion is Catholic.

The population of the bioregion and the entire state is young and economically poor in comparison with Mexican average, with high emigration. All indices of social development for the indigenous are considerably lower than the nation average. There have been serious abuses of power reported, along with a problematic judicial systems.

3.1.2 The territory of Chichihuistan

Chichihuistan has 320 inhabitants, mostly included in one ejido, traditional farming village cooperative formed at the end of 1990s. The community includes houses with individual gardens, some common buildings, common farming areas and common forests. The village is spread over approximately 100 ha.

The village can be reached by a dirt road and is connected to the state electrical grid (92% of the households). Of all the households, 56% have radio, 50% have television, 0% refrigerators, 0% washing machines, 0% have a computer, 30% have mobile phones. An average household uses one light bulb at night and the radio/TV.

Once extremely abundant with spring water, the area is threatened by deforestation, sand mining and over-farming. In addition to water scarcity, soil erosion and deforestation, there is soil and water pollution, loss of soil fertility, habitat and biodiversity loss, with adverse economic and social consequences. Four illegal sand mines have been closed down recently and are in need of regeneration.

Water springs have less and less water and several are on private land plots, which creates right-of-use issues. They are considered sacred by a part of the community. 84% of the households have spring water available through pipelines. Some springs provide water for neighbouring villages too. 70% of the households have water closets. The effluent from water closets infiltrates into the ground without treatment. Kitchen scraps are fed to chickens and pigs. Plastic waste is either burnt or sold for recycling. There is some interest in composting toilets.
Houses are small and simple, mostly without windows. Sun- and wind- are not taken into account when building. Open fireplaces are used inside, without chimneys. The government plans to provide concrete blocks for building, which would increase the ecological footprint drastically (now it is estimated at 1.7 metric tons of CO2e per year, below the worldwide target).

Chichihuistan produces its own food through subsistence farming based on manual labour and without artificial fertilisers or pesticides. Plant material remaining after the harvest is burnt. There are experiments with bio-intensive agriculture. The diet is based on maize, beans and pumpkins and not very varied. There is limited chicken, pigs and cattle raising. Minimal surplus is sold. Sugar, salt, soap, medicine and cola are significant expenditures for villagers.

3.2 Worldview Dimension

The community is religious. It is divided into Evangelical Christians and Catholics, with worldview differences and tensions between the two groups. There are also some rituals with indigenous roots, like bringing flowers to the water springs. Indeed, the very name “Chichihuistan” is related to water (“breast full of water”). Another example is “Día de los Muertos” (Day of the Dead).

Despite the religious practice, the relationship with the environment is not in balance. This is manifested in the destruction of the natural environment, but also in health problems of the
villagers. It is not understood that unabated tree felling and polluting the soil and the water has consequences on the health and wellbeing of the community.

Poverty and the influence of the television and the city lifestyle in San Cristobal are creating longing for symbols of wealth, such as concrete houses, cola, emigration to cities and the USA.

Even though some regional villages are, in terms of worldview, very close to the Zapatistas and some others in much more contact with their indigenous heritage, the social, economic and ecological challenges are very similar. This provides the need and opportunity for collaboration within the bioregion.

3.3 Social Dimension

People in Chichihuistan make decisions in assemblies, where in theory every voice is listened. But the most charismatic members have more influence, and now the assembly got too big to go on with the ancient form of decision making. The Assembly Head (Comisariado) is elected for 3 years and is the ultimate instance to decide in difficult situations.

There is also a judge, different policemen, four persons in charge of the drinking water, an educational pillar, a team which is responsible to maintain and improve the streets and bring new subsidy projects from the municipal government (like housing, improving the electricity).

These instances react when there are problems, but they are not creatively proactive.

Social conflicts include:

- Private landowners (mostly of them also are Ejidatarios) vs Ejidatarios (people who are just part of the common land)
- Catholics (who mostly are Ejidatarios) vs Evangelists (who mostly are private landowners)
- Old vs young
- Local people vs newcomers in the last 8 years
- Those who still have water vs those who are connected to mostly dry springs.

People get married and have children when they are very young. They live with the husband’s parents until they are able to make their own house. There is one kindergarten with “volunteers” posted by the state. There is a primary school with two teachers nearing retirement. Many people are not able to read or write. There is no official state healthcare for the 17 indigenous communities in the area, but the “Sanando Heridas” doctors and nurses provide basic free assistance once a month.

3.4 Economic Dimension

The tribe of Chamulas (Chichihuistans ancestors) where a big tribe of intelligent commercially oriented people and knew that you had to have something to be able to trade it for direct goods or a local currency. The ancient Mayans converted all their surplus into gold. In Oaxaca (a federal state of Mexico) this is still done. The farmers on the other hand have the tendency to convert their money into pieces of land. Local people do not really trust in something with artificial value.
Nowadays, most of the older men (from the age of 35 upwards) just work in the fields. Crop surplus after the harvest brings very little money in. The men sometimes work on construction sites where they earn about 10 dollars/day.

Younger men are reluctant to do this kind of hard work and are sent by families to take low-income jobs from the age of 14.

Women mostly don’t work for money. They take care of the household and children, wash by hand, bring the water when the springs dry out, bring the scarce firewood. The government provides them with about 50 dollars/month per every child that goes to school (4-12 years of age). Some women started to sew and make local ancient textile handcraft which is cheaply sold to middlemen.

Trading generally is informal and happens spontaneously. Now and then the people sell a few eggs to Inla Kesh who sell it further on the market in San Cristobal.

By the end of the week many families don’t have money and they borrow small amounts (50 dollars or so), with an interest of 10-20%. In addition to that, trees are indiscriminately cut and cheaply sold as raw material, and entire pieces of land are sold to people looking for a place to settle.

There are a few shops in Chichihuistan and they sell sugar, salt, soap, junk food, chips, cola. Some people buy each day a three-litre bottle of “Big Cola” that costs about 1/3 or 1/4 of the daily average income. The area has a very high diabetes rate.

This condition of just surviving until the next day, week or month does not have the vitality to create better life circumstances that would give the people the freedom and energy to reflect deeper on the reasons for their circumstances and transform them into opportunities. With a stronger economic foundation, the springboard can be created that would allow the people in Chichihuistan to rebalance their lives in the realms of the Social, Worldview and Ecologic Dimensions too. Therefore the project proposal will start with the Economic Dimension.
4 DESIGN PROPOSALS FOR ECONOMIC DIMENSION

4.1 Economic Blueprint

“The purpose of our local economy is to maximise the happiness and wellbeing of our entire community – to create an abundance of opportunity to satisfy our needs, and use and distribute resources fairly, and in a way that respects natural limits” (REconomy Network)

4.1.1 Multidimensional Economic Value

Transitioning Chichihuistan from its current status into an Eco-community with the creation of local and bioregional ecosystems of social enterprises is a core part of the project's vision, mission, purpose and expressed in the core values, in order to create locally regenerative and thriving economies. If we manage to support local communities to thrive and become members of wider bioregional and global support networks, Cosmopolitan Bioregionalism on a daily basis will be the result.

If the people in Chichihuistan can bundle their energies and qualities and collaborate, they will create a more stable and wealthy situation for themselves. In a way, the whole project of Transitioning Chichihuistan can be turned into a Social Enterprise. Habits will have to change in relation to worldviews, production and consumption patterns, education and rethinking the economy and the relationship with nature. All this will emerge in this Economic dimension, driven by desire to: stop poverty, stop hunger and create wellbeing, health and happiness.

4.1.2 Values

Envisioning a Cooperative, we identify the importance to be consistent with our core values: solidarity with all living beings, respecting Earth rights, mutual support, trust, equality and transparency. We as mankind have to go together on the way to deeply understand the urgency to integrate a sustainable human economy into the ecological life-sustaining and life-regenerating natural cycles.

4.1.3 Mission

These values have to be evident in the project and part of our daily life. Right from the start we have to plant the basic strategies so that these pillars can prosper and thrive in a healthy, vibrant way to be able to create a strong and thriving human foundation, so that an abundant Cooperative can emerge.

4.1.4 Challenges

Facing the conditions of poverty, inequality, bad nutrition, lack of a good education, nearly non-existing health system, exploitation of human resources, social and gender injustice, we realize that all of these are going hand in hand with the degeneration of nature. If people understand that the economy depends largely on a healthy environment, and act in accordance with this knowledge, everything will start to improve.

The first 4 SDGs are directly addressing the primary needs that require attention in the transition process in Chichihuistan: No poverty, Zero hunger, Health and Education. It is impossible to start working on one of these goals separately because they are strongly interconnected and need to be treated simultaneously. As long as people have to contribute to
the family economy starting at a young age, it’s logical that they don't have the time to improve their education. Without the improvement of education, we can hardly step out of this vicious cycle of scarcity.

4.1.5 The Economic Reality in Chichihuistan

A short reminder of the economic reality: Daily income:

♂ 100-200 pesos (5-10 €) and
♀ 0-15 pesos (0.80€)

As a local woman testified, “In Chichihuistan we can life calmly. In Betania [a nearby town with 2300 inhabitants] you need money for everything, in Chichihuistan not…” A lot of people are willing to change basic goods for others (barter) and the need to cover artificially created needs or wants is quite small. People don’t know what it means to travel, to pay for cultural events, to pay for gas, for oil to heat their houses, to have access to special internet and telephone plans, to pay exorbitant rents to have a house, to pay high electricity bills (the average is 3 euros every 2 months) and a large sum on securities and memberships.

Objective: Our opinion is that if Chichihuistan learns how to grow and live in their limited territoriality, respecting nature and natural cycles, reviving ancient wisdom and fusing it with a holistic education, the economic and general life quality will immediately start to grow. So in short the objective is to help them to help themselves. We think RETHINKING CAPITALISM can lead to understanding that in all vibrant, long-lived systems a Regenerative Economy must be designed to work as an integrated whole. It must not only value all of its parts, but it must nourish, develop and empower them. It must maintain balance, circulation, innovation, and learning because these too are essential to holistic health. It honours community and place and cultivates common-cause synergy at the “edges” because only by bringing forth and connecting the unique colours of each element can full vibrancy be achieved.

4.2 Proposals of Solutions

The way forward is to find ways to finance the secondary and professional education so that all 4 SDGs can be fostered at the same time. This will contribute to:

- The creation of a need-based local economy that respects natural laws.
- The creation and empowerment of regenerative bioregional enterprises.

Successful examples

We started to design the land with the aim to create a “water landscape” (as proposed by Sepp Holzer). So from the very beginning we needed the help of local people. We decided to work with young people and to train them every day for 2 hours theoretically in the four aspects of sustainability, but mostly touching the ecological one. Being paid a decent salary and getting training was very surprising for them. These different “working” conditions from the beginning gave the people a feeling that we really are walking with them and they started showing trust. Having established trust, we started to work in the same manner with the young women in the food sector, with the natural-building team, with some young men in the Bio-intensive gardening method. A web of trust is being built up and a lot of young people are asking if they can join in.

Another positive impact happened with the young men who started to train in a recognised educational institution. A carpenter, a shoemaker and soon also a cook will start this official
journey of training. Having been given the chance to work and have an income, young women gave money-support to their families and so their brothers were able to do this transformation.

### 4.2.1 Turn the impression of disadvantage into advantage - from scarcity to abundance

The first impression of Chichihuistan to be in a point of big economic and general disadvantage in comparison to urban centres can turn out to be an advantage if the natural resources and advantages of the place are used positively. Transitioning from poverty to sustainable and regenerative lifestyles will be easier than in a more complex system that needs to de-grow. In such a complex system, the task is to change habits in nearly all areas of consumption. Considering the strong influence of the virtual world, it is nearly unthinkable to live without credit cards, bank accounts, smartphones, holiday and leisure time, hot showers at all times. In such a reality, a transition to regenerative strategies and lifestyles is often seen as a step back to the “cave-age”.

### 4.2.2 How will we make a good start? (Pre-Start Phase)

![Figure 4-1: REconomy Project Development Process](image)

We propose to follow the flow of the diagram (Figure 4-1):
Step 1. The Big Idea of building up a COOP or opportunity of transitioning Chichihuistan to an ecovillage emerged

Step 2. Working up and testing the idea (the chocolate and food production, as well as carpentry have now been running for one year.) Starting small-scale production to test the market (for each product).

Step 3. Who’s in? Who will own and control this enterprise?

Step 4. Show me the money. Putting in the numbers and creating financial projections.

Step 5. Getting organised. Creating the legal entity for the enterprise.

Step 6. The Master Plan. A plan of what we intend to do and how we are going to do it (there will have to be a core group and if possible the students/workers).

Step 7. Start trading.

Have in mind: Making a common Vision with the Whole Group may bring other proposals.

Additional questions: What do we like to do? Where? For how much money? When?

4.2.3 At the end of this Pre-Start Phase, there are three choices:

9. To stop as maybe the figures don’t add up or we don’t have the time, skills or energy to proceed.

10. To go back and redesign the enterprise (change the model, costs, products etc.) so that it becomes feasible.

11. To Carry on; the idea and enterprise look realistic and achievable. At this stage we are in an ideal position to engage with an advisor who can help us work on our idea further, engage with funders and create the enterprise.

If we dare to go on we propose a:

4.2.4 SWOT analysis

Directly after the Big Idea inspired by REconomy we use the SWOT analysis as a reality check. The group will draw up a list of achievable outcomes that are consistent with each other, that everyone is happy with and that they will commit to. At this point it will be useful to facilitate any difficult conversations around the motivations of those involved.
4.2.5  The Elevator Pitch or Project Overview

Our primary motivation is to empower the community of Chichihuistan to find a way to abundance, wellbeing, equality, good livelihood, create more awareness of the context they are living in so that they can finally be able to create a sustainable life in a collective way. The empowerment is directed to the improvement of the education and the general elevation of self-awareness, self-esteem, solidarity, generosity, strengthening the conviction that we have to become proactive to become part of the solution. But education is only possible when people have some income.

4.2.6  Create a Social Cooperative

We therefore thought it might be good to create a Social regenerative COOP with progressive rights with some special conditions that would need to be accepted by the young people and by their parents:

- They have to agree in a signed document to join the additional basic education program designed by the core group for the period of the following three years. It would include the practical part of the education, and applying the obtained knowledge and know-how through service to the community (12 hours/month) within student-designed projects.

4.2.7  Working and testing the idea

A Feasibility Study

In this report we would like to put together all of our research and evaluation, including the information in our marketing plan.

But we are aware that we are not able to do so at this moment for all our proposals of the different dimensions because we don’t know a lot of the details of the real decisions which will emerge in the future stages of project development (once we will have designed our “masterpieces” in carpentry, upcycled textiles and so forth). This will be the moment to make a
credible feasibility plan. Starting small is what we suggest with pilot projects and prototypes, and the obtained earnings will be invested in the next step which we will decide communally, in order to create our Dream of Transition Community Enterprise in a Transition Village.

We are aware that the feasibility study gives evidence as to whether the enterprise as a whole is viable and feasible and gives a rough idea of the figures in terms of money needed to start, pricing of our product or service, turnover needed to break even and overheads.

**Already happening regularly:** Chocolate, Sauerkraut, Marmalades (2days/week), holistic Education (3days/3hours/week), Carpentry (5days/week).

**Already tested in smaller projects and with a good base of people who would like to work there:** natural building (“Bio-construction”), water management, organic agriculture,

**Completely new proposals without testing:** BioHighTec Energy\(^1\), clothing transformation (Highcycling\(^2\) of textiles).

At this moment we are able to share the profit of the chocolate production/education. Every week we have a profit of more or less 200€ (and following the evolution of the enterprise in a longer time frame, it seems to be viable and can keep on growing further). The growth from 0 sales to 500 chocolates/month happened in one year.

Until now, we have been working in the kitchen of Inla Kesh, but a real laboratory/kitchen/storage needs to be built and provided if we want to be sustainable and grow (to 8 full-time working people within a year).

**Who is in? Commitment stage and the key question: Who is involved and how?**

There are numerous possibilities around the involvement of people in the enterprise, from a sole trader to fully mutual co-operatives where the enterprise is owned and controlled by everyone it trades with. The process of running the enterprise by those who own and control it (the members) is generally referred to as its Governance. We can create an enterprise with pretty much whatever governance the people want; the trick is to agree right from the start.

There are 3 different workable models for the enterprise:

1. **Grower**
2. **Community led**
3. **Multi-stakeholder**

After that we have to define:

**Working groups:** Work and associated sub-groups to create work strategies in those different work-streams with a clear idea of who has to do what when.

---

1 Bio High Tec energies is a new term from the solar village founder of Tamera. He refers to the “fixed focused Mirror” an improvement of the Mirrors. It is able to heat up stones to high temperatures, and be able to cook with them 24 hours. A surplus of 3500W produced and is able to produce Hydrogen…. so he thinks that it is time that we change our thinking in terms of “LOW” and become more competitive with all the High-tech technology

2 A term that supports the awareness that we can be competitive with branded clothes.
Stakeholders

- **Local Stakeholders**: Comisariado, Assembly members, Inla Kesh, Tierra Plena, Tierra Corazón, Creating a Group of Friends of Chichihuistán.
- **Municipal**: Priest, Pastoral de la Tierra.
- **Regional**: Pastoral de la Tierra, DESMI, Paz Creativa (Inspired by Education 3000), Jesuitas.
- **National**: Pi Pau Angelitos de los Niños, Warupa, Rio Abierto, Solidary Enterprises of Mexico
- **International**: Tamera, Gaia Education, Gaia University, Schumacher College, Global Ecovillage Net, Warriors Without Weapons, Friends of Chichihuistán.

**Fundraising: Show me the money? Funding and Finances**

As a start-up enterprise, we will require initial funding. This money is needed to buy tools, create infrastructure (like workshops), support professional education buy materials to make the products, and pay for things such as utility bills, wages etc. until the business starts to generate some income. We don't want our enterprise permanently reliant on this kind of finances. We want to be self-sufficient and accept all the phases of our Enterprise Development.

**Reality Check**

At this stage we can also start to collect information relating to possible premises, equipment, suppliers, staff requirements etc. and start to budget for how much money we actually will need upfront to get started.

**Start-Up Finances**

We can categorise start-up finances into 3 main types:

- Grants and donations: Money that we don't need to repay, but normally do need to spend in accordance with the wishes of the funder. (Especially related to the ecological dimension - regenerative part).
- Peer to Peer fundraising or Peer to Peer loans.
- Crowdfunding: Kick Starter, Indiegogo...
- Special personal Change Maker potential support Ashoka

**Where?**

In all of the different sectors we need to start or improve different subjects (material/knowledge)

**Chocolateria:**

Basic Tools: stainless steel working tables, fridge, mill, machine for mixing, basic hand tools, moulds.

Learning about professional chocolate production in Sicily for one month in order to improve our product.  

---

3 Recent Invitation from Gaia Migrant Project (Sicilia Integra) which is focused on Pasta. They like to collaborate with the women's sector of the Chichi Cooperative
Carpentry: We have a lot of hand tools but we still need a workshop because we are working on our terrace. We will get a table saw and a planing machine as a donation from “Sueniños”, but we urgently need to have a workshop. To be able to educate 8 young people every year we also need a few basic tool sets for carpentry, worktables, hand saws, planers, gouges, sharpeners, different clamps, work-safety equipment and clothing.

Tree nursery/Organic farming: Basic tree nursery for 20,000 trees, watering system, seeding bags, hand tools, seed collection tools, basic garden tools (shovels, forks, wheelbarrows...).

Textile Workshop: Infrastructure, five sewing machines, basic sewing tools, tables, wardrobes, local weaving frames, irons.

Administration: 2 computers, telephones, software, internet access, webpage, accounting support,...

These are the first needs in the urgency list and the primary investments which will improve the already existing enterprise-starting impulses. The water restoration, natural building and sustainable energy are considered in the next phase (2019) of our development vision, because in this moment we don’t have any energy and resources available. Even if we have the necessary tools for Natural Construction and hand-dug water wells, we have to find a way to promote all the services we are able to give for and by Chichihuistan. In the sustainable energy section we have to find trainers, educate the students and start when the training period is finished.

Fundraising Goals for Chichi goes COOP

<table>
<thead>
<tr>
<th></th>
<th>Chocolate/Healthy food</th>
<th>Capintry</th>
<th>Hight cycle</th>
<th>Tree nursery</th>
<th>Education</th>
<th>Administration and Sales</th>
</tr>
</thead>
<tbody>
<tr>
<td>Building/Infrastructure</td>
<td>20,000.00 €</td>
<td>10,000 €</td>
<td>10,000 €</td>
<td>5,000 €</td>
<td>10,000 €</td>
<td>2,000 €</td>
</tr>
<tr>
<td>Basic Tools</td>
<td>6,000 €</td>
<td>5,000 €</td>
<td>5000</td>
<td>2,000 €</td>
<td>2,000 €</td>
<td>2,000 €</td>
</tr>
<tr>
<td>first grants/students (1st year)</td>
<td>0 €</td>
<td>9,216 €</td>
<td>5,850 €</td>
<td>2,304 €</td>
<td>0 €</td>
<td>0 €</td>
</tr>
<tr>
<td>first wages</td>
<td>0.00 €</td>
<td>0 €</td>
<td>0 €</td>
<td>0 €</td>
<td>25,000 €</td>
<td>6,000 €</td>
</tr>
<tr>
<td>Raw Material/Consumables</td>
<td>0.00 €</td>
<td>500 €</td>
<td>200 €</td>
<td>300 €</td>
<td>500 €</td>
<td>300 €</td>
</tr>
<tr>
<td>Total</td>
<td>26,000 €</td>
<td>24,716 €</td>
<td>21,050 €</td>
<td>9,604 €</td>
<td>37,500 €</td>
<td>10,300 €</td>
</tr>
</tbody>
</table>

Total all Workshops 129,170 €

<table>
<thead>
<tr>
<th></th>
<th>Bioconstruction</th>
<th>Sustainable Energies</th>
<th>Water Management</th>
</tr>
</thead>
<tbody>
<tr>
<td>Building/Infrastructure</td>
<td>0 €</td>
<td>0 €</td>
<td>0 €</td>
</tr>
<tr>
<td>Basic Tools</td>
<td>0 €</td>
<td>0 €</td>
<td>0 €</td>
</tr>
<tr>
<td>first grants/students (1st year)</td>
<td>0 €</td>
<td>0 €</td>
<td>0 €</td>
</tr>
<tr>
<td>first wages</td>
<td>0 €</td>
<td>0 €</td>
<td>0 €</td>
</tr>
<tr>
<td>Total</td>
<td>0 €</td>
<td>0 €</td>
<td>0 €</td>
</tr>
</tbody>
</table>

Table 4-1: Fundraising Goals for 2018

Reflections and explanation of Table 5-1:

- In all the proposals we need to improve or create new infrastructure.
- The Chocolate/Healthy Food section is already self-sufficient, and able to pay all the grants of the students/ Coopioneers⁴.

