

LOW-BUDGET, HIGH EMPOWERMENT SUSTAINABLE DEVELOPMENT MODEL

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Abstract

The purpose of this presentation is to share the Grupo Fenix model of empowering a community to create its own path towards achieving the Sustainable Development Goals in a way that is independent of grants and encourages the respectful use of available resources.

Totogalpa is an indigenous community in northern Nicaragua that has suffered from natural disasters, political strife and long term overexploitation of natural resources. In the midst of a drought, extreme under- and unemployment, and other discouraging conditions, Grupo Fenix supported group of women working with their solar cookers fomenting a movement to create a better future by surrounding themselves with the renewable human resource of national and international students. Students and professionals from around the world come to the community in order to learn and participate in a mutual exchange of knowledge with the solar women, as well as other community members. Not only does this provide a source of income, but community members both increase their own knowledge and are simultaneously empowered to teach others the skills they themselves possess. Consequently, women who previously spent the vast majority of their time in the home are now constructing solar cookers, teaching others, and running their own business: a solar restaurant.

They have deliberately and consciously developed a strong foundation that is stable, self-regenerating and contagious to the point that others in the area have followed suit. Other self-organized groups include a group of local youth, many of them sons and daughters of the original solar women, who innovate with bicycle technology and promote environmental stewardship, a workshop for handcrafting photovoltaic (PV) panels and installing PV systems, an ecological agriculture organization, a high school youth group that innovates with organic farming, and a small bicycle repair and renting business. The process has been slow, natural biological and adaptive to the times and opportunities that are available.

The environment is inclusive; ideas are encouraged and cooperation fostered. Visitors are struck by the continuous investment by the population and the eagerness of young people and citizens to initiate and participate in changes for a sustainable future. Local residents have perceived their own impact in bettering the quality of life of their community, and they feel responsible for its future.

This model can be viable in a multitude of settings with a variety of technologies and natural resources. Other communities can learn to adjust the process to their situation and expand upon it.

Key Words: Empowerment, Low Budget Development, Fostering Innovation, Indigenous, Self-regenerating

Introduction. Poverty alleviation is still an ongoing global challenge. It is important to find sustainable solutions that do not rely on the classic project financing model. This paper presents the history and model of a village that with the accompaniment of a national university program has combined its own needs and resources with the needs and resources of universities and young professionals throughout the world to create a path out of poverty that is mutually beneficial. Believing that the phenomenon can be replicated in different situations, the author will present this history as a case study from which methodology can be deduced for possible reproduction.

The Grupo Fenix Model

Grupo Fenix is a nonprofit association currently based in Totogalpa, a rural municipality in northern Nicaraguan. It is proud to be an organization, run by the community, for the community. The majority of the staff and membership live in and has grown up in the cities of Sabana Grande and Santo Domingo.

VISION

We are a sustainable organization working with appropriate and innovative technologies to improve the quality of life of families and rural communities of the region in the areas of health, education, employment, environment and gender equity.

MISSION

Grupo Fenix's mission is to enable community development and empowerment by facilitating technological and cultural exchanges.

We also offer continuing education courses for Nicaraguan and international audiences thus generating employment and growth opportunities for the local community.

The organization is made up of a steering committee, a central administrative group and four community interest groups which operate both independently and in synergy as businesses and community development organizations.



Steering Committee

The steering committee is made up of two representatives from each of the member groups and exists as the directive to the Central administration and the voice of the member groups in larger organizational decisions.

Central Administration

The operative arm of the Organization, Central Management is the coordinating force for joining the member groups together to carry out the two parts of the organizational mission delivering the hands-on sustainability courses and implementing sustainable community development.

Member Groups



- The largest of the member groups is the cooperative of the Solar Women of Totopalpa, COOMUSOT (Cooperativa Multisectorial Mujeres Solares de Totopalpa). Membership consists of nineteen women and one man. They operate a restaurant which they built themselves. They not only build the solar cookers, and efficient firewood stoves and ovens they use for cooking, they also teach others to make these clean cooking devices. And finally, the Solar Women offer

the most basic service of Grupo Fenix's enterprise in the community, the homestays, where visitors live in the heart of a welcoming family.

- Second largest is a group dedicated to Agro Ecological farming and reforestation creating an alternative model to the practices which have given the region one of the highest rates of soil devastation in the country The PSAE (Promotores Solares AgroEcológicos) have six men and thirteen women members. They offer workshops in making organic fertilizers and pesticides, reforestation and related land care and food security themes.
- A group of five young women and eight young men from the Youth Pedaling for the Future, JPHF (Jovenes Pedaleando Hacia el Futuro). They are characterized by the innovative work in designing bicycle powered devices such as blenders, generators, and pumps, but they also give informed and lively community tours and organize sports and cultural events in the community.
- The oldest and smallest group is the photovoltaic shop. It began with two of the persons affected by land mines, and was located in the house of one of them. The photovoltaic workshop is currently known as ACESOL and consists of two male members. ACESOL hand constructs solar panels from one-half to 60 watts in power and teaches others this

unique craft. They also install, maintain and repair systems as well as train others in the same.

