

Case Study 4. Using Wood for Energy in Peasant Farms in Santander, Colombia - by Juan Pablo Soler, CENSAT Agua Viva and Fundaexpresión

This case study concerns the introduction of energy efficient wood-burning cookstoves in the provinces of Soto (municipalities of Lebrija and Matanza) and García Rovira (municipalities of Concepción and Cerrito) in the department of Santander, Colombia. Garcia Rovira is located in a region of high-mountain, in the 'Almorzadero' Moorland ('Paramo'); the village of Santa Cruz de la Colina (municipality of Matanza) is located near farmland and community natural forest reserves that are guarded by the locals (also known as an ICCA¹). The introduction of these cookstoves reduces respiratory disease, advances energy sovereignty and alleviates pressure on local forests.



Cookstoves before. Photo courtesy: J.P. Soler

National economic context

Colombia is a country with three major mountain ranges and vast wilderness areas. It has invested heavily in the oil and electricity sectors, but providing energy to people living in remote areas is expensive. Because the supply of energy is treated as a profit-making business by governments and companies, rather than as a social function, rural provision has so far been neglected, marginalising rural life over the centuries.

However, rural communities, primarily made up of peasants, 'barequeros', fisherfolk, indigenous and black communities, are meeting their energy needs by using wood, just as they did before the oil era. There are strong cultural and ancestral practices relating to the use of firewood for purposes including cooking food, heating spaces, sugarcane production, and brick making. But the availability of wood varies, both between regions and over time. Some communities must travel great distances to get firewood, and as more wood is extracted for various purposes so it becomes scarcer.

In this light, the United Nations World Health Organization and other organisations have gradually been demonising this cultural practice, arguing that it impacts the health of infants and adults by causing air pollution, and that collecting fuelwood from forests causes deforestation. However, this discourse, rather than addressing the situation of communities and their need for fuel, supports World Bank guidelines urging governments and businesses to increase the supply of modern energy services such as natural gas and electricity in rural areas. This approach puts oil companies' interests above the real needs of communities,



Cookstove after. Photo courtesy: J.P. Soler

¹ A close association is often found between a specific indigenous people or local community and a specific territory, area or body of natural resources. When such an association is combined with effective local governance and conservation of nature, we speak of 'ICCAs' which stands for Indigenous Peoples' and Community Conserved Territories and Areas. Further info through <http://www.iccaconsortium.org/>

and centralises control of the energy sector, including through energy privatisation.

We believe that the use of wood as a fuel is not itself a problem. Rather, its use may be enhanced, thereby strengthening its cultural role, by practices that make the activity more sustainable, such as the development of small-scale dendro-energy crops, the community management of forests, and the use of appropriate technologies such as efficient cookstoves that also minimise pollution.

In this sense, a number of communities have sought to improve their self-sufficiency without compromising their cultural traditions. They have been gradually implementing newer and more energy efficient methods, which lead to greater fuel economy, better air quality inside homes, and greater added value for produce and handicrafts from rural family farms. These include, for example, the production of corn and squash cakes in Santander, and the dyeing of virgin wool in the town of Cerrito, García Rovira province. These community initiatives are very different from initiatives proposed by the government, because the economic model promoted by the government is focused on national economic and industrial development rather than the peasant sector and rural life.

National political context

In recent years, the government has expressed its intention to improve the situation in the countryside by implementing energy programmes based on 'non-conventional' energy sources. To this end it has created the Program on the Rational Use of Energy and Other Forms of Non-conventional Energy (PROURE in Spanish). Based on an action plan and vision stretching to 2025 PROURE establishes that the national government needs to invest more than four million dollars to boost the sector, and suggests priority areas of action including the promotion of non-conventional energy sources through education, advocacy, capacity building, consumer protection, and the management and monitoring of goals.² However, it appears that even these non-conventional energy resources are still viewed from the perspective of integrating them into the dominant national electricity market.³

PROURE was developed following the introduction of Law 697 of 2001 on rational and efficient energy use, and its regulatory decree, 3683 of 2003. These also set the guidelines and functions for public and private actors, granting greater responsibility to the Ministry of Mines and Energy⁴ (UPME) in terms of promoting, organising, supervising, designing, and ensuring the development of PROURE.⁵

The Colombian government has also established a series of policy documents with guidelines regarding topics of importance for the country through the National Council on Economic and Social Policy, the CONPES. CONPES no. 3700 from 2011, for instance, defines guidelines for an institutional strategy for addressing climate change.

In addition there is a Colombian Low Carbon Development Strategy (CLCDS), which is a medium and long-term development programme involving the Ministry of Environment and

² Ministerio de Minas y Energía República de Colombia. 2012. Programa de uso racional y eficiente de energía y fuentes no convencionales. PROURE. Informe Final. PLAN DE ACCIÓN 2010-2015. Informe Final.

³ https://unfccc.int/files/bodies/awg/application/pdf/3_colombia-revised.pdf

⁴ www.upme.gov.co

⁵ http://www.minminas.gov.co/documents/10180/558752/Proure_English.pdf/cca18348-a31b-4b08-905c-aeaa3cc92149

Sustainable Development (MADS), the Department of National Planning (DNP), and sectoral ministries of Colombia. This is aimed at promoting Colombia's economic and social development in ways that reduce greenhouse gas emissions and enhance environmental performance without impeding efficiency and competitiveness in the global market place.