---

⁴ Coopioneers: pioneering members of the pioneering cooperative.
Carpentry: First we have to train all the students/Coopioneers. In the first six months we estimate that we can produce just simple small things to sell. After that we can probably produce some more complex goods to sell, and part of the students grants required can be paid by the students themselves.

The High-Cycle Textile: Same as with products from carpentry, but maybe we can start to sell after a shorter time. It very much depends on our publicity and marketing outcome.

Tree Nursery: We see two persons who can start to train in this section. From the start we have to look for grants. In the second year we can start to sell trees, seeds, tree crafts to be able to pay wages and grow the nursery for the next generation of students/Coopioneers.

Education: We will have five main facilitators who will be part of the knowledge sharing and will be the initiators of each enterprise. All the facilitators will get a starting salary of 500€/month for 8 hours/day, 5 days/week (8000 Pesos Mexicanos). The mid-term aim is that each section be able to pay each facilitator from the created income. And the long-term thinking is that each Coopioneer will gain the same income.

The required funding for a student scholarship is 120 pesos/day or 1920/month for 4 hours training, 4 days/week (23040 pesos/year).

The sections of natural building (Bio-construction) and water management have all the tools and will generate their own income in the moment they find contracts.

Sustainable energy: At the moment there is insufficient experience and a lack of community agreement on what needs to be done, so this issue should be brought up in the Assembly.

It will be important to agree that all the above mentioned enterprises should mutually support each other and link in tightly with the operation and flow of the community, reflecting and living its vision, mission, purpose and core values.

Inspired by REconomy- Seed Funding

We consider to regard the information from the REconomy field guide to transition core resourcing as well to achieve local and regional financial support. We have to resolve seed funding and then find our way in our recovering strength. The economically weakest segment of the COOP will certainly be the educational sector, with the aim to be affordable to people/children with low income. Here our focus will be to find monthly donations, grant fundraising and funding for a special Co-ordinator. It is of utmost importance to establish partnerships with other educational Institutions by means of memoranda of understanding.

This includes the focus on long term volunteer work.
Additional business opportunities are:

- Regular experiences or hands-on courses in Chichihuistan
- renting out core activities (water retention landscape construction, Bio-construction, social-skills courses)
- One percent of the revenue for every sold product which leaves the COOP is directed to the support of the educational project and another one percent is directed to ecological regeneration projects.
- C02 emission coupons to persons/institutions in the Global North

4.3 What kind of enterprise? What legal structure can we imagine?

4.3.1 Why Merging? COOP+ Regenerative Transition Enterprise

A cooperative is an autonomous association of persons united voluntarily to meet their common economic, social, and cultural needs and aspirations through a jointly owned and democratically controlled enterprise. It is based on the values of self-help, self-responsibility, democracy, equality, equity and solidarity. In the tradition of their founders, cooperative members believe in the ethical values of honesty, openness, social responsibility and caring for others. We would like to add to this legal form the basis and recognition of regenerative enterprises that proactively grow and cultivate the foundation pools of social, cultural, spiritual and living capital by providing goods and services in a way that creates net positive gains for the system as a whole.
4.3.2 A Regenerative Enterprise

A regenerative enterprise should be designed and function within the context of a holistic model of economy, based on eight forms of capital.  

![Diagram of the Eight Forms of Capital]

*Figure 4-4: The Eight Forms of Capital*

The core of it is to redirect focus and work away from financial capital, more towards nurturing the social, living, spiritual and cultural capitals to optimise for multi-capital abundance.

Hence for the Chichi community it will be useful to map and analyse each and any business and social enterprise venture through the 8 capitals framework and to see how to balance and optimise them for the benefit of the whole community and environment in order to revitalise and regenerate locally and bioregionally for the creation of win-win-win business models.

One of our social goals in Chichihuistan is to generate easy, inspirational educational material. The 8 capitals are an example that we would like to convert into something easily understandable for illiterate people, because each person has a capital and can add something to the whole. In the moment when everybody understands that he/she has capital, that he/she is worthy, the mindset changes and the self-esteem increases along with the ability to collaborate in a bigger system and step out of fear and scarcity. This bigger system will be the “Chichi goes Coop” initiative, where everybody has some capital to contribute. All together we will be strong, sustainable and resilient and maybe even regenerative. This will create a different form of enterprise.

At this point, we see it would be beneficial to merge the concept of a Transition Enterprise (TE) with a social & regenerative enterprise, as a financially viable trading entity that fulfils a real community need, delivers social benefits and has beneficial, or at least neutral, environmental impacts. (The last part is important for us to consider, because the first step in Chichihuistan may be stopping harmful environmental actions and soon after that start with regenerative actions.)

---

5 Actually we are missing an important 9th capital: that is the capital of one’s level of consciousness.
4.3.3 A Transition Enterprise has certain characteristics:

- **Resilience outcome** – Transition enterprises contribute to the increased resilience of communities in the face of, for example, economic uncertainty, energy and resource shortages and climate change impacts. As part of their community, Transition Enterprises are also resilient in themselves, seeking to be financially sustainable and as independent as possible of external funding.

- **Appropriate resource use** – Transition Enterprises make efficient and appropriate use of natural resources (including energy), respecting finite limits and minimizing and integrating waste streams. The use of fossil fuels in particular is little.

- **Appropriate localization** – Transition Enterprises operate at a scale appropriate to the environment, economy and business sector with regard to sourcing, distribution and interaction with the wider economy.

- **More than profit** – Transition Enterprises exist to provide affordable, sustainable products and services and decent livelihoods rather than to generate profits for others. Transition Enterprises can be profitable, but the use of their excess profits prioritises the community benefit rather than benefit to investors.

- **Part of the community** – Transition Enterprises work towards building a common wealth, owned and controlled as much as is practical by their workers, customers, users, tenants and communities. They have structures or business models which are as open, autonomous, equitable, democratic, inclusive and accountable as possible. They complement and work in harmony with other Transition Enterprises.

4.3.4 Structure – creating a legal vehicle for our enterprise

As mentioned above, in our opinion the COOP entity would serve Chichihuistan the best, but upon deeper analysis there might be a need for two different legal structures in order to start up processes. First an NGO entity (for all the educational issues we have to handle and start resourcing to a legal entity, creating a bank account, etc.). Later the cooperative entity. It is important that our enterprise be registered in a legal form to create a bigger visible impact and have more international backing. In this country where most of the money disappears in doubtful channels and is used in contradiction to most of our values we dare to be the change that we like to see in the world, giving trust in advance.

For the fusion of all these enterprise options it will be important for the Assembly to democratically determine how ownership and income is being treated, shared and organised in order to have to most beneficial effect for the community as a whole.
4.3.5 The Master Plan

Figure 4-5: CHICHI COOP Products and Services

What are our product and services?

The manifestation of our values is represented in quality physical goods and services. The ones that are the most appropriate for Chichihuistan in our opinion are: food production and transformation, organic agriculture, handcrafts, natural buildings and crafts, service to the bigger world community to conserve the forest, renewable energies, and regenerative education. More specifically:

- Local organic grown and processed food production for health of people and nature (chocolate, sauerkraut, kombucha, stevia, organic, healthier “Chichi Cola”).
- Adding value to the wood which is cut and growing new trees in a nursery in order to produce deeply useful products: furniture, toys, jewellery, household items, and educational material.
- High-cycled clothes as an alternative to unhealthy and destructive cycles of clothing industry and consumption (and re-introducing indigenous styles).
- Using nature’s renewable resources in a reasonably low-tech way: natural building (Bio-construction), Bio High Tec energy products (fixed focused mirror, micro hydro, handmade personal windmills, hand-dug water wells and wind water pumps).
- Practical, open-minded, empowering and participatory education: literacy, EDE, Permaculture, community building tools, Dragon Dreaming, NVC, Bio-intensive agriculture, water management, conflict management/resolution, governance, …), cleaning agents(Soap), local ancient natural medicine.
We imagine all the sectors to be interconnected and have a common umbrella COOP administration. But each little sector has to handle its own basic administration.

All the services and products are attending first to the local needs, while the surplus can be traded/sold in Chiichihuistan and near surroundings, and later in San Cristobal, Tuxtla Gutierrez, tourist centres, Caribe Maya, Cancun and maybe abroad (with awareness about CO2 emissions and pollution). More details can be seen in Figure 4-6.

Chichi Goes COOP Business Model Plan

Example:

![Figure 4-6: CHICHI COOP Business Canvas](image)

Marketing experts often refer to all of this as the “Marketing Mix” or “the 4 P’s”:

- Product (or Service) - Price - Place - Promotion: Putting the right product, at the right price, in the right place at the right time. Being aware of this Marketing Mix and the rhythm of the transition process will give us the right indication for when we have to train, act, network and when we have to sell and what.

Financial Planning

In order to engage with funders, we need to convince lenders or investors that we really have financial projections and not seem to follow just a charitable aim. We also need to be confident in our ability to deliver our COOP enterprise as a sustainable project.

- **Cashflow projection** – a realistic prediction of the actual cash flow over a shorter and longer period.
• **Profit and loss projection** – a regular summary of incomes and expenditure that allows us to see how profitable the enterprise will be as the enterprise trades over time.

• **Balance sheet** – a predicted snapshot of the assets and liabilities of the enterprise at a given time; what the business is “worth”.

### 4.4 Bioregionalism and Alternative Trading Forms

All these activities will have an important and direction-setting impact on the local and bioregional economies: Bringing money and resources in and avoiding draining local resources out. The moment when all the Coopioneers agree to establish the COOP will be the crucial point and it might be the right time to propose to start a local/bioregional currency, so that a part of any price can be paid in this new currency system and the other part in normal pesos. Barter, local creative exchanging systems, time banking, gifts, donations are all part of this proposal of alternative trading forms. We can invite a linked association “Cambalache”, whose aim is to create a barter centre in San Cristobal de las Casas, to start with a big celebrative event of bartering goods from San Cristobal, with food or other services from Chichihuistan and neighbourhood.

Such a “celebration” will be a fantastic way to show that we all together made a big step forward to change from a system of scarcity and lack of resources into a viable barter system that supports fair relationships with everybody and benefits the regeneration of degraded surroundings. We can see that an open system where we can invite more initiatives to come together and create collaboration will be stronger than staying local. Circular economics also becomes a point of the education/celebration agenda to underline the importance of bioregional investments and spending.

The mapping of raw materials, goods and services available locally and bioregionally to support and build a regenerative economy and local livelihoods for Chichihuistan, is the foundation for creating a whole-systems understanding of the region. It shows options for collaboration, exchange and further development and at the same time shows the link to a global network for dialogue, learning, exchange and collaboration. This may be achieved with some of the possible “earthpreneurship” ventures for the creation of local livelihoods described above.

“What is critically important is for a community to start putting all the pieces together in one place. Then, and only then, can you begin to enjoy the synergies that occur when local ownership is linked with local production, local investing, local purchasing and local employment” – Michael Shuman

**What would an economy that “honours community and place” look like?**

Public policy encourages and fortifies a diversity of unique, collaborative, place-based economies at multiple scales: from community, to city, to regional. Each is a core node in a global interconnected economy that engages in trade from a position of place-based resilience and strength. For Chichihuistan it is an opportunity to recover the strength of mutual support and consciously choose the way of a win-win-win venture.

### 4.5 Externalities and Subsidies

In order to avoid harmful influences and create a positive impact in our production chain and economic transactions, we will prefer relationships with entities with the same values (e.g. Organic, Fair Trade, B-Corp, etc.). We like to have transparency about the source of money
and to choose if we want to accept or not, in case money would come from sources that involve injustice, violence or environmental degradation.

We are aware that a lot of funding sources involve injustice and we will be careful to measure what we are able to accept and what not.

4.6 Implementing SMART Criteria: Specific, Measurable, Achievable, Realistic and Time-Bound

S: Realize seed funding.

M: Start with the amount of 37.500€ for the educational sector as the seed for the whole COOP, chocolate factory, carpentry, administration, tree nursery, High-cycled clothes.

A: We have to learn about grant-fundraising, include the cost in the project funding and find a good fundraiser.

R: As we work with all these aspects, we will design a web site in order to become more visible and find more stakeholders and friends.

T: All this in a time frame of one year.

4.7 Revitalization of local economies/ Right livelihood closing the loop

Showing an understandable loop means that the profit of local products has to be invested in Chichihuistan to create local wellbeing inside of Chichihuistan and avoid leaking to external entities. Working locally, investing locally, and growing local wellbeing can be an easy power statement that helps people see the whole loop. Strengthening local enablers\(^6\) will lead to a cultural shift and invite to invest in a community-centred way. A part of the dream is that the community will be able to support THEIR enterprise.

Attending to the basic needs of Chichihuistan means the following:

Quality products will first be consumed in Chichihuistan and the surplus will be sold. A local tool library will be created. Local currency, barter system, and time bank will be created. Local alternative markets in San Cristobál de las Casas will be accessed as a collaborative effort. All this will help to strengthen the economy of Chichihuistan.

4.8 8. Profit? What is that in Our Transition, Social Regenerative Enterprise?

Our economy is inspired by Biomimicry: How does nature invest?

Learning from nature, we encourage individuals, businesses, organizations, and governments to mimic nature’s practices of investing: locally, intimately, diversely, and primarily into living capital.

- Profit is not the primary purpose of our enterprise. It exists to deliver its social, environmental and/or community objectives, and not to make money for speculative investors, although it can reward them appropriately for the use of their money.

\(^6\) Things that support or provide infrastructure for new or existing businesses.
• Any return on investment is only at a level sufficient to attract the investment in the first place.
• We are envisioning that profits are principally reinvested in the COOP enterprise “Chichihuistan” and nearest surroundings, regeneration of damaged ecosystems, water supply, and health and education system. In a broader sense it will be used to benefit the wider community rather than just enrich individuals.

4.9 Education

Education and lifestyle choices are linked together. Right livelihood is about doing our best so that we not only earn money in our lives, but that the fruits of our labour provide social, ecological and economic benefits for our families and communities, in some case even for all of humanity and the community of life.

To be a part of the “Chichi goes CO-OP” cooperative means that there has to be a commitment to permanent education and personal and communal development, which will be organized from the educational pillar of the cooperative. This education will be based on the situation in Chichihuistan and will be the entry point for changing to a different lifestyle choice which at the end will support changing the global system.

How to make Education affordable

We considered two options:
1. Search direct support(ers) for young people (15-18 years old) who want to have access to an upper educational quality cycle.
2. Create the conditions that they (12-15 year-olds or older) are able to earn some money to collaborate with the family economy in a healthy, thriving, "all-together" atmosphere and have sufficient time and support to improve the personal and community education and finally obtain a recognised profession.
4.10 Implementing Generosity

Drawing inspiration from Gif-tiv-ism will be a great opportunity to shift from the mentality of “What can I get for me” to “what can I offer to the whole”. Focusing on this first step, a practical proposal could be: giving special “Chichi Generosity Cards” to everyone. The cards can be left in the place where we acted in a generous manner to make the contribution visible, but anonymous. This may inspire others to follow the chain. Another way to practice Gif-tiv-ism could be to give each consumer of our products a little card with a guarantee to plant 10,000 trees per year in order to decrease CO2 levels and increase those of oxygen.

4.11 How Do We Build Regenerative Vitality in Chichihuistan regarding the 4 dimensions?

Based on 8 Key Principles:
1. In Right Relationship (worldview)
2. Views Wealth Holistically (worldview)
3. Innovative, Adaptive, Responsive (ecological, social)
4. Empowered Participation (social)
5. Honours Community and Place (ecological and social)
6. Edge Effect Abundance (ecological)
7. Robust Circulatory Flow (economy)
8. Seeks Balance (all dimensions)

4.12 Ecological Regeneration Plan

The regeneration of the degraded land has to be considered separately because regenerative actions in this area are not profitable.

Regarding the size of the regeneration task for Chichihuistan, first we have to invite an ecological economist to estimate the generated damage. At this moment we do not have a clear image of the amount of capital are we losing every year until we find a way to re-
establish the constant flow of water and hold it in the land for use in the dry season. Not harvesting the water, draining the wastewater without any treatment, the ongoing deforestation etc. are all acts with a negative economic impact to the community and obviously to life as a whole.

When the assembly considers it is the right moment to intervene in this vital issue, we have to present the costs of making a whole topographic survey of the area and also the possible purchase of the sand mines and key areas of ecological importance. Starting regenerative processes with check dams, vetiver cultivation, reforestation and water retention spaces will incur costs which we cannot calculate at the moment due to the lack of concrete survey data about the region.

Mapping can probably be done with the help of professional volunteers, with the desire to present a project, in the form of topographic and various ecological, social and economic maps of the community within the bioregion.

Regeneration is usually a non-profit venture and it will definitely require sponsorships and volunteers. However, there are certain forms of regeneration that can yield some income:

- Regenerative agroforestry.
- Eco-museum about the influence of sand-mines and ways to regenerate them.
- Potential eco-tourism based on the previous point.

4.13 What more do we need?

- Volunteers with special skills for the training phase: Textile handcraft skills, ecological survey skills, restorative environmental skills, water and land healing skills, healthcare (especially prevention) skills, sustainable energy skills, fundraising skills, marketing skills, administration skills, basic educator skills, community development skills, governance skills, etc.). They should have a desire to be in Chichihuistan for a longer time and lead a specific project.
- Materials and goods for the workshops: All types of carpentry tools, industrial sewing machines and material for a sewing workshop, chocolate laboratory, good quality educational material, music instruments, computers and software...

4.14 A Business Idea Example: HighCycleClothes

The vision:

1. Go to the big cities and invite marginalised women to collect all the usable clothes that people throw away and send them to us. Here a trained group of women will design and make every single piece using the collected clothes, creating special products with indigenous embroidered styles. Some fashion designers can help us online in the beginning.

2. Every single piece will have one or two embroidered SDG symbols, so that people can identify this new type of responsible enterprise.

3. Once clothes are upcycled, a part of them will remain locally to start a form of barter and be part of the starting impulse of a local currency. The other part goes back to the big urban centres where the marginalised women receive the items and sell them in the same centre where they collect the discarded ones.

4. Here we start to create SDG “stores” where all the “up stuff” finds a form to enter one more time into the consumer cycle, but with an added value. The “upcycle store” will have two functions: selling the upcycled clothes, and collecting the discarded ones to bring them to the “Rural Highcycling Women’s Coop”.

The earned income is divided. One part goes to the upcycling workshop and the other part stays to pay the persons and centres who run the upcycle shops. If there is some remaining money, we use it to begin another upcycling circle with a new team and another circle of production.

Ideas behind this approach include:

- Add value to everything that leaves Chichihuistán before selling aka “more money in, less trees out”.
- Add label to everything that leaves Chichi aka “quality recognition of brand”.
- Fulfilling city needs aka “the promise of eggs and chocolate”.
- Small scale solidarity economy aka “go step by step and hand-in-hand”.

**Figure 4-9: High Cycle Clothes Business model**
5 DESIGN PROPOSAL SOCIAL DIMENSION

This project is particular in that we are not designing a new community, but instead considering how an existing community, with all its challenges and peculiarities, and a will of its own, could transition into a more resilient, healthy and regenerative community. This is reflected in the ideas and proposals for each and every module, but particularly for the social dimension, because it seeks to transform and transition existing social systems and structures into new forms, which is complex and delicate work, requiring exceptional skills and abilities by the project facilitation process on sensitivity, cultural knowledge and ability to build bridges and tap into common values and aspirations of the community.

In that sense the social dimension design plan contains various interrelated proposals which may support the community transition process. However, as a premise for participatory facilitation and community development, it is about having a plan, discarding the plan whenever needed and co-creating the future together with the community as it emerges.

5.1 Vision, Mission, Purpose, Core Values and Regenerative Goals

5.1.1 Project Case Study Social Vision

It is important to emphasise that the vision and related ideas for the community presented here (and for other dimensions presented elsewhere) was born out of the processes conducted by the case study team and not through collaborative work with the community, which was not feasible within the short time period available to complete this case study hence it is important to say that we cannot, and will not, force things. But it may be a useful starting point for the community to pick up from. But there is little point in shaping the design study in the form of ideas and solutions (“they could do this, and this, and this”) and the proposals may be mostly theoretical, therefore we propose processes and plans which will allow and facilitate the emergence of the processes and solutions from the people of Chichihuistan themselves.

The vision for the social dimension, rooted in the overall vision and mission defined in the introduction to this case study, is as follows:

“Chichihuistan as a place of egalitarian and proactive conversation about transition towards resilience, regeneration and social justice”

CORE VALUES:

- Express themselves freely without fear or favour
- Deeply listen to each other and respect each other
- Define, express and live their common vision and mission.
- Continue to study and learn as a lifelong journey
- Be open to collaboration with co-villagers and other partners and collaborators
- Respect and honour the past, present and vision for the future

REGENERATIVE GOALS

- Rekindle the true fire of the Assembly.
- Structure the community in a healthy, functional and socially just way.
- Overcome and resolve any past trauma and reconnect with traditional wisdom.
Love the place and find peace in it.

