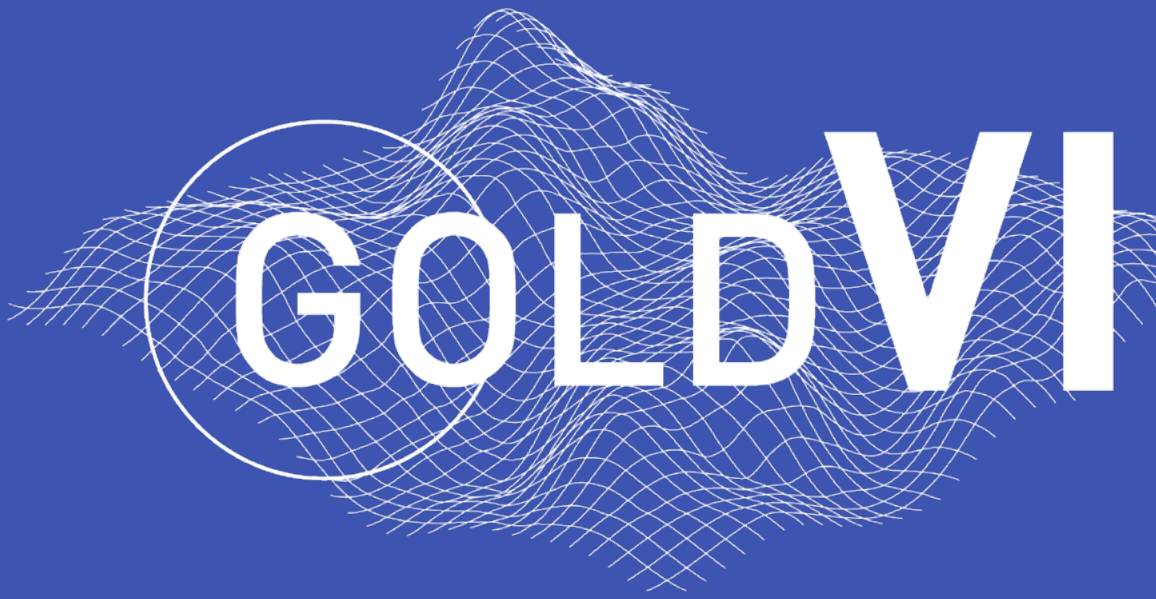

Case-Based Contribution to Chapter 7: Renaturing

GOLD VI Report on Pathways to urban and territorial equality

Energy Transition of Chefchaouen city

In partnership with:

UCLG United Cities and Local Governments

KNOW Knowledge in Action for Urban Equality

Energy Transition of Chefchaouen city

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CITIES/COUNTRIES IT COVERS
Chefchaouen (Morocco)

CHAPTER
7: Renaturing

SUMMARY

The city of Chefchaouen (Morocco) expects to experience increased rainfall variability and degradation of natural resources in the coming years because of climate change and demographic pressures. Its dense urban layout also makes the city particularly vulnerable to the Urban Island effect. Thus, since 2013, the municipality has endeavored to integrate energy management systematically and transversally into territorial planning. Interventions have been, among others, a reference inventory of greenhouse gas emissions from 2016, including municipal energy accounting, the modernization of public lighting, the use of solar energy and bioclimatic architecture principles, the establishment of a travel plan for the municipality's administration, and sensibilization through an Energy Info Center. Through policies based on the promotion of local economic development and decentralized cooperation, the municipality of Chefchaouen attempts to balance development, urbanization, and the preservation of its landscapes and its environment, to ensure the welfare and wellbeing of its citizens.

Khamlichi, Hajar, and Karim Elgendy. 'Energy Transition of Chefchaouen city'. *GOLD VI Pathways to Equality Cases Repository:* Renaturing (2022). United Cities and Local Governments.