This same document refers to Reduced Emissions from Deforestation and Forest Degradation (REDD+) proposed under the UNFCCC. The Colombian government has created an Interdisciplinary Working Group on REDD+, which will coordinate sectoral actions and REDD+-related decisions.⁶ It will be supported by advisory groups that will guide their technical, social, environmental, regional and economic decisions. This is part of a national REDD+ strategy that is included in the National Development Plan 2010-2014 and directed by the Ministry of Environment. Actions have been prepared through the Forest Carbon Partnership Facility (FCPF), UN REDD+, international cooperation, the National Institution for Hydrology, Meteorology and Environmental Studies (IDEAM), and some NGOs (Fund for Environmental Action and Childhood, Natural Patrimony Fund, WWF, and ONF Andina).⁷

The estimated budget for formulation and implementation of Colombia's Readiness Preparation Proposal (RPP)⁸ for REDD+ is US\$18.5 million from a variety of sources including the World Bank's Forest Carbon Partnership Facility (FCPF) and others.

The importance of firewood in Colombia

In Colombia a significant proportion of the total energy used from primary energy sources⁹ comes from biomass (firewood and bagasse). According to data provided by UPME, about 31% of the total is generated in this way, with most of the remaining energy being generated from natural gas (51.3%), mineral coal (12.2%), and petroleum (2.1%). With respect to household consumption of secondary sources,¹⁰ wood is the second most important energy resource (at 28.1%) after electricity (30.4%). It is followed by natural gas (21.2%), liquefied petroleum gas (11.5%), charcoal (5.2%), mineral coal (1.2%), biodiesel (1.1,%) and gasoline (0.9%). This is despite the best efforts of the central government and businesses to replace firewood with natural gas in both urban and rural Colombia.

Efficient cookstoves and their benefits

In the province of Garcia Rovira, the communities have succeeded in stopping the government and companies exploiting the region's anthracite coal for over twenty years. Mining in this region would endanger the vital Páramo wetlands ecosystem, disrupting the water supply.

The communities have taken a different approach. On their own initiative, they have launched economic alternatives that allow them to stay in their territory and retain their peasant identity. Since the nineties they have been implementing agroecological

⁶ Ministerio de Ambiente y Desarrollo Sostenible. 2012. Construcción colectiva de la Estrategia Nacional REDD+. Bogotá

⁷ Ibid

⁸ Ministerio de ambiente y desarrollo sostenible. 2012. Preparación de la Estrategia Nacional de Reducción de Emisiones por Deforestación y Degradación Forestal - REDD+

⁹ Those that do not require transformation (i.e. coal, gas, etc.)

¹⁰ Those energy sources that require processes for transformation (i.e. electricity from hydropower or power plants, nuclear energy, etc.).

processes on their farms and plots, as well as developing education and training in crafts based on straw and wool, and baking cakes for local markets. They decided to give added value to their products by building efficient wood-burning cookstoves. This allows them to increase the overall energy efficiency of their products, reducing their consumption of wood and pressure on local forests. At the same time it improves air quality inside their homes, and generally increases the profitability of local productive processes.

Similarly, families who are part of the Municipal Association of Rural Women of Lebrija-AMMUCALE and the Collective of Peasant and Community Reserves in Santander have introduced efficient cookstoves to save wood and increase energy efficiency while baking squash cakes and slaughtering creole chicken. This is helping to save firewood, an increasingly scarce resource in that region.

Main environmental, cultural, and health impacts of introducing efficient cookstoves

Energy efficient wood-burning cookstoves allow a significant saving in the amount of wood being used, which directly reduces emissions of carbon monoxide (a highly toxic pollutant) and carbon dioxide (a major greenhouse gas). This in turn leads to a reduction in respiratory and eye diseases caused by indoor smoke. A key feature of these ovens includes the installation of a furnace vent allowing the use of the heat from combustion fumes, keeping temperatures stable at around 250°C for baking cakes.

This experience is contributing to the ongoing process of defending territories and cultures that was started decades ago with a focus on food sovereignty. This is now being complemented by new energy sovereignty practices. Energy sovereignty helps communities enjoy their independence and self-sufficiency in terms of fuel for cooking, while decreasing pressure on local ecosystems and the water cycle. At the same time 'mingas' are held, bringing people together to share knowledge on the one hand, and strengthen ties between local families on the other. Thus, the substantial funds that are used for complex and uncertain schemes like REDD+ could be used for efficient cookstoves and other locally-based solutions.

The following organisations are all participating in these processes: Censat Agua Viva,¹¹ Fundaexpresión,¹² the Municipal Association of Rural Women of Lebrija-Ammucale, the Collective of Community and Rural Reserves in Santander, the Manufacturers Association of Agroecology-Agrovida, the Association of Women Farmers and Artisan Cerrito-Asomuarce and the Colombian Movement in Defense of Territories Affected by Dams 'Rios Vivos'.¹³



¹¹ energiaindependiente.org/

¹² fundaexpresion@gmail.com

¹³ <https://www.youtube.com/watch?v=b1-4tyUKYFk>

Left: Cookstove before; Right: Cookstove after. Photo courtesy: J.P. Soler