Based on this a review of issues and opportunities was completed using SWOT analysis as follows:

### Table 5-1: SWOT Analysis of the Social Dimension

<table>
<thead>
<tr>
<th>Strengths:</th>
<th>Weaknesses:</th>
</tr>
</thead>
<tbody>
<tr>
<td>• The tradition of the Assembly as the decision-making place for the community, where once upon a time everyone’s voice was heard equally.</td>
<td>• Traumas from having to move from the former region to Chichihuistan, and the passing on of those traumas to new generations.</td>
</tr>
<tr>
<td>• A clear idea that we depend on nature.</td>
<td>• Assembly-practice and community-life where not everyone’s voice is heard.</td>
</tr>
<tr>
<td>• Live Bioregionally</td>
<td>• Too many people to address all matters in functional general assembly sessions.</td>
</tr>
<tr>
<td>• Solidarity in facing exterior threats.</td>
<td>• Lack of education.</td>
</tr>
<tr>
<td>• Living with the natural cycle of life.</td>
<td>• Low self-esteem.</td>
</tr>
<tr>
<td>• Strong family bonds.</td>
<td>• Economic and ecological pressures that push towards quick, power-based, autocratic processes.</td>
</tr>
<tr>
<td>• Women and young men wanting to be active, heard, and willing to push for a change.</td>
<td>• Lack of trust.</td>
</tr>
<tr>
<td>• Respect for and inclusion of the elders.</td>
<td>• Divisions between genders, religious groups, men of different age and land-owners vs. land-commoners.</td>
</tr>
<tr>
<td></td>
<td>• Envy and lack of internal solidarity.</td>
</tr>
<tr>
<td></td>
<td>• Destructive or unjust behaviour stemming from the need to belong to the group and do like the group does.</td>
</tr>
<tr>
<td></td>
<td>• The general attitude of “I am forced to live here”, the complementary attitude of “I am looking for opportunities to move away”, and the resulting attitude of “I will do the minimum I need to do to take care of this place.”</td>
</tr>
<tr>
<td></td>
<td>• No common celebratory rituals.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Opportunities:</th>
<th>Threats:</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Rising number of groups supporting just social processes.</td>
<td>• Consumerist worldview coming from mass media</td>
</tr>
<tr>
<td>• Rising number of groups supporting regenerative ecological processes.</td>
<td>• Economic and ecological crises applying ever more pressure</td>
</tr>
<tr>
<td>• Rising number of groups supporting local and fair economic processes.</td>
<td></td>
</tr>
<tr>
<td>• Converging crises showing that usual practices are not the solution.</td>
<td></td>
</tr>
</tbody>
</table>

**Uncertain influences:**

- Local judges and police
- Churches
- Municipal, regional and national government
- International treaties and organisations (NAFTA...)
- Zapatistas
5.1.2 Community's Vision

Based on the analysis of the current situation in the community we propose the following social dimension approach to start participatory facilitating the emergence of the community's vision for the future:

- Create a core group of interested community members who would like and be willing to work on co-creating transitions in the community developing and conducting following program:

- Organise and conduct Oasis Games with the Community - The Oasis Game is a community mobilization tool to materialize collective dreams in an open and playful manner accessible to all. The game involves players and communities, bringing together people from many different areas of the community. It can be applied at no cost and in a fully cooperative way so that, together, all participants can accomplish a common goal. The design of the Oasis Game strives to allow all players to be winners, without exception.

- Organise Future Workshops utilizing the Dragon Dreaming approach and tools to develop community vision, mission, purpose, core values and regenerative goals (and timelines).

The case study team contact and core group will support the participatory process therein with:

- Deep listening
- Facilitate Dialogue
- Offer some views and some ideas
- Suggest ways for the community to work together on forming ideas
- Suggest ways for the community to implement change
- Suggest ways to attract support for change implementation
- Are open to more engagement, as desired by the local people.

In support of the visioning process so that deeper understanding and appreciation and respect for the community can be achieved following pre-requisites will be tackled as part of this process:

- Creation of a Community Agreement about how to relate to each other and rules how to operate as community
- Collection of people's Life Stories (to create Stories of Place) and Community Identity and respect for the past and learnings for the future
- Implement consent based decision making process on visioning process (see later for governance and decision making processes for community)

5.1.3 Integration of Visioning:

<table>
<thead>
<tr>
<th>Interior Individual</th>
<th>Exterior Individual</th>
</tr>
</thead>
<tbody>
<tr>
<td>DOCUMENTING LIFE STORIES</td>
<td>CHICHIHUISTAN AGREEMENT</td>
</tr>
<tr>
<td>Discovering the strength in me, which allows me to express that and to connect with the strength in others.</td>
<td>Communicating and collaborating with other individuals in a constructive way.</td>
</tr>
</tbody>
</table>
5.2 Building and Maintaining Regenerative Communities

In order to facilitate a transition from a conventional community towards a regenerative community it will be foundational and critical to support the development of a healthy and cohesive and responsible community, i.e. through healthy and respectful relationships between community members, based on trust, truthfulness and transparency as some of the core values of a regenerative community. This part of the proposal goes beyond and deeper into the internal aspects of self and community to start articulating, airing and resolving deep underlying issues causing dysfunction and conflict (stories of people and place, traumas and shadows, inability to resolve conflicts, lack of respect and common goals and values) in order to create deep connection to self, others and the land. This in turn will provide the foundation for clarifying the potential of place, its vocation and from it again the formulation of mission, purpose, core values and associated regenerative goals, drawing on the stakeholder network, resources and capitals (as defines through the 8/9 capitals for the place - see Economic dimension proposal).

The essence of self and community at the core of regenerative community and project development is illustrated in following community based project development concept (i.e. Compass, 2017).

![Figure 5-1: Compass Community Development Model](Image)
5.2.1 Communication

The foundation for community development to be successful, sustainable and regenerative we will need to shift our way to communicate with each other, which is based on a worldview of interbeing (addressed as part of Worldview proposal) and hence collaboration, connection and abundance. The ability to communicate deeply, compassionately with loving kindness requires the development of an appropriate mindset (see Worldview) and openness for to learn, change and develop.

A program is proposed, which can be first piloted on a willing group of say younger people (and/or the core group) who are eager to see and support change on development of new communication skills, based on

- non-violent (compassionate) communication,
- active and deep listening,
- ability to suspend own judgement, cynicism and fears,
- ability to provide love back compassionately, and
- able to speak and develop deep trust, able to speak and be truthful and transparent.

Of course this work will require deep inner work and development (which can be supported by prayer and contemplation practices, nature connection practices etc., some of which is also provided in the proposed as part of the Worldview proposals), to develop greater levels of self-awareness, self-consciousness, self-management, compassion and loving kindness towards self and others.

5.2.2 Trauma and Shadow Work

As much as economic poverty limits the actualization of the communities and its individuals potential, there are underlying social and cultural issues which strongly contribute to the lack of empowerment, direction and focus as well as being in poverty, contributed also through a lack of cohesion and regenerative collaboration in the community, who are largely faced with survival issues and meeting their basic needs.

An important aspect and part of the project in the social dimension relates to dealing with underlying issues of trauma and shadows which deeply affects individuals and the community as a collective, creating dysfunction and conflicts and a viscous cycle of feeling trapped (i.e. lack of opportunity, education and skills).

As is the foundation for any sustainable and regenerative community, trust, truthfulness and transparency on an individual and collective level are the cornerstones and core values which can start the process of transforming the current state into a more regenerative one.

The project proposal for facilitators to use includes the introduction of processes which can facilitate that work, initially to the core group trialling and adapting such approaches to the local context and later expanded to the wider community, if deemed appropriate by the core group and facilitators. Of course facilitators can and should use (or not), adapt, modify any tools appropriate to the local context and circumstances:

- **Sharing circles** (initially to share what comes up, to create familiarity and confidence with such work),
- **Way of council** (later to be introduced as more deeper going work if possible), and could eventually move towards approaches like
- **WIR Process** (after Scott Peck), **Process Work**, or **ZEGG Forum**.
The successful use of Theory U processes (include deep and active listening, suspension, deep dialogue, and co-creation) and if deemed appropriate as a process facilitators can use initially with the core group and eventually expand.

- Telling and documenting stories of people and place
- Existing Bioregional Shamanic Rituals
- The dynamic inclusion of games, theatres, arts performance, rituals, ceremonies, but also prayer and contemplation practices and simple forms of community work parties and common meals will be important aspects of an integrated approach to dealing directly and indirectly with trauma and shadow and also part of community building and maintenance process on an ongoing basis.

Choosing the appropriate tools and modifying them to suit the community should be strongly based in the existing traditions and rituals in the bioregion and the community's ancestral heritage.

5.2.3 Governance

The existing Community Assembly, even though poorly functional due to inefficiencies and rank and power issues, combined with underlying worldviews and beliefs (i.e. separation, disconnection, distrust, fear) and influenced by the history of the community (including its unresolved traumas and shadows as well as lack of strong connections to the land or strong culture), is still a useful starting point for designing an appropriate but regenerative governance system. The intent of the assembly is of direct and participatory democracy in action, which by itself is progressive and admirable, irrespective of the reality of how decisions are being made.

But, due to the size and complexity of the community, direct democratic decision making by the whole community in the assembly appears challenging at best. Other than for critically important decisions for the wellbeing of the whole community it may be appropriate to create a number of management circles, each of which is responsible for certain aspects of community work and life (e.g. water/waste, roads and infrastructure, energy, housing, education, health, gardens and food production, environmental stewardship and restoration, etc.), which internally should work through consent based decision making and if feasible rotation of the chairperson of the group (say annually), so allow leadership skills development (all leaders) for all community members.

The introduction and use of Sociocracy may be appropriate in the future. In the interim the management circles could be double-linked so that transparency and connection and cohesion of community overall can be established and maintained.

Another improvement to the Assembly would be the provision for some remuneration for the Comisariado (the Head of the Assembly). It is currently a non-paid full-time job, which is not sustainable and may cause tendencies towards corruption.

5.2.4 Participation and Decision Making

The premise of regenerative and integral development of community and social structures and systems is to tap into the knowledge, views, skills and abilities of each and every member of the community, through participatory and co-creative processes to develop (facilitated) pathways and learning journeys for co-design and generation of the community's future. This has to occur in parallel with support and guidance for development and learning processes on the individual (see further below and Worldview Dimension) including raising self-awareness, self-consciousness, connection with self, nature and personal communication and leadership skills.
In order to achieve a strong, committed and cohesive and trusting group (starting with the core group) and community it will be essential to build group identity, which is likely gained from the context and background of the community (i.e. the story of people and land described above), and from there for all to create belonging (i.e. to the community and land), to gain further and deeper understanding of the communities potential for a co-creative future.

This will also require to address obvious issues of rank, power and control which appear to be prevalent within the community, which in turn has a good chance to be started to be tackled through work with trauma, shadow and underlying communication approaches (see above), but need to be supported by systemic changes to governance structures as well, to facilitate empowerment and meaningful participation (able to see contributions work).

Through the work of creating connection and knowledge of interdependence (interbeing) can we start to lay the foundations of a willingness to contribute and participate.

Community Agreements (see above) are helpful as to act as a common memory of what holds the community together, how to be together with and a reference point of the communities consciousness as well as of their core values and goals. Importantly it needs to be fluid and dynamic (i.e. can be changed easily and fast) as well as flexible in order to work for all and changing circumstances the community faces.

A key component of the community agreement and how the community works and lives together is conflict resolution, which will likely require a staged process for resolution, from self-mediation, third party mediation, external mediation, council mediation and clarification of consequences where they are deemed necessary. The important elements to be embedded in the process included the approach conflict with honesty and frankness (but compassionately), with curiosity and interest, is non-violent (NVC), based on the interbeing worldview, deals with values, the needs and resources and threats to them and aims to reach resolution instead of compromise.

The foundation for the ability of members of the community to fully participate and be empowered to do so, not only need to deal with the economic issues many people face (see Economic dimension) to free them from the survival struggles and poverty trap, but also to create the skills and abilities for each individual to participate and contribute, hence training and education for learning participation and being empowered is essential. A positive approach to incentivize participation (which is currently being penalized for not participating) is the offering of being able to not only make decisions which influence the health and wellbeing of the community (and self) but also to learn and being offered opportunities (economically and socially) to take control of one’s own life and future, as outlined in proposals in ecological and economic dimension (e.g. gaining agricultural skills, production of chocolate and cola).

5.2.5 Buildings Groups and Dealing with Conflict

In support of the tasks above, various additional approaches will be utilized for group building processes, which form part of the project development and implementation work and conflict resolution amongst them:

- Games (see World Game or Oases Game and others) - annually
- Informal games - preferably weekly but at least fortnightly
- Making art - at least monthly or more
- Sharings - quarterly (with seasons)
- Ceremonies, Rituals and Celebrations - as they fall (see later)
- Work Bees - preferably weekly but at least fortnightly
• Food sharings - ongoing during seasons

It should be noted that these approaches will and should not be necessarily explicitly used for the purpose of conflict resolution, because they have many other functions in community building and strengthening communication and as such a multipurpose tools, which can be used by facilitators in such various ways as found appropriate or necessary for the community.

Valuable tools such as role play, theatre and performing arts would at this time be too imposing for many community members due to the expressivity of such tools. However, workshops for children could be organised, and the entire community may be invited for children’s performances. The workshops could be held by volunteers who would ideally be trained both as art-workshops facilitators and facilitators for processes such as the Council of All Beings and similar.

5.2.6 Leadership and Power Dynamics

As described in introductory sections the power dynamics and leadership types in the community (and beyond), follow generally conventional patterns using “power over” approaches and conventional leader and follower approaches, with significant challenges from past traumas, shadows, inflexible social structures and traditions, separation, competition, scarcity and fear driven relationships as well as lack of awareness and knowledge about other ways of relating.

The planned program discussed in previous sections and other dimensions (particularly in Worldview) will address some of the underlying patterns and assumptions as well as current practices of how individuals and groups are present and acting in their world and hence support a paradigm and mind shift towards a worldview of connection, collaboration and abundance as well as value and respect in the other (living and non-living entities).

Leadership is currently provided to the community through the Comisariado. At least for the short to medium term the structure of a Comisariado could be kept. The members in the Comisariado will get trained and apply the learned and by applying should spread a new leadership mentality. The mentality should be one of creative power, leaving repressive power behind. Even though there is now a shortage on many levels, a worldview of abundance, unity and authenticity should take over. This will create trust as well, together with all other social aspects of the project proposal.

Therefore a leadership training program will be devised for community leaders (existing and aspiring with a focus on young and emerging leaders) and the program will include:

• A program on self-awareness and personal empowerment to gain better connection with self, others and nature
• Provide clarity about the roles of persecutor, rescuer, victim, clarity about abusive behaviour
• Including the five components of coaching: curiosity, listening, intuition, self-management, action/learning
• develop emotional intelligence (recognize feelings and communication)
• Gain holistic leadership skills in helping reaching goals, facilitating the process and improve the quality of relationships (i.e. develop collaborative and participatory leaders, bridge builders and edge workers as well as a “All leaders”)
• Systemic and strategic thinking and acting
• Honor elders and learn from their experience
The program will be partially modelled on the Warriors without Weapons program used in Brazil (where play, not power, evokes people’s passion, creativity and motivation to work hard on seemingly overwhelming challenges, using approaches like the Oasis Game) and other regenerative Leadership and Personal Development Programs (e.g. Centre for Sustainability Leadership, Pacific Integral GTC, Joyality).

A personal development program for leadership (which may take approximately 2 to 3 months duration) can and should be rolled out to the core group and Comisariado once a group visioning process and program has been completed and agreed upon showing the future direction for the community. Other parts of a leadership program can be developed within one year and rolled out over a 6 months period with 3-4 hrs per week of collective learning work, plus 2-3 intensives (1-2 days) and project related work at the completion of the training. Both programs can and should be repeated as deemed necessary.

5.2.7 Arts and Celebrations for Social Cohesion

Art is a fundamental method to express what is in me and in us.

Art is a bridge between cultures and different worldviews.

Art can help to heal wounds of generations, can give voice to the not heard, can be a voice to all the living beings without voice. Is a method to come together and create the New.

Art can be a joy and a power tool to create healing images of the future, in a way is a tool which helps to manifest.

Art and beauty can be delicate and a bridge to the invisible world, and can be a way of reflection, an invitation to change what has to be refined and adapted to the current times and circumstances.

Art can recover old wisdom and find the roots which we sometimes are thinking are lost.

Art is prayer

Art can give sense to what hasn’t made sense yet.

Art is beauty and solidarity.

Art is everybody and Life is Art.

Make your life/ your community a piece of Art, make community a concert, that everybody can be heard in his/her particular way…. (Monika Hösterøy)

The impulse to express creativity is equal to the impulse to co-create the world we are living in, in each and every one of us, either hidden or visible, thought lost or not present or screaming out loud. We, the community have to empower each other to be responsible in this process. Becoming conscious about our own creative power we more easily can step into our responsibilities and convert ourselves into cultural creatives, change makers and Evolutionary Activists, in order to put our creativity in service to the whole wider life system.

Art is a bridge between the four dimensions and can weave between each of the threads so that it is clearer to see the whole interconnectedness when we start moving something in one area we like it or not it will move something in all the other dimensions too.

A Transition process without play and creativity will miss out on a vital way of reaching, touching and engaging people.

So it is of vital interest for the Transition process in Chichihuistan to empower all activities to employ Art and especially local denied arctcraft and ancient music, dance and story. In our
process starting with a core group for creating and experimenting with change, we will give a strong focus to present everything in a creative, beautiful way, so that everybody in the community can get inspired by it and likes to be a part of it.

The core group and anyone who will feel inspired and willing to join, will create songs, dances, symbols of community and mottos (e.g. "I'm proud to be a CHICHIpioneer). This will be a non-binding phase, encouraging everyone to come up with ways to express belonging and unity.

Starting with very simple things when we come together like creating an inspiring atmosphere, maybe lighting a candle, read some inspiring words, sing a song together, or one person can speak about something that meant a miracle to him/her this day. Observing in mindfulness the dawn, an insect… whatever to step into a special celebrative atmosphere where we like to make something wonderful, will give us this warm and close basis to feel together and the basis for co-creation.

- **Our words** will be well chosen and nearly be poems, with inspiring sentences and contents which are seeking the whole person not just a part of him/her and integrating and embodying the four dimensions and the whole.
- **Our lives** will be inspiring to others, becoming a model which recreates itself in every moment. A model which embodies coherence, creation, happiness and a lot of positive values which empowers others to find their own creative way; individually and collectively; to life a meaningful and life of solidarity with of forms of life.
- Creating some special coactive art events on local level, creating special celebrities together and also constant artwork is one objective.
- We consider starting a multi-age chorus could be a first step to heal the gap between two religions.
- Creating new local Come and working together songs can be a base of trust for further explorations in any of the four dimensions.
- In all our work we will show how to keep running circles where we learn about Action Learning

We also propose to create a constant running of FUTURE WORKSHOP (see above for details). In the first target group of young people of Chichihuistan, it will be important to share the stages of the creative processes. Being aware where we are in a process (Germination, Assimilation, Completion) gives certainty where we are, what we are doing and will need to do and why. Especially in Chichihuistan the term of collaboration is nearly unknown, they more have the attitude of “helping”. So it’s very difficult to help somebody if there isn't anybody who is responsible. They are not used to create a long term project… and the future workshops can help to be able to create better living conditions in a long term.

Our project will celebrate and honour all life and embrace change as life’s continuous exploration. With this idea we propose:

- **“Sowing and Harvesting”** celebrations which have to be related to the MILPA (the association of corn, beans, squash and other wild vegetables in one area) and our relation to the land and seasons.
- **Life cycle celebrations**
  - Birth of a Child: In Chichihuistán it is not usual to celebrate the birth of a child, but yes the death of an elder. We will make something special for the babies and the families when a new one comes.
  - Entering Adulthood for Man and Woman - a rite of passage to enter the age of responsibility and full community acceptance.
o Transition to Elderhood - to maintain the inclusion and respect for the elders and their invaluable contributions and wisdom for the flourishing of the community.

- **Spring and Autumn Equinox Celebrations** for re-creating our connection with the seasons and the land.

Perhaps we can add this: If desired, all of the above celebrations can include Christian prayers and blessings in order to integrate the religious practice of the community with the important events that go by unappreciated.

Also developing to create new celebrations which includes the celebration of new buildings and structures completed, projects accomplished, first rain every year, the first singing of the frogs every year, the most beautiful horse or more lovely hen with their chickens….

All proposed ideas and projects will be developed and rolled out by the Core group and initially trialled for one year and see the responses and love back to let them evolve naturally to the community’s desires.

### 5.2.8 Bioregional Development

Through its transition and the collaboration within the bioregion and wider, Chichihuistan and its vicinity will become one of the evolutionary “yogurt cultures” whose positive influence will spread and result in the emergence of a sustainable and regenerative human civilisation, for many generations to come.

This process of human re-inhabitation of our planet, which means taking part in the never-ending creation of a home for all, which exhibits vitality, viability, health and evolves, and consists of these processes:

- local to bioregional self-reliance for food, energy, education, health care and material goods
- renewable-energy driven bioregional circular economies using regenerative bioregional bio-productivity
- supporting living-in-place economically, culturally, politically and philosophically
- raising awareness, supporting regenerative processes and citizen activism
- creating and nurturing scale-linked networks of networks from local to global (i.e. living cosmopolitan localism and bioregionalism)

The Bioregion and one map binds them (Social network map) all is described in Appendix A.

Learnings for all of the community and each individual member (particularly children and young) about the proximate and wider area and environments (local communities to bioregion) is an essential part of the regenerative design effort to achieve not only deep knowledge and understanding of the regions, but also embodiment of place.

Hence every, work, project and event is consciously described in its embeddedness in the region and the network and web of life it depends on. To facilitate this worldview, work and projects in schools and by churches are encouraged to pay attention to their bioregion daily in a number of ways:

- **Study the bioregion**: flora, fauna, landscape and weather patterns (using tools such as the seasonal wheel, nature journal, mapping, water-cycle mapping etc.)
- **Interview one another** (especially children interviewing the elders) about how this place used to be
- **Tell stories and make plays** about wildlife and landscape, developing a language of metaphors of both wholeness and disconnectedness
- **Make rituals that celebrate abundance and heal the scars**, while letting nature heal the humans (through medicinal herbs for example developed in school gardens)
- **Play games** that teach about the interconnectedness of all and empower to seek and take tangible action - like Oasis Game and/or World Game.

The implementation of all these proposals can and should be done simultaneously, and most do not require extensive planning or complex knowledge experience (except for the Oasis or World Game for which training is required, but can be achieved within a year by a delegate of the core group).
6 DESIGN PROPOSALS FOR WORLDVIEW DIMENSION

Review of proposals: Interbeing applied

6.1 Introduction

The work done by the case-study team for the Worldview dimension stems from their deep belief in the importance of spiritual wellbeing for all aspects of life, be it ecological, social or economic. This spiritual wellbeing is concerned with the deep internal prerequisites for love to be expressed in the life of every individual, the entire community and the whole of being. Nurturing the prerequisites for love has been the main work of all spiritual leaders and traditions that have been truly concerned with the benefit of their communities. But it is also work that has to be done by every individual in his or her own existence. It is the intention of the worldview dimension to propose ways to support this important work.

The structure of this proposal generally follows the structure of the visioning process shown in the following diagram:

Figure 6-1: The Visioning and Back casting Process

6.2 Worldview Future Vision

6.2.1 The vision

The vision and its meaning

The worldview vision, expressed as if it were a present reality is:

Chichihuistan is living the spirit of INTERBEING in all aspects of everyday life.