At present, the city of **Chefchaouen** (Morocco) enjoys moderate climate conditions compared to the rest of Morocco. However, this advantage is expected to diminish due to climate change, with increasing rainfall variability, requiring increased flexibility and resilience of natural and human systems.

In addition, the region of Chefchaouen suffers from extensive degradation of natural resources, which includes deforestation, over-exploitation of water resources, soil erosion, and wildfires. The levels of such degradation continue to increase driven by ongoing demographic pressures.

Furthermore, the city of Chefchaouen, and particularly its old medina, has a high urban density which creates an Urban Heat Island effect and makes it more vulnerable to heat stress caused by climate change. Other non-urban sectors of the region also lack sufficient adaptive capacity to respond to climate change stimuli. These include agriculture which lacks adaptive capacity due to its low crop diversity. In addition, the agricultural and the industrial sector both lack adaptive capacity due to their limited organization.

Since 2013, the Municipality of Chefchaouen has endeavored to **integrate energy management systematically and transversally into territorial planning**, in particular the Communal Development Plan (PCD) 2010-2016.

Following the development of its new Communal Action Plan (CAP) 2017-2023, the municipality carried out from the end of 2016 a **Reference Inventory of Greenhouse Gas Emissions**. The total GHG emissions in the territory of Chefchaouen was estimated to be 84,161 teqCO2. Emissions under the municipality's direct control (including assets and direct emissions from solid waste landfill) represent 27,420 teqCO (32.6%), while those related to other energy consumption in its territory account for 56,741 teqCO2 (67.4%).

Installing solar panels on buildings Communale in Chefchaouen
Source: Chefchaouen Municipality

Informed by those results, the municipality was able to quantify the climate objectives of its Climate Action Plan. The city has been implementing municipal energy accounting since 2016 to monitor its own energy consumption.

This Greenhouse Gas Inventory steered the municipality towards renewable energy generation and energy efficiency as the primary areas of intervention. The **modernization of public lighting** was one of these areas of intervention. Based on an exhaustive diagnosis of the network, the municipality sought to equip priority areas of the city with energy efficient lighting, and to introduce a digitalized management system, based on an energy performance contract.

Other areas of intervention include the heating of its municipal swimming pool using solar energy. Chefchaouen is also one of the first municipalities to comply with the new Thermal Regulation for Construction in Morocco (RTCM) on its new buildings in addition to applying the principles of bioclimatic architecture to buildings under renovation (e.g. the Mediterranean Diet museum), while training local architects in the use of such principles.

In terms of mobility, the municipality also made efforts to reduce the energy footprint of its staff in order to provide an example for how it can transform towards active mobility. A survey of the movements of municipal staff was carried out and an **Administration Travel Plan (PDA)** was developed which proposed strengthening the municipal fleet with six electric-assisted bicycles. Electric shuttles will soon be used to transport the many visitors from the outskirts to their destinations in the medina.

In 2014, an Energy Information Point was established in Chefchaouen. The facility, which was later renamed **Energy Info Center (EIC)** under the SUDEP-EU project, is the first of its kind in Morocco. The center aims to guide, raise awareness and inform the general public - especially households and professionals - on all matters relating to energy management and sustainable energy solutions.

As the primary point of contact for citizens, civil society, and professionals in the construction and tourism sectors, it plays an important role in facilitating an inclusive access to renewable energy and energy efficiency solutions. It also leads the municipality's energy projects and initiatives, and coordinates their communication and public awareness activities to improve community participation, inclusivity, and shared ownership of these projects.

To further improve this inclusivity the center itself is run by two local Civil Society Organizations (CSOs), which coordinate the activities of the center, ensuring that the community needs and expectations are communicated.

While the center targets a wide range of audiences, a special **focus is placed on the youth** whose importance cannot be overestimated in the region. Young audiences are more willing to explore more sustainable solutions, and to contribute to spreading and adopting the municipal initiatives.