“Interbeing” is a practical, short word understood within the global transition movement, but it can be rephrased as the interconnection of everything, or – expressed in a language that reflects Chichihuistan’s Christian faith – the ultimate interconnectedness of God’s creation.
Living in the spirit of interbeing means that all choices, big and small, that one makes in life, contribute to the mutual benefit and healing of all aspects of reality. This includes the spiritual aspect, but also the individual, environmental, communal, bioregional and global wellbeing.

The worldview vision and the general vision

This is obviously connected to the overall vision and mission that this study is based on. The wellbeing of Chichihuistan is a part of the wellbeing of the world, made possible by the synergistic transformation of interconnected social, economic, ecological and worldview systems.

The links between dimensions

Social, economic and ecological aspects are intertwined and they need to be transformed and healed. Regenerative ecological practices will have to contribute to the economic wellbeing of the community, which will in turn decrease the temptation to adopt destructive short-term fixes. All of that is more likely to happen if there is community cohesion, justice and the practice of empathic solidarity within Chichihuistan and the wider community.

However, all of these multifaceted processes will be greatly supported – and integrated – if there is a healthy guiding base at the worldview level, i.e. the level at which people interpret what is going on in the world and their lives, give it meaning, and feel and choose the way to live (see Ladder of Inference).

Figure 6-2: The ladder of inference

By being aware of the interdependence of everyone’s and everything’s wellbeing, one is more likely to contribute to the communal efforts ranging from the village assembly to the agricultural cooperative and so on. One is also more likely to engage in regenerative agriculture and acknowledge its positive effects on one’s health. Finally, one is more likely to be free of the addiction of consumerism while being more inspired to engage in regenerative co-design and creation including social entrepreneurship.
All of these consequences of a more interconnected worldview will, in turn, enable one to see that interconnection even more clearly. It follows that the worldview work is one of the key elements of a positive feedback loop in the transition of Chichihuistan and the world towards a more sustainable and regenerative as well as thriving human presence.

6.2.2 Values, approaches and principles

Values

This case study is based on these core values related to the worldview dimension:

- sharing
- respecting local spiritual practices
- supporting freedom of expression
- creating time and space for celebration
- using and honouring ancient wisdom
- knowing the history
- knowing the place
- knowing the wider context (bioregional and further)
- using global and local insights
- using scientific and spiritual insights

Special attention should be given to supporting the values inherent in these human rights:

- 1 Right to Equality
- 2 Freedom from Discrimination
- 3 Right to Life, Liberty, Personal Security
- 4 Freedom from Slavery
- 5 Freedom from Torture and Degrading Treatment
- 6 Right to Recognition as a Person before the Law
- 7 Right to Equality before the Law
- 22 Social Security
- 23 Work and Equal Income
- 24 Rest and Leisure
- 25 Adequate Living Standard
- 26 Education
- 27 Participate in Cultural Life of Community
- 28 Social Order that Articulates the Human Rights
- 29 Basic Duties

The holistic approach

The holistic approach supported by this case study includes the following:

- actively caring about health (salutogenesis)
- accepting chaos as a creative starting point
- being slow when needed (evolution instead of revolution)
- facilitating people-led processes
- welcoming emergent design
• being comfortable with non-linear thinking
• engaging complex systems without oversimplification
• using holistic tools, such as Integral framework
• measuring effects in terms of both quality and quantity
• achieving health of individuals, communities, ecosystems, bioregions and the planet
• caring about aesthetics while intervening in the environment to provide for the basic needs of air, food, water and shelter.

**Principles**

This part of the case study envisions direct action. Any action taken with the people of Chichihuistan and for their benefit should be informed by these principles (inspired by the Principles of Spiritual Activism by Satyana Institute):

• transformation of motivation from anger/fear/despair to compassion/love/purpose
• non-attachment to outcome
• maintaining one’s physical, emotional and mental balance
• being coherent in means and ends
• seeking to understand and improve relationships with one’s adversaries
• finding one’s own natural approach
• working for the world while knowing that all service benefits one’s Self
• being open to truth, no matter how painful it is
• relying on faith and intuition
• letting love create optimism and courses of action.

Since direct action always ripples out to affect the (living) environment, it is good to bear in mind “Life’s Principles” by Biomimicry 3.8:

• **Life creates conditions conducive to life**
  • Adapt to changing conditions
  • Be locally attuned and responsive
  • Use life-friendly chemistry
  • Be resource efficient (material and energy)
  • Integrate development with growth
  • Evolve to survive.

**6.3 Steps towards the Vision**

For all of the steps proposed in this chapter, there is one important thing to bear in mind: The intention always has to be to include the entire community in dreaming, planning, acting and celebrating. Diverse - and even opposed - opinions, worldviews and lifestyles are always a potential for creativity waiting to be tapped. In order to tap that potential, it is good to focus on what is common and on the practical goals. These tangible common goals are bridges between the Catholic and Evangelical groups in the community and are therefore extremely important to identify and pursue. But equally important is the way in which the goals will be identified and pursued. This way has to be not only tolerant and respectful, but also deeply democratic, based on teamwork and imbued with the atmosphere of patience and love. Imbuing every meeting, all communication and every activity with such an atmosphere is the responsibility of everyone, but especially those who are more aware of the intrapersonal and interpersonal dynamics and more able to detach themselves from their own conditionings.
6.3.1 Visioning with Chichihuistan

The Core Group

It would be beneficial for people in Chichihuistan to find their own cultural creatives, people who actively protect human values, the environment and community even when their life is hard and a lot of attention goes to the basics of survival. Paradoxically, by focusing on more than the basic needs and opening their view to the larger picture, they might be able to overcome the just-survival mode. The people carrying this strength within them need to be supported by helping forces from within the community and from the outside (activists). Then they can inspire the whole group even more.

Such a core group has already gathered to participate in visioning sessions facilitated by one of the residents of Chichihuistan who is also an author of this case study (Monika Hösterey). This work needs to continue in order to create a draft vision and mission, complemented by purpose, core values and guiding principles. It also needs to continue in order to foster stronger ties, more confidence and constructive processes within the group.

The core facilitation tools for the visioning are:

- SDG (Sustainable Development Goals) flashcards
- Dragon Dreaming
- the Oasis Game.

There may be additional tools in the future, as long as the tools do not come from worldviews and spiritual practices that are at odds with the spiritual path of the people of Chichihuistan. It is good to remember that the people of Chichihuistan are willingly and explicitly Christian and that their search of spiritual connection takes place through means that originate in their organised religious practices, scriptures and symbolism. The courses, programs and experiences that have been tailored to the inner needs of one (sub)culture may be counterproductive in another. One should bear in mind that mystical experiences of a religious person are most naturally metabolised within the imagery of their religion, and that in a Christian community, interbeing is an aspect of God and should be respected, and in most cases also communicated, as such. The general recommendation is to apply tools sparingly and facilitate the Core Group with a few well-chosen and culturally appropriate tools.

The Assembly work

Five criteria for a vision to be successful are:

- clarity
- coherence
- community power
- consistency
- flexibility.

For Chichihuistan community power is of utmost importance because the vision needs to speak to all the stakeholders. A good communication to all is very important. Everybody in the village should know what the vision says, and it is crucial that everybody feels represented by it.

The current situation, that might seem hopeless to some villagers, should not limit the creativity of the visioning. It is very important that the visioning be able to release the activity and enthusiasm of everyone involved.
It is crucial that the work done by the Core Group is seen as the preparation for involving the entire village in the visioning. This will be much easier when the practice of the Assembly is renewed in such a way that all voices are really represented and that the decision-making and communal activities can be run by coordinated, consent-based circles.

This in turn depends on other work envisioned within the Social Dimension. For example, Chichi Questionnaire, which will collect the villager’s thoughts about the current situation and the ways to go forward, and the Chichi Agreement, which will establish rules and processes that the community wants to uphold.

**The CHI**

The entire topic of worldview is ultimately connected to deep, harmonious happiness. It would benefit the people of Chichihuistan if there was a way to measure happiness, quantitatively and qualitatively.

It might be helpful to devise a Chichihuistan Happiness Index (CHI), as a result of visioning with Chichihuistan and the Chichihuistan questionnaire. Devising and monitoring the CHI would be a project in its own right.

### 6.3.2 Spiritual Ecology

**Synergy with priests/pastors**

It is a prudent permaculture-based approach to use the resources that are available and to get to know them well. The fact that Chichis are practicing Christians is a great resource because there is a rising awareness within Catholicism and Evangelicalism about environmental issues.

The Core Group should liaise with priests and pastors, to invite them to encourage a deeply ecological worldview and practice within their “spiritual flocks”.

Christian teachings can be used in visioning or planning sessions too: For example by taking an environmentally relevant passage from the Bible, analysing current practices and coming up with ways to improve them, all within the spiritual worldview that the passages propose. Another example is a series of workshops that is already being negotiated: A nun is willing to start an eco-group based on the Pope’s encyclical Laudato Si.

**Collaborating with Catholic environmental organisations**

In the Catholic Church, the prime example of ecological spirituality is Pope Francis’ encyclical “Laudato Si”, which promotes an integral ecology rooted in Christian spirituality and the Bible, while integrating social, ecological and economic aspects. This work will benefit from the collaboration with a bioregional organisation called Pastoral de la Tierra, which is already engaged in similar activities.

In addition to collaborating with the priests to help get the Pope’s message across, support in the form of networking, knowledge, volunteers and sponsorships can be sought with organisations such as the Global Catholic Climate Movement.

**Collaborating with Evangelical environmental organisations**

The same kind of support can be sought within the Evangelical Church, with organisations such as the Evangelical Climate Initiative and the Evangelical Environmental Network. Evangelical environmentalism emphasizes biblical mandates concerning humanity’s role as
steward and subsequent responsibility for the care taking of Creation. At the same time, The Evangelical organisation in Mexico, Conemex, stresses the importance of human rights in its objectives.

**Creating/preserving celebratory practices**

Communal **prayers** should be included in all stages of communal projects done by Chichi, from the visioning phase, through the planning phases and all the way through implementation. The prayers are a way to focus intention and good will, to support continuity and cohesion, and to keep the awareness of the underlying meaning and purpose of one’s actions.

Existing rituals with indigenous origins, such as the flower-bringing ritual for water springs practiced by a part of the community, and any other such appreciation-based rituals regardless of their origins, can be an inspiration for people to connect with nature. Indeed, it would be beneficial if the gratitude to nature was shown in as many instances as possible, e.g. when cutting a tree, when harvesting water, when harvesting crops, etc. New rituals inspired by ancient ones could be imagined and inaugurated by children, whose creativity and authenticity could inspire the entire community to participate.

**Creating/preserving sacred places**

Sacred spaces are important for acknowledging the interconnectedness of all. Reverence for the creation should be present when **zoning**, getting **materials** out of nature and **building** so that all interventions are done with moderation, gratitude and attitude of sustainability and regeneration.

In addition to that, **sacred spots** can be marked throughout the landscape. Such spots can be used for observing animals (e.g. hummingbirds) and plants (e.g. big trees), honouring them and learning about the habitat. The spots can be used for prayer, silence, contemplation or other rituals. They will also function as reminders of the people’s agreements about cherishing the environment. They should be chosen by the people and marked/embellished in a way that is in line with their shared spiritual or religious identity.

As an expansion of this attitude, a **sacred walk** from spot to spot could be imagined in the future as it could be a way for the locals to reconnect with the entire land on a spiritual level, and to stay in touch with the (hi)story of the place. Both a short version (within the village) and a long version (guiding through village, fields and forest to learn to be in the various ecosystems in different ways) are possible.

**Prayer spaces**

The Evangelical group has a constant and well-maintained church building. However, the Catholic group has a badly maintained church building due to land-ownership issues. The community is working on resolving this issue either by buying the property or by building another church building. These efforts should be continued and supported in order to ensure peace of mind and equal opportunities by both Christian groups.
Image Note: From indigenous traditions to Christianity, from childhood to old age, from the person to the environment

### 6.3.3 Education and daily life

#### Synergy with schools

Consultations with teachers will continue to be beneficial, and have already ensured their support for workshops done by volunteers because the volunteers are allowed to use the classrooms.

In the long term, the lifestyle changes proposed in this section will benefit from the support of the volunteers, so that the topics can be covered in lessons, homework, school projects and communication with parents.

With the help of teachers and volunteers, as well as organisations that could support the project by knowledge and involvement of experts, it will be essential for the people of Chichihuistan to notice and learn more about their environment. This would foster their
appreciation of the importance of the environment and the experience of interconnection with it.

Such activities would be especially important for children (to start the practice from the early age), but not only them. The activities would include:

- Nature diary
- Biodiversity maps
- Ecosystem services list.

An additional benefit of this work would be the possibility of including the findings into a “curriculum” of eco-education, possibly within eco-tourism.

**Learning about traditional ecological knowledge**

Reconnecting with the world would benefit from reconnecting with the ancient wisdom and traditional ecological knowledge, both being aspects of active interbeing. From ways to celebrate life, to feeling the spirit of the landscape, choosing places for buildings, sustainable agricultural practices, knowledge of seasons, healing plants, food preservation etc., the potential resources are vast. As is the feeling of being grounded and belonging they could support.

The most important activity is interviewing the elders and making a database of the collected data. This should be done at the bioregional level, to tap into the collective memory more comprehensively.

If appropriate, programs like “Exploring a Sense of Place” and “Story of Place” might be used, but very carefully, and always with a mind that it is better to create context-specific tools than to apply those created for a different mindset.

**Healthy diet**

A local/regional menu/diet based on all local types of food should be identified. This diet should be analysed then by which nutrients it has and which would lack for a balanced diet. Then it would be evident which plants, fruits, vegetables, herbs etc. have to be imported and better planted locally, to replenish the local food.

There should be a training for learning how to create a balanced diet. The training should start with women/mothers who predominantly do the cooking and subsequently also involve men who work in agriculture so that they need which kind of food needs to be grown. This happens in combination with Permaculture training and leads to the integration of a healthy diet with regenerative agriculture.

After the food is harvested, cooked and eaten, there are still important issues like composting and food preservation methods that can lead to resilience and “circular natural economies”. This kind of circular thinking and planning is a mental shift that needs to happen.

**Other forms of health**

In addition to a healthy diet, these issues should be addressed in schools, workshops and the Assembly:

- how to maintain water quality and quantity (agriculture, filters, storing etc.)
- how to maintain air quality and quantity (chimneys, stoves etc.)
• how to achieve mental wellbeing in space (size, shape, light, cleanliness, aesthetic qualities, sounds etc.)
• what constitutes meaningful and satisfying work (type of work, human relations, influence on the environment, traditional crafts, etc.)
• how many hours a day one should work
• from which age on one could work
• what constitutes a healthy life-style
• how to maintain personal and communal hygiene (water for washing and cleaning, natural soap, biodegradable washing etc.)
• prayer/mindfulness, for example before starting work each day
• healthy ways of recreation and leisure.

Every point that contributes to health helps to preserve energy of individuals and the community, freeing the energy to be used for more than basic survival.

6.3.4 Transformation and transition

Supporting individual transformation

Life in Chichihuistan has been challenging for its residents since the village was founded. All the proposals in this case study are aimed at improving the living conditions in all their aspects. However, this process of transformation will itself present many challenges and it is likely that individuals will need psychological support as the process unfolds and brings about a multitude of changes. Furthermore, the process will only be able to yield constructive, resilient and sustainable outcomes if it is done by individuals who invite more awareness and a dynamic inner balance into their lives.

Working on inner wellbeing and awareness will benefit from the following practices:
• Ensuring the participation of every individual in the decision-making and, where desired, implementing any proposal chosen from this case study (fostering true ownership).
• Addressing, shaping and organising work as a fulfilling aspect of purposeful living in all activities outlined in the Economic Dimension.
• Addressing peer support as an element of all community-building efforts outlined in the Social Dimension.
• Addressing beauty as an important aspect of all material interventions outlined in the Ecological Dimension.
• Encouraging every individual to find their own peace and balance when he/she engages in prayers, contemplations and other techniques for deepening awareness and inner wellbeing.
• Providing psychological training for any volunteers working in Chichihuistan.
• Providing workshops in Co-Counselling for the Core Group and then wider.
• Encouraging and light training in all appropriate and sensitive forms of care between individuals, e.g. care for children, care for the elders, care for the ill etc.
• Being aware, and spreading the awareness, of the fact that the centre, the greatest depth and the pinnacle of Christian teaching is: LOVE.
Space, beauty and wellbeing

Many of the changes during the transitioning will affect the space within houses and common buildings, open space in the village and in the surrounding landscape. Buildings may be built and reconstructed. Family plots may be reorganised. There may be extensive earthworks. New vegetation may be introduced. New objects may be introduced, from tools for new business ventures, to new handworks items, new water-management and energy-production equipment, and beyond.

These transformations can affect mental landscapes too. They are able to change atmospheres, change patterns of behaviour and influence social relationships. Awareness of these effects, careful planning and phasing are therefore crucial. And so is taking care that the transformed habitat be beautiful, inspiring and supporting to its residents. On one hand, this means that any material interventions should take into account the individual and communal perceptions of beauty. On the other hand, this means that the transition should support the immersion of the people into close contact with the natural environment, because this contact and the appreciation for nature that will come from it will help to bring together aesthetic and ethical preferences. In other words, that which is regenerative will also be beautiful.

Finally, in order for spatial changes to be conducive to wellbeing, these considerations should be taken into account:

- Using materials, tools and techniques that feel sufficiently simple, natural and familiar.
- Creating sufficient, well-positioned and well-protected spaces for intimacy (sleeping, making love, being ill etc.)
- Achieving a balanced relationship between private and public spaces in terms of their sizes, types, position, recognisability and contact zones.
- Creating spaces that are easy to clean and maintain.
- Creating a diversity of spaces (interior and exterior, with more human artefacts and with less) for a rich and varied experience and visual impression.
- Creating spaces that have appropriate sizes, balanced proportions, rhythms of solid and void.
- At the same time, ensuring easy orientation and getting from one place to another.
- Paying simultaneous attention to details and the general picture.
- Using materials and creating spaces that are healthy and pleasant for all senses.
- Creating decorations with inclusive symbolism, and biophilic whenever appropriate.
- Mindfully co-designing the atmosphere that will be created by the interactions of all elements listed above with the physical, emotional and mental perceptions of people who use spaces.
- Allow opportunities for improvisation, changing one’s mind and emergent design.

Conscious energy and resource use

Working on inner wellbeing and awareness, promoting deep happiness (see the Chichihuistan Happiness Index), and the work done on uplifting the community spirit (see the Social Dimension) will go a long way towards creating a lifestyle that will resist the lure of consumerism as Chichihuistan rises out of poverty. But it is also important that educational topics and workshops include the teaching about two ways of achieving better living standards: Those that are energy and resource intensive, and those that are not. This education should include technical and practical aspects, but it should also explain the local, bioregional and global consequences of choices and decisions in everyday life.
Being a part of the global transition

As the mind realises the interconnectedness of choices and decisions, the heart needs to feel the interconnectedness of people and their efforts towards the global transition. There is a huge transition-minded global network spread throughout the world. The people of Chichihuistan will get in direct touch with this network through the work of volunteers they invite into the community. It is important that the volunteers be sensitive when establishing this contact and mindful of the need to take on the role of representatives of a global transition movement and links with it.

This can create a feeling of belonging to a larger community that is very sympathetic to the advanced aspects of Chichihuistan that are neglected or even ridiculed in the mainstream society, such as the democratic Assembly, the communal land ownership, the low-tech solutions, natural construction and so on. This will go a long way towards alleviating the social pressures imposed by the false promises of aggressive marketing and consumerist worldviews.

Sharing and exchange

In order to fully live the benefits of a worldview of interbeing, Chichihuistan should have a thriving material and non-material exchange with its various contexts. Various forms of the exchange are covered within the other three dimensions: trading and cooperative exchange in the economic dimension; celebrations and community-building practices in the social dimension; ecological restoration and regeneration in the ecological dimension. All of these practices will have a beneficial influence on the worldviews in Chichihuistan, thereby creating a regenerative feedback loop.

![Art, celebration sharing and offering in the community](image-url)
7 DESIGN PROPOSALS FOR ECOLOGICAL DIMENSION

7.1 The Main Ecological Challenges

7.1.1 The main ecological challenges

The word “Chichihuistan” means “breast full of water”. A beautiful and fertility promising name for this mountainous landscape, but the reality looks different. The area and its inhabitants have to struggle with water shortage due to dried out springs. The exosystemic health of this landscape is not in balance. The illegal abuse of some mountaintops as sand mines is one of the reasons for that. But to rebalance the area and to make it regenerative again, to improve the live conditions in Chichihuistan, the condition of the whole ecosystem has to be rebalanced. Not only sustainable but restorative and regenerative steps have to be taken on many levels. These levels and their steps within the Ecologic Dimension are described in the following chapters:
2. Permaculture
3. Ecosystem Health
4. Water Supply and Water Management
5. Food Supply
6. Energy Supply
7. Buildings and Construction

7.1.2 Ecological Vision

Referring to the name Chichihuistan the vision is a flourishing land that nurtures fully the needs of Chichi people in terms of home, energy, water and food, space for living, and space for community; a place that gives them prosperity, abundance for exchange and quality of life with time for their personal development, learning and spirituality.

7.1.3 Believe in our success

Because we believe in the success of our approach, the following text describes the situation as if the people in Chichihuistan would have already done what is needed for making a shift to a regenerative lifestyle with positive consequences for their environment. It is written from the perspective of five (5) years ahead when significant changes have taken place already. Using the laws of quantum physics and by creating an energy field the description as if it has happened already will reinforce the manifestation of our intentions written in this document.

7.2 Permaculture

7.2.1 Permaculture Design Principles

Permaculture Design principles were significantly used from the outset of the project and are reflected in a number of design features. Detailed maps for planning and design for example of zones and sectors did not exist from the beginning and had to be created first starting with detailed topographic maps and the conduct of ecological and social surveys (presented in various maps). Then the people could apply the principles like produce no waste, use of renewables, obtaining yield, storing energy, small slow solutions, flexibility and adaptability, diversity and so forth and integrated them into their design system. Their application helped
the local people for example also to be more time efficient in agricultural work. After having learned to use plants to loosen the soil, by planting plants in communities of mutually supporting species and using the rests of plants for systemic composting and mulching the people in Chichi could save time for other activities and to fulfil their needs on other levels.

![The Permaculture Design Process](image)

**Figure 7-1: The Permaculture Design Process**

### 7.2.2 Permaculture zones

Due to a lack of base maps a detailed zoning and sector analysis was not feasible from the beginning and was later created once those were completed and one of the first steps in the design process with the people in Chichihuistan. Zone 1 included herb and kitchen gardens, zone 3 included larger agricultural production, pastures and food forests, zone 4 included analog forest and silviculture and zone 5 restored natural forest ecosystems.
7.2.3 Permaculture application

Generally the designs for different solution strategies as described in the different chapters were based on organic and Permaculture principles.

Applying these principles included the use of aspects of nutrient cycling (e.g. organic waste composting and composting toilets) for food self-sufficiency (which was at the beginning of the transition process almost reached). But by also diversifying production, increasing yield and production and also additional opportunities for food processing and preserving (e.g. milling flour, etc.) for bioregional opportunities and markets, by value adding. It was also for local community based food sovereignty and independence, as well as for nutritional health and food as a cultural catalyst for helping community cohesion and generation of connection to land. So that stories of land can emerge moving from the land of the dispossessed and disadvantaged to the land of sufficiency and abundance and stewardship (“The stewards to the Clouds” in reference to Chichi being the water storage area of a wide region).

Priority Farming Practices included the following list:

- Prepare a detailed topographic, land features and infrastructure map of the community as a basis for integrated permaculture co-design;
- Educate local youth in permaculture, agro-ecology and alternative forestry and ecological restoration practices and project, through collaboration with local educational providers (e.g. Unitierra)
- Erosion control through permaculture and keyline design as well as use of Vetiver Grass for heavily impacted areas (e.g. sand mining) for improved water management
- Redesign agricultural production based on permaculture principles including zoning and sectors,
- Building up the soil with compost and vermiculture (from composting toilets and manure collection from livestock and organic waste composting (which could in turn run some hot water systems) and use of hugelkultur beds
- Companion planting and integrated pest management (IPM), food forests (zone 3), analog forestry and silviculture (zone 4)
- Biodiversity of crops expanded from traditional maize and beans, to also include various native edible plants, perennials, but also Chia Seeds, Wheat, buckwheat, oats, millet and others to increase dietary variety and increase resilience of cropping systems (disease and disasters).
- Crop rotation and no till
- Recycling harvested rainwater (in water dams but also water tanks around buildings) and treated wastewater (i.e. greywater),
- Adding natural soil amendments such as mineral rock dust, micronutrients, etc.
- Managing moisture in the land by drainage and moisture retention through swales and keyline design,
- Using protected crop technology for extending seasons and so on (tree nurseries)
- Not turning the soil with a plow, but rather just opening it up with harrowing.
- Work on land restoration through erosion control particularly on mined and degraded (e.g. clear felled areas) for example through Vetiver grass systems with many complimentary benefits and also possible commercial uses (e.g. feed, handicrafts, cosmetics, building materials) and to restore natural water cycle systems and water security
• Holistic management of pastures through rotational grazing of cattle and use of chicken tractors as well as inclusion of ducks (insect and slug control) and goats (weed control) into the integrated design system.

7.3 Ecosystem Health

This chapter focuses mainly on the interventions that had to be taken to rebalance and regenerate the natural landscape in Chichihuistan. Additionally it points out how Permaculture principles have played a role in the transformation. The different measures were concerning:

- Reforestation, keyline swales and regeneration
  - Public campaign and internal agreements
  - Keyline swales and water retention system
  - Earthquakes and water
- Reforestation and agroforestry
- Permaculture

7.3.1 Reforestation, keyline swales and regeneration

The major question was how to establish a stable water system in Chichihuistan. Therefore the degraded nature in the area of the mines needed attention from the beginning, because it was quite clear that this had a negative impact on the water system and because rebalancing the situation would take a long time. Additionally back in 2017 there was a chance (see public campaign, next chapter) that people in Chichihuistan could regain control of this land since four of the five mines were not used anymore.

These were the main problems to be solved:

1. Stop erosion and restore fertile humus layer on the surface
2. Stop water evaporating too quickly and allow slow down and infiltration
3. Restore the water system including reactivating the springs or creating new ones
4. Create self-supporting edible landscapes
5. Raise biodiversity by offering habitat
6. Create contribution for self-sufficiency and surplus

Public campaign and internal agreements

The restoration of the sand mines was impossible without some skills of the Social Domain because connection, trust and agreements had to be found between people with different ambitions, attitudes, mindsets and directions. And money had to be generated to finance the interventions (see Economic Dimension).

Inspired by a lot of examples of sand mines and other types of mines, where the impact was turned around and converted to regenerative resting and entertainment areas, people in Chichihuistan started to ask for help from specialists from the universities in San Cristobal. With the help of international NGO’s they even started a public campaign about the destruction of the forests in their area and with the help of public attention and the local government, forces were gathered to regenerate the destroyed natural environments. The campaign and the starting regenerative social enterprise (Economic Dimension) generated intellectual and financial support.
At the same time the Comisariado in Chichihuistan personally got in contact with the miners and they could be convinced – under pressure of the public campaign – to at least support the regeneration process by putting their machines at service for the reshaping of the landscape. Some agreements were made: For very little money the people of Chichihuistan could buy two mine and two mines they could get back for free. The fifth mine was still used and is now likely to come to an end. Agreements for taking over the land through the people from Chichihuistan have been made already. Further the assembly and the miners made a "contract": if they want to make new mines, the miners first had to restore every sand mine they already made, and they had to promise to restore the new mine when they stop using it. And very important, if new mines are proposed to be made, they are not allowed to be in water sensitive areas as for example mountaintops.

Internal agreements were made with the landowners on whose land the springs were situated to change the way of cultivation and to allow interventions to re-establish the water system.

Even though some private owners were open to the proposals, a lot of information work had to be done in the assembly to find individual people who defended this work in the assembly. Chichihuistan people were not prepared to do this work without a salary, but once getting money support (that was generated through donations, see Economic Dimension) they happily did this work. On top of that the assembly invited volunteers to help. The volunteers came to Chichihuistan via an organisation that organises such volunteer work support.

It was difficult to reach an agreement, to create zones where nature has got time to recover or even more to invest time and energy to regenerate that land, because that limited the livestock numbers, costed money and made yield to decline in these areas. But with a clever system of cooperatively used land it was possible to have enough harvest in the first years of change and still leave some parts for recovery.

The attention of the public brought also forward money to make topographic maps that were needed to systematically work with the landscape. Basically four principles were applied to regenerate the mine areas and transform them into regenerative places:

1. reforestation
2. agroforestry
3. keyline swales
4. water retention system

The most influential mine for the water system in Chichihuistan (see map description), the mines nr. 1 and 2 had the highest priority to start with to be reforested. With the first experiences and first small successes more money could be generated and the people from Chichihuistan could start the reforestation process and a systematic regeneration of the water system on the other sand mines.
Yellow lines: Ejido, milpa cultivation
Green line: Ejido forest
The Ejido has altogether a surface of 386 ha.
Red line: private domains
For the private domains we don’t have concrete numbers. Together they cover more or less 100ha.
Yellow pins: springs
Grey areas: sand mines (1-4 are closed down, mine nr. 5 is still working (not shown on this map)

Figure 7-3: Chichihuistan Property and Water Map

Keyline swales and water retention system

Before the reforestation could start the topography was reshaped for optimized water retention. The people made everything possible in the most effective and efficient way to slow down the water when raining, to spread it over the land and give it the most possible time to drain away locally.

First, with the help of specialists, the team created in all the upper catchment keyline swales to catch surface runoff water and distribute it evenly to the different parts of the land. They applied the system then to the whole land of the mines. The production of mycorrhizas and the planting of vetiver grass, the only imported plant they used, supported this technique of stopping erosion, controlling the flow and holding back more amount of water to create a soil richer in life.

Where it was not possible to install a complete keyline swale system from the beginning, as a first quick solution sediment traps were installed in the lower part of the slopes to at least catch the eroded soil. In the same way the people in Chichihuistan constructed check dams counteract erosion by reducing the water flow velocity.
At the places beyond the springs, again with the help of experts, the Chichi people created a water retention system with cascading ponds. They applied the technology of Sepp Holzer for water retention areas and they started with the most important spring manantial 1. The pond system with naturally sealed bottoms of the ponds not only helped to retain the water longer on the land but also offered new possibilities as for example cultivating fish in the ponds and adding water plants. The humidity in the edge zones along the ponds allowed other types of plants to grow then they had before.

A water retention space with natural materials (like examples from Sepp Holzer) could be built (see the map later on Water retention spaces) after that space had been bought from some private ejidatarios owner.

**Earthquakes and water**

Although the regeneration of the earth’s surface helped to change the water system to the better, there still remain another factors creating insecurities about the system. The mentioned danger of little earthquakes – by actuality even the danger of the strongest ever measured earthquakes - might block the existing underground waterways causing them to change their direction and leaving the existing current springs dry. That’s why the first emphasis went to use swales and contour lines to catch rain because they don’t depend on the (re)location of springs.

**7.3.2 Reforestation and agroforestry**

**Guiding principles of ecological restoration**

Ecological restoration became an integral part of creating more self-reliance and self-sufficiency and resilience for the Chichi community and for the regeneration of natural environments able to sustain the community into the future.

Guiding principles of ecological restoration included:
• A renewed respect for the Earth, all her species and habitats, recognising our spiritual connection to Nature. (see The Great Work by Thomas Berry)

• Recognition that wilderness areas are essential habitats for other species. Therefore we must relinquish the need to use and/or manage all the land and oceans of the planet. Which for Chichihuistan is to some extent already the case where some land was already protected but was under huge pressure for exploitation, which needed to be stopped and reversed with degraded lands restored and regenerated and as part of the process gain opportunities for individual and community development (skills, products, enterprises, etc.).

• A commitment to live more simply and demand less of the Earth, while also embracing a high quality of life, which for Chichihuistan is how it already was from an ecological footprint perspective. Translated to the situation in Chichihuistan, it is was about creating self-reliance and higher levels of self-sufficiency within the bioregion, local empowerment and ability to co-create a regenerative future rather than exploitative.

• The health of the bioregion is the responsibility of the resident individuals and communities. Ecologically healthy local cultures give rise to greater cultural diversity worldwide.

• World livestock population must be substantially reduced (through shift to vegetarian or low meat diets) to enable ecosystem restoration and provide habitat for wildlife, which for Chichihuistan meant an integrated permaculture based approach to food production with high degrees of diversity and focus mostly on traditional but also other food staples.

• Governmental, corporate and industrial policy shifts from a philosophy of unlimited economic growth to a sustainable and restorative future. (see Limits to Growth) – which outside of direct reach of Chichi but is about creating an example of a sustainable and regenerative community for others to see and introduce elsewhere.

Urgency

The most important aspects for restoration ecology work in Chichi were related to stop deforestation, stop sand mining, reforest degraded land areas (erosion control and replanting) to encourage natural ecological systems restoration and ways of sustainable forest stewardship and to some extent use for local needs and production (not gross exploitation but for community needs which may include some trading for income), and underlying design and planning based on permaculture principles (i.e. zones and sectors) to provide sufficient land for food production and use of hybrid approaches (zone 3 and 4) for food forests, analog forests and silviculture for bioregional “needs”, envisioned, co-designed and implemented with and by the Chichihuistan community.

Application

The people in Chichihuistan took the situation as an opportunity to not only restore the previous landscape but to create a regenerative system of agroforestry where cattle and pigs in neighbourhood with fruit trees and other edible plants have found a place to live. After some years the land started to create a significant yield both from trees, crops and from livestock.

First a collaborative team of people from Chichihuistan planted trees – integrated in and in alignment with the system of keyline swales - to give the ground more stability. Then they seeded crop in between. Through the mixture of swales, trees and crops the erosion could be slowed down and stopped. The trees brought up nutrients from the lower ground and the falling leaves brought it to the surface and made it available for other plants and a continuous cycle of nutrients was established.
In the red marked area (see Figure 7-3) the assembly invited one neighbour to consider reducing his number of cattle and horses. In this area they considered the application of a Yeomans plough to open up the compacted soil and permit the natural infiltration of water again. And they proposed reforestation in this area where all trees were cut to enable agricultural use. By offering to the landowner guidance he opened up to try the keyline approach as well as agroforestry and great results of agricultural yield have been achieved.

7.4 WATER MANAGEMENT

While stabilizing the ecosystem through reforestation and keyline swales, people started also to rethink their water management system and associated systems (e.g. food production).

7.4.1 Investigations and studies

Luckily a retired nuclear researcher came to settle in the community in 2017 who was due to his background also a water expert and specialised in underground water flows. He took care of a main part of the investigation of the underground water flow. Why didn't the water come back again, even in the rainy season? Through the help of a not corrupted civil servant from the water resources department, the Chichi people received some basic maps and information about the local geology and the water system. With that material and crowd funded money they paid a private enterprise to do the necessary investigations and research, to obtain restorative management plans for the water systems.

In the same way the inhabitants from Chichihuistan managed to get a topographic map of their area and research was done especially for the upper catchment zone beyond the spring/manantial nr. 1 (Figure 7-3).

Before they had this material, the inhabitants from Chichi applied already practical techniques, as described in the chapter before, that are helpful anyway and could be done even without the results of the studies in order to regenerate the eroded soil and the water retention capacity.

Generally they gave water that was needed for drinking the first priority (taken mainly from springs) and water that was needed for agriculture (plants and animals) the second priority (taken from springs, rainwater, ponds).

7.4.2 Managing water sources

Water from springs

There were six existing springs that were relevant for the water household in Chichihuistan. Each one had its own particular challenge to let it be a working part of the water system and accessible for all. You find the position of the springs (manatiales) on the Chichihuistan property and water map (Figure 7-3).

Spring 1, 2, and 3 (on the land of a Canadian owner)

Spring 1 was the main important spring for Chichihuistan and it had dried out although sometimes after heavy rain it started flowing again. It was situated in the area influenced by the mines 1 and 2. The main emphasis went to reactivate this spring and to stabilize its flow through recollecting water above its position. As soon as the mines were accessible and the investigation showed a relation between the mines and the lack of water here the local people implemented reforestation and keyline swales (short term actions with long term...
consequences). At the beginning especially the swales contributed to an improved water household in that area and later, after vegetation had been restored on the mines water started to infiltrate the ground again and water was running to the spring.

Spring 2 and 3 had a normal water flow but generally there were problems with the landowner. The access to the mines was not clearly guaranteed for everyone although there were at least spoken agreements about the common use of the springs. People from Chichihuistan who were trained in communication and negotiations, began conversations about the springs with this owner and they talked about the interconnection with the way he was using his land.

But to be sure the situation could be used in a positive way to come to a written agreement: the Canadian could get help in the form of labour and education in Permaculture to use his land more efficiently when he would make a written contract.

For making a clear contract for the use of the water and showing the advantages of cultiving his land with Permaculture techniques for the best of all, a deal was made. As exchange for constantly guaranteed access to the water for all the people from Chichihuistan and first external Permaculturists helped the owner to make his land more fertile, teach him right techniques for silviculture, agroforestry and/or to make his land a wetland again and how to not overuse it. Even water retention ponds were created.

**Spring 4, 5 (land of a foreign man unfriendly to locals)**

These two springs had little water flow and similar to the first three springs the people of Chichihuistan started to contact the owner. They showed him the advantages of community life, invited him to celebrations, they showed him gratefulness, got in touch and tried also to learn from this owner. After this was successful and the owner was better integrated in the community, a similar process as with the land of the Canadian owner started. Together they found solutions to reactivate the springs by recollecting water above their position through reforestation and keyline swales (short term actions/long term consequences). First of all they slowed down the water runoff so that the water could drain into the ground and feed the springs.

**Spring 6 El Palmar (Ejido land)**

The spring called El Palmar had little water flow at that time. Because it is situated on Ejido land this was the spring where the circle of influence was the biggest for people of Chichihuistan to start right away with the regeneration processes described for the other springs above. They created water retention spaces (marked with clouds in Figure 7-6). Here they also built dikes following the natural waterbed. The collected water since the project was finished is pumped up to the village with arête pumps and partly stored in the ground to regenerate the highly degraded land further downstream.

At the places beyond the springs, again with the help of experts, the Chichi people created a water retention system with cascading ponds. They applied the technology of Sepp Holzer for water retention areas and they started with the most important spring manantial 1. The pond system with naturally sealed bottoms of the ponds not only helped to retain the water longer on the land but also offered new possibilities as for example cultivating fish in the ponds and adding water plants. The humidity in the edge zones along the ponds allowed other types of plant to grow than they had before.

A water retention space with natural materials (like examples from Sepp Holzer) could be built (after that space had been bought from some private ejidatarios owner.)
Wells and search for new alternative water springs

Some wells had been already drilled into the ground with probably the side effect of disturbing the water system and water table in the neighbouring lots.

- Search for new water springs on Ejido land. Drilling is necessary and research where there are opportunities. Mid/long term; short term if financing is available.
- Reforestation and the siting of a terraced pond system might cause in longer term new springs to appear.

Rainwater

One of the ways to retain more water is collecting rainwater. This is very essential in Chichihuistan because of the extremes of months with nearly no rain to months with high rainfall (0-1000mm/month). Especially in June, August, September it rains in Chichi up to 1000mm/month and the average of a year is about 1500mm of rain. This is a lot compared for example to the yearly average of about 800mm rainfall in many parts of Germany (with monthly 49-85mm). The yearly amount shows that rainwater harvesting in Chichihuistan is likely a successful strategy. Therefore the people in Chichi started collecting rainwater systematically through different techniques.

Techniques for harvesting rainwater

- Catching and slowing down water
- Retention spaces (it was best done on own land where there is a water spring)
- The local people also created large underground water reservoirs/cisterns to collect water in the wet months and for use in the dry periods in agriculture (if possible also as drinking water). There are ancient Maya cistern techniques that were applied here. Additionally they installed water pumps.
- In 2017 the government had also subsidised the collection of rainwater by giving every household a plastic container for harvesting water on the own lot. And the provincial government wanted to build a cistern with concrete and plastic sheets. This idea could be stopped and the investment transferred to the ancient Maya cistern technique.
- The created Coop (see Economic Dimension) invested in implementing water harvesting possibilities in all private houses as well to enable the use of water for drinking and irrigating on the private domains.

### Harvesting rainwater from roofs

After a while water harvesting took place from nearly all the roofs. In the beginning the bigger roofs of public buildings were used as for example the roofs of the school. Before the beginning of the transition movement one roof of the three different school buildings was already equipped with the appropriate water filter system and water tank. Financial support could be found for the equipment of the two other roofs from the ecological department Pronatura.

One of the most successful water collecting projects was harvesting rainwater from the basketball/ sports hall that has an approximated surface area of 400m² while 1500mm of rain falls there in a year. Starting collecting this water the people gained the amount of 600,000L each year. Since then, with a newly installed distribution system, starting with a cistern as collector and water pipes running down the slopes the people in Chichi managed to irrigate all the crops and vegetables in the area down the Ejido. Here it made sense to keep the zinc roof and not make a green roof, because the collected water created a certain independence from the springs.

### 7.4.3 Water distribution network

#### Fresh water supply

Beyond the regeneration of the natural environment people in Chichihuistan aimed to create a fair and responsible system for the distribution of water spread over the different properties, which wasn’t possible without including education for the responsible treatment of water and creating group consciousness. Now Chichihuistan has a more systematic water distribution. The main water supply is still coming from the springs. As holy places they were kept untouched as before. Underneath the springs the water retention spaces were optimized. From there as before water hoses are running down the slopes to distribute the water. Sprinklers spread it over the fields. Technical improvement was needed mainly to solve problems with hard water. A magnetic system on both ends of the tubes helped here.

The main change was an improvement of agreements. Spring 1 and spring 6 were taken as pilot projects. With the success of a better water distribution system and fair and responsible agreements for the use of it, people in Chichihuistan started to gain trust and they applied the same principles to the other springs.

#### Wastewater - sewage

A central wastewater system of Chichihuistan was hardly existing and people also started to see an opportunity to decentralize the solution for wastewater by creating constructed wetlands. The Inla Kesh constructed W.E.T. system served as a good functioning example for the community. Before, most of the inhabitants one-by-one agreed to use compost toilets, which was an affordable solution for all of them. In some cases the house owners learned to separate urine from faeces and they created a good fermented fertilizer mixed with horse manure.

The W.E.T construction followed an easy method with low economical costs and without negative ecological impact and hands and muscle power did a lot of the work. Stones and gravel even carbon could be found in the area everywhere for free. They put in practice a very
appropriate system: The idea is to have urine-separating compost toilets so that the urine could be left until it is hygienic and it serves then as fertilizer, while the solid matter is composted and also serves as fertilizer. At the same time, grey water flows by gravity through the constructed wetland and the purified water used for irrigation. All the overflow of this water can be used immediately for the tree irrigation.

Figure 7-7: Schematic of a WET System

7.5 Food Supply

7.5.1 Healthy diet

It was a clear goal from the beginning to improve the food supply and create a more healthy diet for the inhabitants from Chichihuistan. To get there, people needed to create more diversity in the cultivated grains, vegetables, herbs, salads etc. Volunteers from the university in San Cristobal made an analysis about the used food and its average nutrient content. They could identify the nutrients that were lacking. With this knowledge and the improved quality of soil and water management, which allowed more diversity of plants to grow, with better cooperation and with the help of Permaculture and biological pest control (e.g. through plant communities and natural pest management) they could first determine which plants would satisfy the need of nutrients, secondly they could cultivate some new species of plants on the land and third people from Chichi had access to a more balanced diet.

Monika was at that time a kind of deputy for health in the assembly and that gave her the chance to bring the topic health and healthy nutrition on the agenda.

These were the goals that people in Chichihuistan wanted to reach to improve their diet:

1. Create productive, resilient and regenerative local food system, localized food processing enterprises and establish bio-regional trade system (including food cooperatives and CSA at a later stage)
2. Protecting wilderness and regeneration of land, forests and waters – close sand mines and restore land and forests, establish, food forests, analog forests and silviculture

3. Overarching approach to food system design is Permaculture to create sustainable and regenerative socio-ecological systems, by cooperation with nature and people.

4. Integration of human systems into the regenerative cycles of nature by design, by co-designing regenerative systems based on symbiosis and cooperation with humans and non-human family of life.

The following paragraphs show more details on how these goals were accomplished.