In addition, this approach can lead to **job creation opportunities** thanks to the growing renewable energy and energy efficiency markets and the training and upscaling enabled through the center's activities. The expansion of the low carbon services can also create further job opportunities in the manufacturing, transportation, building construction and operations sectors, as well as indirect jobs in the supply chain, and others induced by increased incomes and spending in the local economy.

In 2015, the municipality of Chefchaouen established a **participatory council on energy, climate, environment and sustainable development**. The council, which comprises elected officials as well as public, private and associative partners, participates in decision-making processes related to energy and climate actions while guaranteeing financial transparency. Three commissions have also been created that focus on the future Climate-Energy plan, coordinating awareness efforts and training, and ensuring project follow-ups.

Council members actively participate in strategic meetings, give their opinion and follow the development projects, however, their exact roles and the governance structure of their board could benefit from further refinement.

A strong commitment by the president of the board is a key factor of success. It encouraged a bottom-up approach for policy and project proposals coming from the different stakeholders including the administrative staff and collaborators.

The **Chefchaouen Municipal Working Group for Development and Cooperation (CMWGDC)** constitutes the fundamental consultation body between the municipality (elected officials and technicians) and other development actors (decentralized state services, development agencies, associations and the private sector). The aim is to facilitate consultation between actors when identifying cooperation projects, and the support of the municipality during the establishment of its Municipality Development Programme. The CMWGDC has an open structure and also flexible operating mechanisms. It therefore reinforces the decentralization impact driven by the environmental policy of the city.

Close monitoring by the municipality's board of the progress of the various projects creates opportunities for feedback and for sharing ideas and suggestions. On the other hand, the municipality is moving towards establishing criteria and standards for sustainable energy in its purchasing policy and service offering.

Regular **training programs** for municipal officials and other local actors and civil society representatives has also been provided on a range of topics related to sustainability, and were funded through a number cooperation partnerships that the city has been developing for the last ten years. The training programs helped to bridge the knowledge gap and support the energy transition policy of Chefchaouen. Training topics included energy data management, creating an inventory for GHG Emissions, electric mobility, RTCM, building energy efficiency, eco-driving, waste management, solar energy production installation, and energy communication.

Another important way in which the municipality was involved in **decentralized cooperation** beyond the programs mentioned, was its long established focus on **networking as a means for exchanging experiences between counterparts**. Its membership in numerous local, national and international networks and the partnerships it has forged with other cities are all part of this approach. The municipality has joined several networks such as the Network of Moroccan Cities for Energy Control, for Waste Management, and the Old Medinas. It is a founding member and president of the Moroccan Association for Eco-Cities, (AMEV) and currently participates in the MedCities network, as well as the networks Medivercités, UCLG, Luci, and ICLEI to name a few. It established several twinning arrangements on issues related to waste management, sustainable mobility and energy management, which enabled it to carry out innovative and exemplary projects (e.g. eco-center inherited from Malaga).

Training of women from cooperatives in the rural area in sustainable techniques for harvesting and developing AMP
Source: Chefchaouen Municipality

Finally, decentralized cooperation in Chefchaouen over the last decade has been characterized by the convergence and collaboration of actors, in particular Spanish NGOs which operate in the region on a large number of projects in collaboration with local associations as well as the municipality.

The city of Chefchaouen enjoys a unique mix of ecological diversity and a distinct cultural heritage, upon which tourism is based. The city's old medina is the emblem of a rich local history and culture, enhanced by many agricultural and artisanal knowledge and products. The city of Chefchaouen is endowed with many historical and cultural sites, and is famous for its authenticity, the beauty of its landscapes and its good products. In 2010, Chefchaouen was recognized as a Community Emblematic of the Mediterranean Diet, an intangible heritage recognized by UNESCO.

Alongside its traditional way of life, the city's culture is experiencing a real boom thanks to the dynamism of its civil society, which plays a key role in setting the cultural agenda throughout the year. This dynamic helps **transform the creative and cultural industries into a development sector more geared towards tourism**. Chefchaouen has undergone significant development in the tourism sector, with its attention turned towards tourists seeking well-being, and those visiting the countryside in search of local natural and cultural heritages. Chefchaouen became the primary destination of tourists flowing into the province, gradually opening up to rural tourism.