7.5.2 Food for own use

From Milpa to crop rotation

In the Milpa cultivation beans, pumpkins and corn are grown together so that the plants support each other which is generally a good idea. The problem of this system is that without alternating every year with other vegetables or fruits, the soil on a field is quickly exhausted and then another part of the forest will be cleared. To avoid this deforestation that has led to landslides, destruction of habitat and an imbalance of the water system, the people from Chichihuistan started to apply crop rotation.

A pilot project of bio-intensive cultivation was already running before the transition process began. People started to use the potential for growing wheat, buckwheat and linseed, but they needed first to get used to these plants.

Fertility on private domains

The families still have – as before, some animals like pigs and chicken on their private lots. The land is now used according to permaculture principles (e.g. zoning, sectors, plant communities) for cultivating herbs, salad, kale and other plants. Now with a better supply of water, also tomatoes and potatoes grow here. Additionally the people started composting their organic waste and the soil quality improved. In this way many problems with vermin as for example the larvae that ate the kale and salad were solved.

Real cooperation on Ejido land

The concept of the Ejido is a piece of land for common use. The disadvantage in Chichihuistan was that the people divided it in individual lots and each family cultivated their own little piece of land.

The new goal was to cultivate the land based on Permaculture principles. Normally that means you start with observing the land for one year but due to the pressure on using the land for the subsistence food production, this was impossible for all the land at the same time. Permaculture experiments could be done on a smaller part of the land to find out how it could improve the agricultural outcome in Chichihuistan. The other, biggest part of the land could be used for subsistence because for daily needs there had to be food for everyone. Some smaller improvements could be done already on the bigger part of the land. A failing of the experiment(s) and waiting for the outcome of the one year observing (and preparing) process wouldn’t have so many negative outcomes. But without cooperation and changing the way of using the land this seemed impossible requirements.

After having understood the advantage of cooperation and having gained more trust in each other, people in Chichihuistan began to combine some private lots and cultivate them in
collaboration. This was a very important step because only through this cooperation and by gaining more efficiency in the agricultural work, people in Chichi could afford to leave some parts of land unused or open for experiments with growing new sorts of crops in regenerative ways under the influence of the Permaculture principles. Also pigs were held on the experimental land to use their habit of churning the ground while searching for food. By this they loosened the ground and prepared it for later agricultural use.

The people had already cultivated the Ejido land with milpa and fruit trees (small peaches, apple, lemon, avocado and in certain microclimates bananas). Additionally they introduced a three-field crop rotation. It became then possible to use pigs to prepare the ground on parts of land that were not used for growing plants at that moment. In the next period the cultivated plants could grow on a better-prepared ground and the yields increased significantly.

**Including the lower land**

Some people in Chichihuistan have pieces of land in the warmer lower areas about 4-5 walking hours away. Other plants grow there like mango, moringa, and cacao. With an integrative shared-work strategy people in Chichi began to implement these pieces of land in the whole strategy of food supply for Chichihuistan. They used the possibility to widen the diversity of the diet for the whole village and a potential for growing food that can be sold. The people created additional value from cacao by making chocolate and they dried mangos that were sold then as snacks in the shops in nearby towns.

**Alternative plants and fruits for cultivation**

It was easy to cultivate mushrooms in the warm and humid climate of Chichihuistan. Some sorts of mushrooms were already sufficiently on the market and when growing them the people in Chichihuistan used them for own needs. For Shiitake mushrooms there were interested clients in San Cristobal and the Rivera Maya and by focusing on this type of mushrooms a new market could be unlocked.

They cultivated the Mushrooms in constantly humid tree trunks, in hay bales or in sawdust filled in sacks. These sacks were even used to form the edges of swales because they automatically suck water in and keep the sawdust humid and help to stop the water running away uncontrolled.

**7.5.3 Food Surplus**

**From subsistence to surplus**

With a more balanced and sustainable agriculture and land use based mainly on Permaculture principles slowly more and more surplus of food could be generated. This opened opportunities and the people in Chichihuistan started reaching out more to the world and generated awareness for their sustainable way of living.

To get this done, the following goals were formulated:

- Create productive, resilient and regenerative local food system, localized food processing enterprises and establish bio-regional trade system (including food cooperatives and later possibly CSA)
- Protecting wilderness and regeneration of land, forests and waters – close sand mines and restore land and forests, establish, food forests, analog forests and silviculture
- Overarching approach to food system design is Permaculture to create sustainable and regenerative socio-ecological systems, by cooperation with nature and people.
Integration of human systems into the regenerative cycles of nature by design, by co-designing regenerative systems based on symbiosis and cooperation with humans and non-human family of life.

**Processing food**

To help selling the surplus and finding a niche in the market, some food was grown and processed to create a higher value and identification as a particular product.

Here are some examples of food that obtained additional value through processing

- Dried mushrooms
- After having established a more stable water management, the people in Chichi made their own Cola and lemonade. Chichi Cola became a top seller and is even based on a healthier recipe than the normal cola and is produced with organic ingredients. Marketing it successfully helped to reduce the use of cola.
- Another potential that is still tested is making medicine and other healthy food from local herbs and other plants. For example the people began experimenting with coca of which nowadays many healthy products are made.

**Delivery area**

In summary the people from Chichihuistan unlocked the three, in the descriptive chapter described potential client groups, the tourists, the lower middle-class and the students. They live all in the region, especially in San Cristobal. The step to serve the global online community with products from Chichihuistan is not yet made but will follow probably soon if the people in Chichihuistan decide to do so.

**Local shops**

There are still the same shops in Chichihuistan and they still sell things for basic needs as sugar, soap but now they sell it in organic quality and they sell healthy types of fast food and the famous Chichi Cola. Additionally there is now a shop owned by the cooperative selling goods from their own production.

**7.6 Buildings and Construction**

**7.6.1 General guidelines**

There were no larger buildings planned in Chichihuistan when the transition process started. Still some general guidelines for the constructions were necessary to guide the process:

1. Recover local materials, building new roofs with Zacate de Cuba (a local plant) or recover palm leaves.
2. Create areas in the Ejido to plant bamboo and palm
3. Build walls with local clay making them water resistant with the sap of nopal (cactus)
4. Creating chimneys in houses
5. Supplement ovens fired with wood by a common Schaeffler Mirror for a common kitchen and the use of rocket stoves (see the chapter energy supply)
6. Create a good wastewater system in individual houses (see water management)
7. Implement compost toilets (see water management)
8. Obtain water harvesting materials for every household
9. Obtain a water harvesting system for the basket yard (see rainwater)
10. Use stones for foundations, tar for waterproofing and wood for the roof structure

Especially the construction of roofs needed attention. You find the steps towards solutions in the next chapter.

### 7.6.2 Roofs

The short lifetime of the roofs and the presence of smoke within the houses were the main problematic parts of the local private buildings in Chichihuistan. People started to experiment with different strategies to solve the problems and in consequence one can now find different approaches in Chichihuistan for constructing roofs.

#### Green roofs

In Inla Kesh some of the roofs are green roofs, but it was very difficult to obtain the adequate geo-membranes (waterproof plastic sheets) and they are expensive. So the team there rejected the idea to introduce green roofs as an alternative to the existing zinc roofs. There were hardly any new green roofs built.

#### Palm leafs and thatched roofs

Some of the older houses especially in the kitchens use palm leafs that are protected by the smoke and persist more or less 10 years. In the sleeping rooms without open fire, insects in 2 or three years make the roofs unusable.

Therefore the people in Chichihuistan started to investigate the treatment of leaves with salt of borax and some other sort of treatment.

And with the help of a specialist from Germany the people tested the technology of thatched roofs with local materials as for example Zacate de Cuba (see pictures further on) that was applied then with a borax salt application. The Zacate plant is growing fast, is local and is therefore cheap.

If the tests with the palm leaves show success after some more years the people in Chichi consider creating a palm plantation in the ejido together with a bamboo plantation to get bio-construction material for the roofs. This became necessary because of the uncontrolled tree cutting the number of palms started decreasing it has become hard to get leaves for all the houses.

![Figure 7-8: Zacate Plant](Image)
Chimneys and smoked roofs

For newly built houses the study group proposed another technology. The houses in Chichihuistan don’t have chimneys and the smoke is everywhere in the house which keeps insects away that destroy the wooden/plant parts of the house. To combine the positive effect by avoiding the negative one, smoke in every corner of the house, the proposal was to build a chimney until the lower part of the roof construction and let the smoke evade into the space of the roof construction. This way should still smoke the roof to expel insects but leave the room for living and cooking smoke-free. A pilot project was started to test this approach.

Governmentally subsidized concrete houses

In these years the government subsidized concrete houses. For the people in Chichihuistan to have such a house was a sign of wealth, but ecologically they were disastrous. So first the people had to learn how to improve their situation with local techniques. Then people in Chichihuistan used the pilot project ‘smoked roofs’ as a successful example to convince the government of supporting local sustainable construction. To be ahead of the construction of many concrete houses, the pilot project needed to take place as soon as possible and it did.
The demonstration house included the use of a compost toilet and other regenerative low tech solutions.

Through its scale and time linking components this project contributed to the resilience of Chichihuistan.

7.6.3 Private domains

The sum of many different interventions towards a regenerative lifestyle changed the face of the private domains significantly. Following figures show a schematic exemplary representation of the evolution of the domains in four steps:
Figure 7-10: Sequence of transformation of a conventional village into an ‘ecovillage’
## 7.7 ENERGY SUPPLY

### 7.7.1 Prosperity and energy use

**Energy SWOT**

Since it was of great importance to raise Chichihuistan out of poverty, the first and most important question about energy was: Can a better livelihood for the community be achieved without a great increase in energy use? The second question was if the (additional) energy could be produced renewably.

It was important to design a transition to a better livelihood in a way that was different from the destructive and degenerative economic growth that has been happening in the world since the industrial revolution. This SWOT analysis was at the beginning to inform the energy design:

<table>
<thead>
<tr>
<th>STRENGTHS</th>
<th>WEAKNESSES</th>
</tr>
</thead>
<tbody>
<tr>
<td>● Small energy use and carbon footprint today</td>
<td>● Currently spending a lot of time on hand-washing and gathering firewood</td>
</tr>
<tr>
<td>● Not addicted to appliances</td>
<td>● Spending money on electricity bills for lights and TV</td>
</tr>
<tr>
<td>● Not addicted to gas</td>
<td>● Open-fire cooking and smoke form firewood bad for health</td>
</tr>
<tr>
<td>● On average, 2-4 hours of sunshine per day (more between December and May than between June and November)</td>
<td>● No computers and weak light bad for education</td>
</tr>
<tr>
<td>● There is potential for harvesting wind using smaller wind mills</td>
<td>● Weak light (and no machines at all) bad for work and limits income producing activities</td>
</tr>
<tr>
<td></td>
<td>● There is no larger hydro potential</td>
</tr>
<tr>
<td></td>
<td>● There is little biogas potential because forests should be regenerated, and all other material is either eaten or should be used for composting and fertilising</td>
</tr>
<tr>
<td></td>
<td>● Small earnings put conventional renewables out of reach</td>
</tr>
<tr>
<td></td>
<td>● Road distances are large, prohibitive for cycling in many instances</td>
</tr>
<tr>
<td></td>
<td>● There is no biofuel potential if one wants to avoid competing with food production</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>OPPORTUNITIES</td>
<td>THREATS</td>
</tr>
<tr>
<td>● Mexico is reforming its energy sector to become less dependent on fossil fuels</td>
<td>● 90% of power in the Mexican grid comes from fossil fuels and prices are going to rise if the reforms do not work out</td>
</tr>
<tr>
<td>● Religions have a strong environmentalist movement</td>
<td>● TV sets are the gateway for consumerist worldviews</td>
</tr>
<tr>
<td>● There is significant low tech, low temperature geothermal potential in Mexico and in the local region for heating and cooling</td>
<td>● Electricity is sometimes intermittent</td>
</tr>
<tr>
<td>● Low-tech solutions are being developed for many previously energy-dependent activities</td>
<td>● Costs of renewable power production equipment, even as they are falling, are still much higher than being on the grid</td>
</tr>
<tr>
<td>● Agencies working in developing communities often focus on providing sustainable and</td>
<td>● Energy efficient appliances are more expensive</td>
</tr>
</tbody>
</table>

### Table 7-1: SOWT Analysis for Energy in Chichihuistan
The two paths

Based on the analyses and processes presented above, here is an overview of areas that are likely to change as the community achieves a better livelihood. For each area, there are two paths – an energy-intensive one, and a less energy-intensive one.

Table 7-2: The Two Energy paths for Chichihuistan

<table>
<thead>
<tr>
<th>We Want</th>
<th>Ways to Get There:</th>
<th>Energy Spent</th>
</tr>
</thead>
<tbody>
<tr>
<td>More entertainment</td>
<td>Community socialising, celebrations and games</td>
<td>None</td>
</tr>
<tr>
<td></td>
<td>TV and radio</td>
<td>A lot</td>
</tr>
<tr>
<td>More light</td>
<td>LED lights</td>
<td>Some</td>
</tr>
<tr>
<td></td>
<td>Cheap lights</td>
<td>A lot</td>
</tr>
<tr>
<td>More efficient work</td>
<td>Hand tools and more skills, some shared electrical tools</td>
<td>Some</td>
</tr>
<tr>
<td></td>
<td>Electrical machines only. Individual ownership</td>
<td>A lot</td>
</tr>
<tr>
<td>Information and education</td>
<td>Teaching, communal computers and internet</td>
<td>Some</td>
</tr>
<tr>
<td></td>
<td>Individual computers only</td>
<td>some</td>
</tr>
<tr>
<td>Mobility</td>
<td>Car pooling and sharing</td>
<td>Some</td>
</tr>
<tr>
<td></td>
<td>Individual care and motorbikes</td>
<td>A lot</td>
</tr>
<tr>
<td>Less tedious washing of clothes</td>
<td>Hand/foot powered washing machines</td>
<td>None</td>
</tr>
<tr>
<td></td>
<td>Individual electrical washing machines</td>
<td>A lot</td>
</tr>
<tr>
<td>Food preservation</td>
<td>Natural cooling methods, other preservation methods</td>
<td>None</td>
</tr>
<tr>
<td></td>
<td>Refrigerators</td>
<td>A lot</td>
</tr>
<tr>
<td>Water comfort and hygiene</td>
<td>Gravity fed rainwater, when possible also spring-water or wind and solar pumps</td>
<td>Some</td>
</tr>
<tr>
<td></td>
<td>Electrical pumps</td>
<td>A lot</td>
</tr>
<tr>
<td>Less smoke, and less time spent gathering firewood</td>
<td>Solar cookers, more efficient wood-stoves with chimneys</td>
<td>Some</td>
</tr>
<tr>
<td></td>
<td>Gas cookers</td>
<td>A lot</td>
</tr>
</tbody>
</table>
This table was used as a navigation map. Just like with marine navigation, it is important to know the possible routes well in advance, and also to steer the community like a ship: thinking a few steps ahead and having in mind that it takes time and effort to change the course.

Some increase in energy consumption was likely to happen – and happened, and for the good. However, in areas of life where there were viable low-energy alternatives, in many cases the inhabitants of Chichihuistan chose them to not getting dependent on energy more than necessary.

Navigating all dimensions

Raising the consciousness in the minds and hearts of the people in Chichihuistan about how to deal with energy consuming attitudes and objects was necessary first to find solutions for the above raised questions. Improving the own situation without being consumed by the seductive Western life style was the challenge for defining the appropriate interventions for energy supply. Low tech solutions can for example create a higher comfort than being at the mercy of the unforeseen consequences of high tech applications. With the underneath described approach volunteers from the outside prepared the path for a conscious use of energy.

“Achieving a better livelihood” is not a purely economic issue, just as “avoiding a great increase in energy use” is not a purely ecological issue. These two desirable outcomes are parts of a transformation that must be navigated from all four dimensions of sustainability, as shown in the following diagram (Figure 7-11):
Figure 7-11: Energy Transitions for Chichihuistan

Figure 7-11 shows that starting from the worldview aspect and promoting true happiness and communal spirit instead of consumerism and individualism can have beneficial effects for Chichihuistan, the bioregion and the planet. One of the crucial ways in which this process can happen is via the practice of conscious energy use.

However, “conscious energy use” does not and cannot mean the external imposition of ethical standards or limitations. It must come as a consequence of practical daily choices rooted in the conscious practice of sharing, doing things together, meaningful spending, and focus on quality work, quality time and quality education. Such conscious practice has to be integrated in all economic growth (quantitatively and qualitatively) of the community, i.e. in the process of rising out of poverty.
Ideally some external funding for renewables will support this practice, so that the issue of energy supply can be addressed too. This will demand a campaigning and fundraising effort.

7.7.2 Energy production

As was indicated before changing their lifestyle it became necessary for the people in Chichihuistan to actively organize their own energy supply. How different possibilities were used is described in the following:

Geothermal energy

Geothermal is a large-scale technology efficient for electricity and an investment in Chichihuistan was not profitable. With external help the people in Chichihuistan applied successfully low tech means for generating heat through geothermal energy.

Micro hydro

One simple technology that people applied to generate energy was the introduction of small micro hydro facilities. Since early years of the transition of Chichihuistan these create energy by using the flowing water in the flexible hoses that lead to private domains or other pieces of land. Each meter of height distance delivers a certain amount of energy related to the amount of water that is streaming through it.

Solar energy

At some places the inhabitants of Chichi used solar panels as energy providers. They delivered energy for example for water pumps that were necessary at different places of the water system.

With support from the outside the people built and bought solar stoves for the use in single households, which were later built by the community themselves. As a community people built themselves a huge Schaeffler Mirror (type of solar cooker).

Wind energy

There is enough wind to harvest in Chichihuistan with smaller windmills. Having learned it in a workshop provided from a specialist, inhabitants from Chichi built wooden windmills (diameter approximately 1-1.5 meter) for the energy supply in their houses. They installed them on a beam closed to their houses and applied different energy storages as for example motorcycle batteries. After just a short time this technology became a business in Chichihuistan. They started selling the knowledge and self-made windmills to other villages (see Economic Dimension).
8 CONCLUSIONS

8.1 Summary of Design Proposals

This is a lean summary of the proposals elaborated in the four dimensions. All proposals are mutually supporting. Very direct synergies between them are pointed out in the text.

8.1.1 Economic Dimension Proposals

From the idea to the business plan

- Continuing and developing already existing projects: chocolate, sauerkraut, marmalade, holistic education, carpentry etc.
- Continuing the existing pilot-projects: natural building, water management, organic agriculture.
- Continuing to harvest new business ideas, such as: BioHighTec energy - fixed mirrors, micro hydro, small wind mills, wind water pumps, well digging; upcycling textiles; various handcrafts - furniture, toys, jewellery, household items, educational materials; producing kombucha, stevia, moringa, healthy cola, soap; tree nursery; local traditional natural medicine.
- Going through the initial start-up phases from the “big idea” to the master plan for every business idea that comes from the community with a strong vision and enthusiasm. Analysing and assessing actual business potential.
- Making a “Chichi Goes COOP” business plan and implementing the SMART criteria.

From the legal structure to the funded business

- Analysing potential legal structures through the 8-capital framework, with the addition of the 9th capital: Consciousness.
- Creating a social regenerative transition enterprise/cooperative/NGO with an appropriate governance structure (more than one entity may be needed).
- Identifying and connecting with local, regional, national and international stakeholders.
- Creating ethical guidelines for collaborations and partnerships.
- Supporting appropriate education (including that of needed workers) by finding sponsors and by creating opportunities for parallel work and studying.
- Fundraising for tools, infrastructure, material stocks and running costs in the first phase of the projects identified as viable, until self-sufficiency is achieved.
- Establishing a volunteering programme.

Needs of community, market and bioregion

- Continuously ensuring that the production primarily satisfy local needs.
- Continuously developing cooperative capacities, tool-banks and other forms of sharing.
- Continuously integrating and cross-linking all business ventures within the community.
- Developing alternative trading systems such as barter, time banking, gifting, bioregional currency.
- Co-creating market events in nearby towns.
- Mapping bioregional potentials towards a circular economy.
Profit, regeneration and additional business opportunities

- Considering additional business opportunities such as holding courses (reading and writing, EDE, permaculture, community building tools, Dragon Dreaming, conflict resolution, governance, NVC); selling core-activities as services (bio-intensive agriculture, water management); trading CO2 emissions coupons etc.
- Investing a part of the sales income into education, environmental restoration, and the running costs of the Community Assembly.
- Investing profits into the community.
- Supporting the development of right livelihood, generosity and build regenerative vitality (feedback loop with the social and worldview dimensions).
- Supporting the creation of the ecological restoration plan, including the topographical/ecological survey maps (feedback loop with the ecological dimension).
- Considering possibilities for an eco-regeneration enterprise connected to the restoration of sand mines (regenerative agroforestry, eco-museum and eco-tourism connected to the museum)

8.1.2 Social Dimension Proposals

Community Vision (see also "Visioning with Chichihuistan" in the Worldview Dimension Proposals)

- Establishing a Core Group to start and spread processes.
- Visioning and group mobilisation via workshops, games and other techniques.
- Supporting processes with a balanced mix of participatory facilitation and suggestions.
- Creating vision-integration prerequisites: community agreement, story of place, consent-based decision making.

Building and maintaining regenerative communities

- Developing skills for open, compassionate and non-violent communication.
- Developing self-awareness and self-management through prayer, contemplation and nature connection.
- Resolving traumas and shadows by means of circles, transformation processes, rituals and arts.
- Building group-energy through games, art, rituals, sharing and conflict-resolution skills.

Leadership and power dynamics

- Supporting the original deep-democracy approach of the community Assembly (through all the above-mentioned proposals).
- Regenerative-leadership training for the Core Group and for the Assembly Head (Comisariado), and securing funds for Comisariado-work remuneration.
- Creating and double-linking management circles responsible to the Assembly.

Arts and celebrations

- Fostering community cohesion through creating special atmosphere, inspirational reading and sharing of observations and experiences.
- Proceeding to collective art-making, performing arts, making songs (including work songs for the fieldwork) and forming a community choir.
- Celebrating events related to life-cycle, cycle of nature etc.
Bioregional development (see also “Education and daily life” in the Worldview Dimension Proposals)

- Connecting with the bioregion by studying, observing and mapping the bioregion through projects by volunteers, schools and churches.
- Children interviewing elders, telling stories and making plays about wildlife and the landscape in the proximate and wider region.
- Raising awareness about benefits of ecological and economic collaboration in the bioregion.
- Networking within the bioregion.

8.1.3 Worldview Dimension Proposals

Visioning with Chichihuistan (see also “Community vision” in the Social Dimension Proposals)

- The visioning work of the Core Group is to be supported by culturally appropriate tools such as SDG (Sustainable Development Goals) Cards, Dragon Dreaming, the Oasis Game, bearing in mind the community’s Christian identity and indigenous roots.
- The work of the Core Group should start including the entire community through exercises such as the “Chichi” Questionnaire.
- Developing (and later monitoring) the Chichihuistan Happiness Index for qualitative and quantitative happiness assessment.

Spiritual ecology

- Inviting priests to encourage ecological lifestyles and holding spiritually-rooted eco-workshops.
- Collaboration (workshops, networking etc.) with the Global Catholic Climate Movement, Evangelical Climate Initiative, Evangelical Environmental Network and similar organisations.
- Creating/preserving celebratory practices like prayers and rituals connecting the inner work, community and ecology.
- Creating/preserving sacred spots and sacred walks.
- Resolving issues around prayer spaces for both religious groups within the community.

Education and daily life (see also “Bioregional development” in the Social Dimension Proposals)

- Introducing regenerative volunteer-run programmes and workshops into schools.
- Interviewing the elders and making a database of traditional ecological knowledge.
- Designing, supplying and promoting a healthy local/regional menu/diet.
- Education and support for other forms of health, from satisfying basic needs to issues related to work, recreation, hygiene and various forms of wellbeing.

Transformation and transition

- Supporting and harvesting the results of individual transformation by fostering appropriate relationships to participation, work, community building and material interventions.
- Encouraging individual development of awareness and balance through any individually suitable technique.
- Providing psychological support through trained volunteers, Co-Counselling and various forms of care within the community.
- Harvesting the power of the central Christian concept of Love.
- Creating structures and spaces that contribute to health, intrapersonal and interpersonal balance and wellbeing.
- Educating about conscious resource and energy use and its local, bioregional and global implications.
- Fostering a sense of participation in the global transition movement and the feeling of being supported by it.
- Supporting various forms of sharing and exchange.

8.1.4 Ecological Dimension Proposals

Permaculture
- Mapping topography and various layers of the ecological reality and, based on that, applying permaculture sectors and zoning and permaculture design principles in all subsequent projects.
- Applying principles of organic and regenerative agriculture.
- Managing nutrient cycles for food self-sufficiency.
- Diversifying agricultural production, increasing yield and creating additional opportunities for food processing and preserving.
- Providing fresh and processed foods to local and bioregional markets.
- Using food for nutritional health, cultural catalysis, community cohesion, connection to land and development of a worldview of abundance and ecological stewardship.

Reforestation, keyline swales and regeneration
- Making public campaigns and internal agreements leading to the acquisition and restoration of sand mines, and to contracts for responsible new ones in appropriate areas only.
- Making topographic maps.
- Making keyline swales and sediment traps in abandoned sand mines; planting vetiver.
- Making water retention systems with pond cascades, especially below water springs.
- Reforesting deforested and eroded areas by making agroforestry, leading to ecological and economic benefits, but also setting an example for neighbouring landowners.

Water management (building upon the regenerative results of the previous section)
- Getting help from international experts and civil servants to obtain geologic maps and investigate underground water flows.
- Crowdfunding for making detailed research and regenerative design programmes.
- Signing contracts with the owner of the neighbouring land with water springs: use of water in exchange for teaching and practical help with regenerating the owner's land.
- Creating water retention spaces.
- Pumping the necessary water to the village by means of arête pumps; infiltrating the rest.
- Searching for new water springs by careful mapping and drilling.
- Creating large underground water reservoirs/cisterns (with help of Mayan techniques) to hold water for use in the dry season.
- Using government-provided plastic containers for individual roof collection of rainwater.
- Obtaining help from the Assembly, the educational programmes and the community COOP to foster the safe and appropriate use of collected water and its fair and efficient distribution.
Gradually introducing composting toilets, urine-faeces separation and fertiliser production.

Making constructed wetlands for greywater treatment and using the output for irrigation.

**Food supply**

- Analysing the nutritional value of the current Chichihuistan diet and making proposals for a more balanced one based on local agricultural (permacultural) potentials, all with the help of volunteers from the University in San Cristobal.
- Combining the existing pilot of bio-intensive cultivation with crop rotation to expand the current milpa.
- Composting organic waste to improve soil quality and reduce pest problems.
- Strengthening the ejido (common land use) tradition to achieve more efficient production and reserve space for permacultural experiments.
- Applying the lessons learned from the experiments to the overall land.
- Building on the ejido practice to communally tend to the pieces of land further away from the village, which can produce tropical fruits important for diet and sales.
- Cultivating mushrooms for own use and sales.

**Food surplus (see also “From the idea to the business plan” in the Economic Dimension Proposals)**

- Processing food to obtain additional value (e.g. dried mushrooms, healthy cola and lemonade, medicinal plants).
- Serving the needs of the bioregional clients, especially tourists, lower middle class and students, with the potential of some international sales (online).
- Increasing the quality of food and goods offered by local shops.

**Buildings and construction**

- Experimenting with borax treatment of palm leaves for roof cover.
- Experimenting with Zacate de Cuba for roof cover (also with borax treatment).
- Planning for regenerative plantations for bamboo and the appropriate roof-cover plants.
- Introducing the “Smoked Roof House” pilot project for new houses, named for introducing chimneys and using smoke for roof impregnation.
- Using the pilot project to get the government’s support for sustainable and natural construction instead of subsidies in the form of concrete blocks.
- UNHABITAT-inspired transition of domestic domains for households.

**Energy supply**

- Learning about choosing appropriate energy-consuming attitudes, technologies and lifestyles through community work (see the social dimension) and education (see the worldview dimension).
- Implementing conscious energy-use in all projects (see the economic dimension).
- Low-tech geothermal harvesting for heating/cooling.
- Introducing solar cooking by means of a Schaeffler Mirror.
- Producing electricity by micro-hydro harvesting of springwater on its way to the village.
- Producing electricity by solar panels (for water pumps mainly).
- Assembling and using small domestic windmills for household electricity production.
- Selling additional windmills in the bioregion.
8.2 The Next Steps

This case study is primarily a resource for the transition work that is anticipated to start in Chichihuistan’s Core Group and include the entire community. As a resource, it is not just a list of proposals, but a coherent body of proposals that is rooted as much as possible in the current situation and various contexts including the global one. However, the case study would benefit from a more extensive and systematic research into the current situation “on the ground” related to all four dimensions of sustainability. If such research will be made, this study could serve as the basis for an updated, more realistic “case study 2.0”.

The proposals in this case study are ordered and interrelated, with synergies identified within the dimensions and across them. This will help the community to make a comprehensive and realistic timeline according to its needs, wishes and priorities. Such a timeline will also be a work in progress, a document that both informs and follows the planning and implementation of transition processes.

As the community works on defining its vision, priorities and action plans, the transition process should diverge from the proposals in this case study whenever that is beneficial. However, the case study will remain as a reference to come back to whenever actual conditions require it and whenever things will need to be put into perspective. In addition to that, the case study may be a useful basis for writing projects and for communicating with partners and sponsors.

The authors of this case study wish all the best to the community of Chichihuistan in its transition.
9 BIBLIOGRAPHY

ECONOMIC

The Essential Guide to Doing Transition; [www.transitionnetwork.org](http://www.transitionnetwork.org)

REconomy (A Transition Network Initiative)

[www.reconomy.org/inspiring-enterprises/](http://www.reconomy.org/inspiring-enterprises/)
[www.reconomy.org/inspiring-enterprises/investment-show-me-the-money/](http://www.reconomy.org/inspiring-enterprises/investment-show-me-the-money/)

Community Supported Agriculture (CSA) [www.communitysupportedagriculture.org.uk](http://www.communitysupportedagriculture.org.uk)

The Power to Change; funding and support for community enterprises [http://www.thepowertochange.org.uk](http://www.thepowertochange.org.uk)

Business Balls; free business related resources including financial planning templates

The School for Social Entrepreneurs; [www.the-sse.org/](http://www.the-sse.org/)

Mind Tools; will allow you to create a stakeholder analysis; [www.mindtools.com](http://www.mindtools.com)

Community Shares; if you are intending to raise money from your community; [www.communityshares.org.uk](http://www.communityshares.org.uk)

Co-operatives, Select a structure tool; [www.uk.coop/selectastructure](http://www.uk.coop/selectastructure)

SOCIAL

GEDS 2016/2017 Course e-books by Gaia Education

Dragon Dreaming International: [http://www.dragondreaming.org](http://www.dragondreaming.org)


World Game; [http://www.internationalfuturesforum.com/world-game](http://www.internationalfuturesforum.com/world-game)

Compass, 2017; Compass for community project development and organization. [www.gemeinschaftsberatung.de](http://www.gemeinschaftsberatung.de)

CLIPS – Community Learning Incubator Programme for Sustainability; [http://clips.geneurope.org/](http://clips.geneurope.org/)

SIRCle – Social Innovation for Resilient Communities; [http://www.sircle-project.eu/](http://www.sircle-project.eu/)


WIR Process according to Scott Peck; http://wir-prozess.com/english.html


ZEGG Forum; http://www.zegg-forum.org/en/

Theory U; (Presencing Institute); https://www.presencing.com/theoryu

Sociocracy (3.0); http://sociocracy30.org/


Pacific Integral- Generating Transformative Change (GTC); http://www.pacificintegral.com/new/homepages/generating-transformative-change-gtc/

Joyality Program for Personal and Planetary Transformation; http://www.joyality.org/


Cultural Creatives – The (R )evolution; https://vimeopro.com/kulturaliskreativok/cultural-creatives

WORLDVIEW

GEDS 2016/2017 Course e-books by Gaia Education


Principles of Spiritual Activism - Satyana Institute: http://satyana.org/principles_new.html

Life’s Principles - Biomimicry 3.8: https://biomimicry.net/the-buzz/resources/designlens-lifes-principles/


Dragon Dreaming International: http://www.dragondreaming.org

The Oasis Game: http://institutoelos.org/en/jogo-oasis/

Happy Planet Index: http://happyplanetindex.org

Laudato si: http://w2.vatican.va/content/francesco/en/encyclicals/documents/papa-francesco_20150524_enciclica Laudato-si.html

Global Catholic Climate Movement: https://catholicclimatemovement.global

Evangelical Climate Initiative: http://www.christiansandclimate.org

Evangelical Environmental Network: http://www.creationcare.org
Exploring a Sense of Place: http://www.exploringsenseofplace.org

Story of Place: https://regenesisgroup.com/services/story-of-place

Co-Counselling: http://co-counselling.info/en

**ECOLOGICAL**

Maps and topography: google maps: https://www.google.com/

Public Maps Mexico: https://mexico.pueblosamerica.com/mapas/san-isidro-chichihuistan


Permaculture: https://permacultureprinciples.com/

Vetiver Grass: https://de.wikipedia.org/wiki/Vetiver

Milpa: http://www.ithaka-journal.net/mit-milpa-und-pflanzenkohle-zu-humus
https://en.wikipedia.org/wiki/Milpa

Ejido: https://en.wikipedia.org/wiki/Ejido

Zacate de Cuba: http://pastosyforrajes.com/pasto-de-corte-cuba-22/

Micro hydro: https://en.wikipedia.org/wiki/Micro_hydro

Wind mills: https://theselfsufficientliving.com/free-diy-or-homemade-wind-turbine-plans-and-designs/

Scheffler Mirror: http://www.solare-bruecke.org/index.php/de/die-scheffler-reflektoren
https://www.tamera.org/index.php?id=371


Check dams: https://en.wikipedia.org/wiki/Check_dam

GEDS 2016/2017 Course e-books by Gaia Education, especially all modules of the GEDS Ecologic Dimension.
Appendix A
24 Pages

Current Situation Description
San Isidro Chichihuistan /Municipio de Teopisca /Chiapas/Mexico
Geographical, cultural and general context
1. General information which influences the whole Project Design

1.1 Mexico (Estados Unidos Mexicanos)

- Federation of 31 states with 120 million inhabitants and 2 million square kilometres (14th largest country in the world)
- The 11th most populous country in the world, the most populous Spanish-speaking country in the world and the 2nd most populous country in Latin America
- 37 different indigenous cultures
- From 1521 Spanish colonial territory (New Spain), decreasing the indigenous population from 5-10 pre-colonial million to 1.5 million in the 17th century, by diseases, killing and various forms of oppression
- From 1821 independent Mexico (after War of Independence) with economic instability, many political changes, wars and dictatorship
- Revolution in 1910 leading to the 1917 Constitution and the current political system (federal presidential constitutional republic), but with a lot of typical young-democracy turmoil
- Oil industry (US and Anglo-Dutch) nationalized in 1929 (Pemex founded) – very important for the economic development of Mexico, and making Mexico the sixth largest oil producer in the world
- Joining NAFTA in 1994, which along with other neoliberal reforms sparked the Zapatista armed rebellion that has become today a non-violent movement to create living alternatives to neoliberalism and globalization.
- Upper-middle income country (11th in the world by purchasing power parity GDP), newly industrialized, member of NAFTA, OECD, UN, WTO, G8+5, G20, Uniting for Consensus, Pacific Alliance, emerging global power
- Electronics are 30% of Mexico’s exports and Mexico produces the most cars of any North American nation, both contributing to US having a large trade deficit with Mexico
- 46% of people live in extreme or moderate poverty, the bottom 10% in the income hierarchy dispose of 1.36% of Mexico’s resources, while the top 10% with 36%
- Daily minimum wages in 2017 are set at 80 Mexican pesos (4.5USD), but this is not enforced in many areas

![Figure 1: Location Map Mexico](image)
In 2012 Mexico passed a comprehensive climate change bill (1st in the developing world) with a goal to generate 35% of energy from clean sources by 2024, and to cut emissions by 50% by 2050 from the 2000 level; in 2016 a new goal was set: 50% of electricity generated from renewable sources by 2025.

- Eighth most visited country in the world (35 million international arrivals in 2016)
- Mexico has the 23rd highest income from tourism in the world, with most tourists coming from the US and Canada, followed by Europe and Asia
- 83% Roman Catholic, 10% other Christian
- Recognized regional languages: Spanish and 68 native language groups (no official language at the federal level)
- All of the indices of social development for the indigenous population are considerably lower than the national average (infant mortality, literacy, workforce participation, salary, access to health care, quality of housing etc. Serious abuses of power have been reported in security operations in the southern part of the country and in indigenous communities, and the judicial system is slow and problematic, resulting in low confidence people have towards the police or the judicial systems and few crimes actually reported
- Gender inequalities are perpetuated by social structures, cultural expectations, domestic violence and the 16th highest rate of femicide in the world.

1.2 Chiapas (a Federal State of Mexico)
- General information: 5,200,000 inhabitants on 74,415 km sq. with diverse climate zone but mostly humid tropical
- until the year 1921 Chiapas was part of Guatemala and annexed to Mexico
- Contains 30% of Mexican freshwater supplies
- Very bio-diverse (50,000 species of plants and animals)
- Very forested compared to Mexican average, with a wide variety of usable tree species
- The territory covers the sea level to the highest mountain of Tzontewitz 3,284 m

![Figure 2: The Chiapas Region](image-url)
• Economy: Declared poor in comparison with Mexican average and famous for indigenous handcrafts, especially textile, amber, clay, instruments and wood
• Rising ecotourism industry
• Energy production: 55% of Mexican hydro power production and big producer of gas and oil which contributes to rainforest cutting
• Capital: Tuxtla Gutierrez with 500,000 inhabitants, 28km from San Cristobal de las Casas;
• The next big city: 3-4 million tourists visit the city and surroundings. Mostly Mexican lower middle-class living there, and 8 different Universities are hosted.
• 60% of the population is indigenous
• 65% are Catholics and 35% of other religions

1.3. Bioregion

Facts to consider:
• Humid temperate subtropical climate with wet and dry seasons, but the difference in the mountainous landscape opens a spectrum of cold to hot humid climate.
• Forests of pine and oak, with some cypress and other species
• Very bio-diverse, but less and less so because of over-farming, deforestation and mining
• Rich in limestone, sandstone and clay
• Freshwater mostly underground (Karst geology); levels falling due to deforestation, mining and the resulting soil erosion
• The bioregion is located south of the Tropic of Cancer, which means that the sun shines from the North at summer middays, the temperatures are fairly constant year round and vary solely as a function of elevation
• Biggest city is San Cristobal de las Casas (200.000 inhabitants) – 28 km from Chichihuistan by road
  o similar environmental issues as Chichihuistan
  o young and growing population with poor economic development status
  o active market for local agricultural and handicraft products
  o 78% Catholic
  o 48% of people above the age of 15 have finished some sort of education after primary school (more than in Chichihuistan)
  o similar percentages of connection to the power grid and running water as in Chichihuistan (92%)
  o high percentage of indigenous population, mostly Tzotzil and Tzeltal – unlike in Chichihuistan, these populations speak their indigenous languages and are proud of their heritage
• Chichihuistan: 2,040m above the sea level; 320 inhabitants, growing organically 50 years ago around a hacienda (a huge property owned by a feudal landowner, legacy of the Spanish King 500 years ago) called cacique.
Figure 3: The Bioregion

- Location: 40 km from City San Cristobal de la Casas (200,000 inhabitants). 20km from Teopisca municipal capi (37000 inhabitants) and 5km unsurfaced road to Betania with 2800 inhabitants with infrastructure like secondary school, health centre, municipal departments.
- The community includes houses, individual gardens, common farming areas, common forests etc. as shown in the maps in the ecological dimension.

2. General Introduction to the history of San Isidro Chichihuistan

**Brief history:** 50 years ago two couples came to this place, getting away from very bad living conditions in order to find work. Even though the working conditions, they found in Chichihuistan were very bad and mostly slave like they decided to stay and serve the cacique (local landowner and mostly despot). Punishment and Non-education was systematized and exists until this day, hence people manifest this with low self-esteem. Also the systematized oppression of indigenous people in all states of Mexico, has a long history of 500 years of violent oppression and a huge extermination of indigenous, so called “Conquista”, finally lead to the birth of the Zapatista movement in Chiapas and 25 years ago to a military uprising and manifestation of indigenous dignity and reclamation of indigenous rights.

During this time a new land reform was established and the cacique properties were legally divided and given to the indigenous collectives. They decided how to divide and govern their land and gave little land plots to everyone. Another part was declared common land to grow the milpa (traditional form to cultivate their corn, beans and other local vegetables together). All this land is called EJIDO. At the very beginning of the uprising also persons of Chichihuistan were involved but rapidly they left the movement and became more government dependent.

**Governance:** All the existing Ejidos up until today have a special form of legally recognised government and governance system “Usos y Costumbres” where the national government does not have the legal right to interfere. Every person has a voice and vote which is manifested and expressed in assemblies to make common decisions.
Particularities of Chichihuistan: In the chaos of the land reform, the cacique took advantage and gave private land plots to the most "loyal of his servants". This lead to the situation that some of the inhabitants of Chichihuistan are part of the Ejido and at the same time private landowners. A remarkable difference between them emerged. Meanwhile the Ejidatarios (people which are part of the ejido) had to decide everything collectively, while the private owners manage their land with absolute freedom without the consultation of the assembly. This is a significant issue of contention and conflict within the community. Some people started to split their properties and sold little pieces to other people who were looking for land and a place to stay.

In the assembly of Chichihuistan women are not invited, young men are not empowered to raise their voice until they marry.

Ecological consequences: This leads to uncontrolled tree cutting and uncontrolled land selling. Some land in the top of the mountain were sold and so an illegal sand mine started to work there. The water now doesn’t have the possibility to sink in as before and the springs are drying out. A formerly humid land that gave water in abundance to 17 other local communities (about 3700 persons) is drying out and water security doesn't exist anymore.

3. Information which influences the design of Ecological Dimension

3.1 Climate in Chichihuistan and surroundings

Weather

San Isidro Chichihuistán is situated 2,041 m above sea level and is located in the edge of two climate zones (in-between a colder and a temperate climate zone) between San Cristobal de las Casas and Teopisca.

Figure 4: View of Chichihuistan village and surrounds

The temperature average in the rainy season is about 25°C/15°C (day/night) and in the dry winter season 20°C/6°C (day/night). These low temperatures are just in December and January. After that period the night temperature increases to be comfortable at night.

Conclusion: we don’t have to consider heating systems needed if houses which are constructed with criteria of good insulation and sun catchment.
The wind speed is low in the diagrams is lower than 6mph which indicates, that there is not enough wind to generate energy. Personal on site observation differs from this official numbers and consider possible to generate wind energy with little self-made windmills.

Sun Hours and UV Index gives us facts that photovoltaic energy can be generated.

The rainfall average of 1,500mm which the most amount is falling in the climax of the rainy season indicates, that there is enough water for creating a sustainable life, with water in the private houses and crop irrigation available.
Figure 5: Climate Information for Chichihuistan
### 3.2. Chichihuistan Territory

![Chichihuistan Territory](image)

Chichihuistan Territory
Yellow lines: Ejido, milpa cultivation, with wastewater treatment space inside the area on the top left
Green line: Ejido forest
The Ejido has a surface area of 386 ha.
Red line: private domains
For the private domains we don’t have concrete numbers. Together they cover more or less 100ha.
Yellow pins: springs
Grey areas: sand mines
Ejido totally: 320ha
Private land owners: more or less 100ha (there is no official information)

**Figure 6: Chichihuistan Territory**

### 3.3 Sand mines

Five sand mines are situated within the territory of Chichihuistan. Four of the five sand mines have been abandoned in September 2017 after a long struggle with the owners and legal entities. Mine nr. 1 and 2 are influencing the springs (manantial 1-5) and the mines nr. 3 and 4 are influencing the spring El Palmar.

The mines are situated on the top of hills and situated within the watershed of Chichihuistan. Most probably they are causing the lack of water in the springs because due to the open surface of the earth water is not infiltrating anymore into the ground but causing surface run-off and soil erosion.
Legality and the Sand Mines: Principally in this region everybody has the right do everything on his land what he wants to do. In this case uncontrolled mining is an example for disturbing the ecological balance in the environment. The need to find a way to remember the Earth Rights to the institutions and private personas will be a way to protect nature. Until governance and private owners give no shelter for nature and just see financial benefits, it will be difficult to stop the work in other mines in area, or even propose a professional exploitation, which is considers at a minimum regeneration at the end of the mine life.