From an agricultural point of view, Chefchaouen and its surroundings constitute a rural region where the local population practices family farming, based on agro-sylvo-pastoral techniques. This shapes a particular and typical landscape between Mediterranean forests and a fabric of small cultivated plots. The region also has a rich, diversified gastronomy that is largely reliant on local products.

However, rural to urban migration was observed, which has caused the abandonment of local farming knowledge linked to ancestral production systems. It also led to increased urbanization in the city, sometimes in a disorderly manner. This urbanization in turn, is changing the natural and agricultural peri-urban landscape of the city, and raises questions about the future of its green belt which is suffering from many environmental problems often linked to the erosion and degradation of natural resources.

As a result, the municipality of Chefchaouen attempts to balance development, urbanization, and the preservation of its landscapes and its environment, to ensure the welfare and well being of its citizens. Its policies are based on the **promotion of local economic development** where the principles of sustainability are oriented towards economic growth to ensure social cohesion, but also towards the preservation and enhancement of indigenous natural and cultural heritages.

One of the main takeaway points from Chefhcaouen's case study is the centrality of its enhanced participatory approach in setting its environment and energy policies.

The city's decentralized cooperation is also an important policy lever for the city, opening opportunities for the different actors to contribute and engage in existing programmes, and allowing stakeholders to build on for sustainability policies and equitable implementation.

The urban equity aspect of its energy policy is also noteworthy. In addition to being aimed at strengthening access to affordable renewable energy and energy efficiency, the city's energy policy was also geared towards creating opportunities for the youth to increase their employability.

RENATURING

This paper has been produced as a Case-Based Contribution to the sixth Global Report on Local Democracy and Decentralization (GOLD VI): the flagship publication of the organized constituency of local and regional governments represented in United Cities and Local Governments. The GOLD VI report has been produced in partnership with the Development Planning Unit (University College London), through the programme Knowledge in Action for Urban Equality (KNOW). GOLD VI focuses on how local and regional governments can address the local manifestations of growing inequalities and contribute to create "Pathways to urban and territorial equality". The GOLD VI report has been produced through a large-scale international co-production process, bringing together over a hundred representatives of local and regional governments, academics and civil society organizations. This paper is an outcome of this process and is part of the *Pathways to Equality Cases Repository*, which collects the over 60 Case-Based Contributions produced as part of the GOLD VI report.

In particular, the present paper has contributed to Chapter 7 on "Renaturing", which focuses on the governance and planning of nature-based solutions, with specific emphasis on decoupling economic development and resource use, the transition to net zero carbon systems, risk reduction and urban resilience. The chapter explores how local and regional governments can promote approaches that advance these goals, placing the needs and priorities of structurally discriminated social groups at the core of their actions, and contribute to urban and territorial equality.

Supported by:

Funded by the European Union

Diputació Barcelona

Sweden Sverige

GCRF Global Challenges Research Fund

UKRI UK Research and Innovation

This publication was produced with the financial support of the European Union. Its contents are the sole responsibility of UCLG and UCL and do not necessarily reflect the views of the European Union.

This document was produced with the financial support of the Barcelona Provincial Council. Its contents are the sole responsibility of UCLG and UCL and do not necessarily reflect the views of the Barcelona Provincial Council.

This document has been financed by the Swedish International Development Cooperation Agency, Sida. Sida does not necessarily share the views expressed in this material. Responsibility for its content rests entirely with the authors.

This document was produced by UCLG and the "Knowledge in Action for Urban Equality" (KNOW) programme. KNOW is funded by UKRI through the Global Challenges Research Fund GROW Call, and led by The Bartlett Development Planning Unit, UCL. Grant Ref: ES/P011225/1