3.4 Carelessness about the environment

Deforestation and sand mining and expansion of use of agricultural land are the main pressures of Chichihuistan (and wider area). These are the primary means and possibilities for subsistence and for making a living. However, unsustainable practices prevailed in Chichihuistan causing many negative effects aside from dependence and disempowerment of communities (a socio-political issue), but soil erosion, water and soil pollution, habitat and biodiversity loss, change in climate conditions, loss of soil fertility, diminishing income streams, dependence, downward poverty cycles, idle and wasted human “resources”.

Figure 7: Sand Mines
4. Water

4.1 Disturbed natural water supply

Five years ago the first time that the main spring (nr.1) dried out. The water supply for nearly 3,700 people includes the neighbouring villages mostly depends on the flow of this spring. Also springs nrs 2 and 3, dried out.

4.2 Water on private property and the social consequences

All the springs, except El Palmar are located on private properties, owned by foreign persons from different cultures and strong personalities. Even the assembly having an agreement with all the owners to access the springs and look after them in certain occasions, people feel very uncomfortable doing this, because they have to pass through the private land to go there, to ask every time for permission and also don’t have influence over the land use and the surroundings of the wetland. A history of overgrazing and compacting the wetland with cattle are indicators of an inappropriate land use that needs correction and the openness to listen to the assembly.

El Palmar (which is located in Ejido, have still a little flow of water that is restricted especially for drinking water. There is definitely no water available for irrigated crop and vegetable areas in the months from February to June. Now in this moment all the water that is needed by the people who live in the upper part (into the green marked territory) depend on the water pump which pumps the water from spring nr 4 to a concrete deposit up there (marked white).

4.3 Water distribution network

The springs are holy places and are not touched directly to get water. At about 20m distance from them little swales were made where the water is collected. From there it is distributed to different private plots by flexible hoses. Sometimes the distance is several kilometres and 17 water hoses go also to the neighbouring community. The provincial government is supporting this and unfortunately, without logic criteria, some promises are given by the local assembly for private users without time limit to use this system.
The water is very calcareous (i.e. hard water with high concentrations of calcium and magnesium and bicarbonate) and as a consequence the hoses are regularly clogged.

4.4 Wastewater system

A central wastewater system of Chichihuistan doesn't exist. The wastewater tube ends in a blind hole where it is absorbed and going unfiltered into the aquifers. Even though they are using water toilets (see Figure 1-6).

5. Chichihuistan Village

![Figure 9: Plan View of Chichihuistan Village](image)

The Chichihuistan village includes the Ejido and the private properties and is spread over an area of approximately 420 ha. Within this area one finds several shared public buildings and the private domains of the inhabitants of Chichihuistan. 320 people are spread over these domains.

5.1 Infrastructure

The conservation forest area, the vegetable gardens, the pasture and the milpa area were designed in 1995 when the land was declared "Ejido". In common effort they open up the nature to build dirt roads, then 15 years ago in common effort they brought electricity from Betania. In this time they also started to fit the drinking water tubes and bring it to the houses. Then they started to make black water drainage but unfortunately until now without treatment. This year they decided that every family has to be connected to this system. Just three households have compost toilets and are not connected to the black water system. Up to date there is no connection to internet, neither to telephone but sometimes mobile connection exists.
5.2 The most important public buildings
5.3. Private Domains

A typical lot of a private family land has about 1000-2000m² and up to 10 people live there.
The houses are normally surrounded by a little courtyard where everything social happens. It’s like a living room. Here they join together when visits comes, the children play and they make special events there. Also the chickens, pigs and other little animals can be found there.

Figure 12: Private Buildings: A Typical Courtyard

5.4. Private Houses

5.4.1 Construction

The people in Chichihuiten live mostly in very simple houses, with a floor space of 4x6m. The buildings have only one floor and the walls are made of wooden planks or concrete. The roofs are constructed with zinc planks 3.05m x 0.80m. Windows are not existing right now, just in a few houses. They are integrated without consideration of the Bioclimatic conditions of the sun, wind etc. For the next year the government will give new cement and tin roofed houses to the young people. Some people are willing to test compost toilets.

Roof and ventilation: The roofs are a problem to build a house because they are the most expensive part of the building. If they are built with palm leaves normally they do it in the kitchen, because there is a fireplace inside, but without windows and chimney. In consequence the smoke spreads through the whole house and searches its way out through any gap it can find. For the people living inside this is a very unhealthy condition. The only advantage of the smoke is that it keeps insects away that would eat the wood and especially the roof covering made of leaves and wood.
The project INLA KESH (a sustainable Biotope in Chichihuistan) is an example how to use local and bioregional building materials. The houses are built with cob and straw and handmade roofing shingles.

Three years ago an architect made a climate study of the buildings of Inla Kesh. The result was a “passive house” in Chichihuistan needs three or four days (in the whole winter season) of heating in the afternoon to have a standard average room temperature of 20°C. The passive clay houses are built as examples for Chichihuistan and completely fulfil the expectations of a comfortable climate in the houses. Also considered are cross ventilation is used in the multi-use auditorium in Inla Kesh and a Trombe wall to the south face of the building.

All these houses in general got good critics from the natives. It’s not strange for them to see bricks and houses made out of clay, because this was the original form of their cultural building heritage. But today they aligned with the worldview that wellbeing is linked to concrete houses.

Figure 13: Private Buildings: A Typical Site Layout

Figure 14: Inla Kesh: Typical House
5.5 Ecological footprint

Mostly all of the materials are grown on the land, just the government plans to bring development to the rural areas in form of concrete houses, which is increasing the footprint enormously. The next year the government will give about 20 houses (6x4m) to young families.

5.6 Waste

The organic ‘waste’ of the family houses is given directly to the animals; pigs and chickens. Packages of junk food are thrown away everywhere, also PET of Coca Cola bottles. Once in a month the women gather to pick up all the garbage and burn it. Other industrial garbage nearly does not exist because they don’t have the income to consume. Now they started an initiative to join the PET bottles near the school, and sell them to recycling places to have an extra income to cover the costs of the school.

5.7 Energy

Of the family houses in Chichihuistan 92% are connected to the official electricity service. So they normally run maybe one light spot during the night, and to run the television that the government in a national campaign gave to more than a million people as a present.

Further 84% of them have water in tubes, 70% with water toilets, 56% have radio, 50% have television, 0% refrigerators, 0% washing machine, 2% have a car, 0% a computer, 0% a fixed telephone, 30% have a cell phone, 0% have internet.

People in Chichihuistan use fire to cook and need to collect fire wood from nearby forests.

5.8 The problems of a Small Carbon footprint

This project is particular in that we are not designing a new community, but instead considering how an existing community, with all its challenges and peculiarities, and a will of its own, could turn into a more resilient, healthy and regenerative community.

The estimated energy consumption for the community is around 50kWh/year per person and 0.5 tons/year of firewood per person.
At the moment, the estimated Carbon footprint for the average member of the Chichihuan community is 1.7 metric tons of CO2e per year, which is below the worldwide target (2 metric tons), well below the world average (4 metric tons), and even more so below the Mexican average (4.24 metric tons).

Half of the average Chichihuistan footprint is caused by using buses and, to a smaller extent, taxis and cars. The other half is secondary footprint (through consumption of goods and services), electricity consumption and firewood for cooking.

Such a commendable footprint, unfortunately in this case has a lot to do with poverty: There is little money to afford long usage of lights and TV, let alone buy cars, machinery and appliances or cover their running costs.

Poverty, however, has many problematic consequences, one of which is the tendency of the community members to cut down trees in order to sell timber, leading to deforestation, soil depletion, water scarcity, food insecurity, community tensions etc. Many of these consequences directly or indirectly contribute to carbon pollution. If the economic activity of the community is counted, the Carbon footprint is therefore bigger, and it reveals unsustainable practices that could escalate if the vicious cycle of poverty and environmental degradation is not broken.

5.9. Food

Self-sufficiency

Chichihuistan’s food and fibre production is currently largely based on subsistence farming both on individually owned and communally owned land with main crops including corn and beans. The production is largely driven by manual labour and use of some livestock (e.g. cattle and chicken), artificial fertilizer and pesticides are used normally in the crop zone, even if they used largely organic production methods were applied before the agrichemicals were promoted by the government. The yield is maintained at a level that is sufficient for reasonable degree of self-sufficiency with some production for local markets (e.g. eggs and some vegetables and fruits). Due to the low value of products produced on local market, lack of accessible markets and distribution infrastructure and logistics, as well as lack of production of valuable and needed products, the incentives for increasing yields or changing production systems is low, also compounded by a lack of knowledge and education in agriculture, creating a vicious cycle of trapping people in current conditions of relative poverty and their main focus on making ends meet.

The people in Chichihuistan mainly live from their milpa (corn, pumpkin, beans) and what they grow on their private land like herbs and eventually some animals like chicken, pigs, and cattle. Extras like sugar, salt, soap, medicine and Coca Cola they have to buy. They have a very one-sided diet.

Soil Quality: The larvae of some insects start to damage the whole cultivation of plants in summer and cultivating these plants is quite difficult. On the other hand the existence of these larvae is said they come to build up a good soil again after having suffered erosion.

Compost: The people in Chichihuistan burn usually any residues of plants and are not using them for making compost. There is clearly the potential of increasing the quality of the ground by composting and figuring out more examples for healthy plant combinations. This could even prevent the development of the larvae.
Bio Intensive Farming: A pilot plot of bio-intensive cultivation is already running. There is a potential for growing wheat, buckwheat and linseed, but people have to get used to these plants. Anyway the first thing is to find alternative local plants that potentially could grow there.

6. Information which influences the design of the Worldview Dimension

6.1. The spiritual practice and everyday life

The community is religious. It is divided into Evangelical Christians and Catholics (78%), with tension between the two groups. In general, religion plays a big role in the identity of the people.

There are also some rituals with indigenous roots, offering flowers, salt and purification with aromatic smoke to the water springs. Indeed, the very name “Chichihuistan” is related to water (“breast full of water”). Another example is “Día de los Muertos”, where they spend the night together in the cemetery, making a picnic upon the graves and tell stories of the dead persons.

Despite the religious practice, people in Chichihuistan seem to be somewhat disconnected from their identity as participants in the healthy life of the planet, including the natural resources they are surrounded with. This is manifested in the destruction of their environment, but also in the health problems of the villagers.

The damage to the environment is not always caused by doing whatever is necessary to survive (economically). Since spiritual connection is not lived, and education is not focused on environmental issues, spilling out fertilizers or other agro-chemicals is not understood as the cause for the poison getting into the water, entering the body and causing illness. Similarly, this process is not understood when healthy animals drink the poisoned water and people who eat animals get sick because of the high toxicity.

Education and deep spiritual connection with ecology can potentially contribute too many small changes in everyday life, co-creating big positive cumulative effects. At the same time, small changes in everyday practices may create the chance to understand that the actions we take today will have a huge impact both in the near future and for the coming generations.

Most importantly, this can be the beginning of long-term thinking and planning in the community of Chichihuistan. This is a necessary next step for the community which already has the Ejido structure and the Assembly, but it will require stronger participation of all villagers (currently not the case, especially for women and young men), and a better organised village assembly.

6.2. Collaborations and partnerships

The situation is similar in many villages in the bioregion (the Los Altos of Chiapas), as well as in the entire state of Chiapas and the rest of southern Mexico. Even though some villages are, in terms of worldview, very close to the Zapatistas and some others in much more contact with their indigenous heritage, the social, economic and ecological challenges are very similar.

This creates the need to collaborate despite the differences and to share good practices. Furthermore, the varied perspectives may actually contribute to the resilience of the bioregion by requiring and providing solutions to challenges that can be adopted in different communities. This may lead to the emergence of a new regenerative bioregional culture which incorporates various spiritual practices without tensions, which is precisely the kind of development that is needed across the globe in order to tackle the environmental, social and economic crises, and even wars.
Here is a list of institutions, organisations, movements and projects that could be collaborators or partners in this process (Figure 16)

- local school
- local, state and federal governments
- Pastoral de la Tierra
- Inla Kesh
- Catholic Church
- Global Catholic Climate Movement
- Evangelical Church
- Evangelical Climate Initiative
- Evangelical Environmental Network
- Gaia Education
- Transition Network
- Permaculture Networks
- Organic Producers Organisations
- Regeneration International
- various ecovillages and Global Ecovillage Network
- various volunteer networks
- Warriors without Weapons
- The Spirit in Education Movement
- Zapatistas Movement
- Chulixim Mexico
- Sarvodaya
- Pachamama Alliance
- World Social Forum
- Fair Trade
- Greenpeace and Friends of the Earth
- United Nations
- cultural creatives globally
6.3. Bridges needed

Communities were spiritually really strong since there was a syncretism between pre-Hispanic and catholic religions. This was their strength. Furthermore, the catholic church in the south of Mexico especially in Chiapas, which is at least 60% indigenous, made these communities stronger through a movement called “Religions Theology” which proposed “base ecclesiastic unities” which meant a stronger social organization, that accepted indigenous traditional authorities as well as their pre-Hispanic rituals. So, in this historical context the appearance of evangelical groups, especially in the south of Mexico, in the last century, is seen as the strategy to divide and weaken the communities into groups which confront themselves. It was a custom, for example, that every person of the community was responsible for a certain task in the church structure, in which Evangelic people wouldn’t participate anymore, nor in any other festivity, they even built up their own churches. In daily life, the differences are felt because there is a restriction for evangelic to dance anyhow, they do not participate in any
ceremony for the earth, water or any element, and they impose their messes to the rest of the community with loud speakers. Another big issue is the impulse of Catholics for fighting peacefully for indigenous rights and constitutional recognition of indigenous nation’s autonomy. In this political movement evangelical authorities do not agree. It is obvious the Evangelical emphasis on individual economic affluence and prosperity, which is one of the main arguments to convince others to step into their evangelic group. This is why in Mexico the evangelic are considered more as a sect, and not part of the official Lutheran protestant Church.

There are many differences between the two Christian groups in Chichihuistan in terms of the encouraged worldviews and behaviours. The Evangelical group puts more emphasis on individual affluence and economic prosperity whereas the Catholic group puts more emphasis on humbleness and bioregional connection. The Evangelical group puts more emphasis on restraint and timidity in social interactions whereas the Catholic group puts more emphasis on fun, music and dance. The Evangelical group puts more emphasis on rational, analytical and utilitarian approaches whereas the Catholic group puts more emphasis on the emotional contact with nature, ancestors and the afterlife.

However, these are all generalizations about two groups. It is important to remember that each individual holds a particular combination of attitudes towards the above mentioned topics. It is equally important to remember that there are many more similarities between individuals in Chichihuistan than there are differences, regardless of the group they identify with. The economic conditions of all people in Chichihuistan are very similar. The daily lives, the problems, the bioclimatic conditions they face, the houses, the diet, the origins, the life stories, the level of education, the participation in the Assembly, the language, the faith in one God, the very human nature - these are but some of the things that are similar for all members of the community. Drawing strength from the similarities while respecting and valuing the differences within the community is a necessary step in learning to build bridges with the rest of the bioregion and the world.

7. Information which influences the design of the Social Dimension

7.1. Community Life

7.2. Governance and Decision Making

People in Chichihuistan make decisions in assemblies, where in theory every voice is listened. But observation shows, that the most charismatic members have more influence and a lot of voices are hardly heard. Mostly women are absent, and young men don't show up. The estimation is that today the assembly is too big to go on with the form of decision making they are used to.

Important figures on Governance: The main position has the Comisariado who is elected for 3 years and is the ultimate instance to decide in difficult situations. Here the Zapatist motto “Ordering Obeying” is very present.

There are other positions like a judge, 4 different policemen, 4 persons in charge for the drinking water, an educational pillar, a team which is responsible to maintain and improve the streets and bring new subsidy projects from the municipal government (like housing, improving the electricity), secretaries and treasurers for each section. They join when something has to be resolved.
The whole assembly of all men in Chichihuistan meets once every 2 months, if there are not special issues to be resolved then they meet more often.

Decision making and writing demands to instance which needs forms filled out, needs a long time, because there is an existing high level of illiteracy or lack of education to write and read well.

7.3. Reasons for Social Conflicts

- Private landowners, Landowners who are at the same time Ejidatarios vs just
- Catholics (who mostly are Ejidatarios) vs evangelists (who mostly are properties)
- Old vs young
- Local people vs newcomers in the last 8 years
- Lack of drinking water in the part of the upper part of the village vs drinking water still available from a spring up of them with gravity

7.4. Education

There is one Kindergarten, where the youngest are attended by persons who have to complete a program as volunteers in education, so that they can achieve some substitute for their studies. There is a primary school with two older, conservative teachers who are teaching here for the last 30 years and having very questionable results, maybe of their own bad education. When children leave school, they hardly read, nearly don't manage to write in a way that other people are able to read their statements. The teachers still have the opinion that punishment helps in education. They were the teachers of the fathers, mothers, grandfathers and the whole village, and are fully respected by them.

7.5. Family Situation

Normally people get married at an age between 16 and 20, and also become parents in this age. They are all together in a big family system, until they get money support from the municipal government to build their own houses made from blocks of concrete and laminated zinc roofs. Sometimes it costs a lot of time to obtain the subsidy and they start to construct their wooden houses.

Mostly 95% is indigenous but a little numbers identified or proud of their roots. Just 5% know an indigenous language (just the older people). All speak Spanish.

7.6. Well Being and Health Care

No official governmental healthcare institution has a constant presence in Chichihuistan neither in the conjunction of the 17 indigenous communities that are part of the area. Three months ago Inla Kesh collaborated to bring a health care unit of engaged professionals “Sanando Heridas” doctors and nurses to provide free health care to sick people in indigenous Communities. They come once a month, and now the population can go to this official point of attendance in the Assembly hall.

7.7 SWOT analysis of Chichihuistan

<table>
<thead>
<tr>
<th>Strengths of the Chichihuistan Community:</th>
<th>Weakness of the Community of Chichihuistan:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deep knowledge of the area</td>
<td>Some dominant figures (older men who</td>
</tr>
</tbody>
</table>
Deep family boundaries
Long experience to stand and survive in difficult situations
Mostly 90% of basic food independence
A lot of young people wanting to learn
Clear idea that we all depend on nature
Common ground
Assembly decision making (even dysfunctional)
They knowledge to be able to live and create economic relationships in the Bioregion
Big solidarity facing the outside
Living the circle of life very naturally (birth, childhood, adulthood, maturation and death)

Deep family boundaries
Long experience to stand and survive in difficult situations
Mostly 90% of basic food independence
A lot of young people wanting to learn
Clear idea that we all depend on nature
Common ground
Assembly decision making (even dysfunctional)
They knowledge to be able to live and create economic relationships in the Bioregion
Big solidarity facing the outside
Living the circle of life very naturally (birth, childhood, adulthood, maturation and death)

Opportunities:
- The big desire of some young men to change the circumstances
- The social, environmental, financial, educational, situation is reaching a peak so that it can become an opportunity for change
- The huge amount of women who want to create economy
- The awakening of people that education is needed to step out of the circle of poorness and scarcity

Threats:
- Globalization of thinking and consumption
- Social challenges
- Loss of Biodiversity
- Incorporation of new life models
- Inla Kesh, Tierra Corazón, Tierra Plena (present projects in Chichihuistan with Interbeing approach)
- Foreign strong women living there, different gender examples and role models
- Climate change
- Water challenge
- Erosion, Sandbanks
- Uncontrolled forest management

8. Information which influences the design of Economic Dimension

8.1. Wealth / Finances
- Most of the older men (from the age of 35 upwards just work in the milpa and sometimes in the constructions where they earn about 10 dollars /day) and at the end of the session they sell their surplus where they earn very little money
- Younger men don’t see a future in this kind of work: first because it’s very hard, second of the low incomes. So fathers of families send their sons realize low-income jobs to
bring a little money to the family system. In some cases young men from 14-16 years are responsible to earn money to sustain the whole family systems.

- Women mostly don't work for money but they care for the household, care about their children, wash everything by hand. When they don't have water they have to fetch the water, they go to search and bring the firewood (every day more limited). Their only regular income they have at all, is from the government which gives about 50 dollars/month per every child which goes to school (Projecto Prospera). Therefore, the more children you have the more money you have during the time when they go to school (from 4-12 years of age normally). Some women start to sew and make local ancient style textile handcrafts which are cheaply sold to middleman (1.5 dollar/ 2 day job)
- Often at the end of the weeks they don’t have money anymore and they lend small amounts of maybe 50 dollars, with an interest of 10-20%. Some started to work with communal banking.

8.2. Shops

There are a few family shops in Chichihuistan. There they sell sugar, salt, soap, junk food, chips, and cola. Some people buy each day a three-litter bottle of cola that costs about 30 pesos and is equal to 1/3 or 1/4 of the daily average income. It’s not Coca Cola but a cheaper sort called Big Cola.

The people in Chichihuistan and Chiapas drink Cola because it is symbol of wealth. Cola is highly consumed in Chichihuistan and its surroundings. It is the highest consume of Coca Cola in the world with the consequence to be the area of the highest diabetes rates in the world.

A change in conception what is real wealth and what is healthy, is urgently needed to step out of the poverty and beliefs of scarcity.

8.3. Trading

Trading generally is informal and happens spontaneously. Now and then the people sell even only one egg to Inla Kesh who sells it further on the market in San Cristobal.

8.4. History of money in the Mayan tradition

The tribe of Chamulas (Chichihuistans ancestors) have been a big tribe of intelligent commercially oriented people and knew that you had to have something to be able to change it directly into goods or into a local currency (Cacao Beans, Salt, Shells). The ancient Mayans converted everything of their surpluses immediately in gold. In Oaxaca (a federal state of Mexico) still it is handled that way. The farmers on the other hand, have the tendency to convert their money directly in plots of land, cattle, plants and tools. Local people don't really trusted in something with artificial value. Globalisation is on the way to change this attitudes and convert to ephemeral goods without long term vision.

When we shift from survival strategies to long term regenerative and sustainable economies, which are rooted in the recognition of the biological richness of the region, it will help to empower the whole economic system and bring individual and collective wellbeing beyond the community.
9. CONCLUSION

All in all the described destruction of environmental conditions, the lost connection with nature, the lack of profound economic knowledge, education and capability of the people, their lack of self-confidence, religious and political conflicts, their struggling with a corrupted society in Mexico and many more issues sum up to a missing future perspective for the people in Chichihuistan.

In these conditions to focus on surviving just the next day, week or month doesn’t have the power to create a vision and better life circumstances. Which are the base to give to the people the freedom and energy to reflect deeper on the reasons for their circumstances and transform them into opportunities. With a stronger economic foundation the springboard can be created that would allow the people in Chichihuistan to rebalance also their lives in the realms of the Social, Worldview and Ecologic Dimension.