Courses and Volunteer Exchanges

Appropriate Technology – Collaborative Research Model “the Knowledge Cycle.” Through this model, Grupo Fenix has been able to improve the quality of life in the community by developing improved, affordable solutions to basic needs such as cooking, and sanitation. The volunteer exchange program is the strategic motor for Grupo Fenix community development.

While offering hands-on experience to a broad variety of students and professionals from all over the world, Grupo Fenix has been able to develop its staff and community groups in their technical and organizational skills. Many volunteers have received awards and recognition for their work.



Traditional knowledge and learnings acquired in Grupo Fenix’s Knowledge Cycle are transformed into courses offered to University and High School groups. This is the unifying business of Grupo Fenix as the Central Administration creates an integrated technical and cultural experience by combining the offerings of its member groups. Courses are Grupo Fenix’s primary source of income as well as a source of pride and satisfaction for team members groups and the community.



For example, because the Solar Center was built using adobe construction, a natural building specialist volunteered to teach a course in the community, returning annually for five years. From this, a skilled natural building group has formed that now teaches courses to groups who come to the community. They also are invited to other communities to teach and develop the community with innovations for cooking and sanitation. This group has added to the international knowledge bank with improved techniques for earthen floors, dry latrines, and design for a unique play space for community children.

Evolution of Grupo Fenix

The beginning of Grupo Fenix was a ‘solar energy club’ at Nicaragua’s National Engineering University in Managua, guided by professor Susan Kinne. The club became interested in renewable energy, as a response to their desire to be useful in rebuilding their country after the

revolutionary war. They saw solar energy as a new and better option for getting electricity to the more than 50% of the country's population that was still without energy. The club called themselves 'Grupo Fenix,' as in 'rising from the ashes.'

Among their early experiences, the club was contracted to repair small solar systems that had previously been installed by a well-meaning U.S. group. They learned hard lessons about the difficulty of sustainable up-keep of these systems.

Grupo Fenix reflected on the problems with well-meaning, first world driven projects. Energy and enthusiasm for the projects often soon became a drain or even burden on the communities once the benefactors were gone. In the worst cases, members of the community felt abandoned or that they themselves had somehow failed. This was a formative time when the commitment to community driven, community-empowering projects became a primary part of the mission of Grupo Fenix.

A grant to create jobs in solar energy for people affected by landmines in Nicaragua's US-backed Contra war, brought Grupo Fenix to Northern Nicaragua. But it was the experience of living with the people and seeing how the odds were so radically stacked against them that caused Grupo Fenix not to abandon the people whose hopes had been raised by the project.

Grupo Fenix had no experts in development on its staff. They were mostly young Nicaraguan engineers with no job experience. They were naive, but creative. They weren't stuck on selling panels and cookers to help communities make a living. They developed a market niche to sell a) the service of teaching knowledge and practical skills in solar energy and b) the experience of living in the community and participating in a sustainable development movement.

When three visiting physics grad students were captivated by the vision of Sabana Grande community members bringing their community forward through renewable energy technology, they offered a grant to build a workshop building in which to construct the solar cookers and conduct courses. Grupo Fenix saw that it could offer to North Americans who wanted to become involved, an introductory hands on course with the land mine victims teaching. People from the 'prematurely developed' world could pay and learn, and local people could continue to be empowered by teaching others to make solar panels and cookers. Groups of North Americans began coming to do courses that would be half classroom learning and half hands-on, building solar cookers and installing PV systems on various community buildings. Course takers would live with the families during their stay, providing a powerful cultural experience for the North Americans and income for the families.

Grupo Fenix recognized that a model for cultural adoption of renewable energy technologies, the creation of a Solar Culture in rural communities, should be its goal. Thus the university-based club transformed into a community-based movement. An administrative group and Nicaraguan engineers were still based at the university, but the majority of the activity was happening in the communities. A group of the engineers also spun off and created a for-profit solar energy firm called Suni Solar which is very successful today.



Finding that there was a layer of the population in the US who were drawn by the idea that they might be able to bring more sustainable energy to a place in the process of development, Grupo Fenix's Program Director began accepting volunteers. She fed and housed the first volunteers, but soon saw that would have its limits. To stay with neighborhood families, they would have to be charged for their expenses, but to charge them, Grupo Fenix had to offer them something. By then, the "land mine victims" were operating quite confidently with the making of solar panels and groups of women were interested in making solar cookers. . With an infrastructure of families that could house people, volunteers could work and stay in the community. North American academics found that working with local 'makers' was helpful and exciting and fostered innovation.

So, this Engineering University program in the second poorest country in the Americas began with the goal of creating useful jobs for its students in the post-war situation of extreme un- and under-employment. They discovered an ever-growing audience of universities and young professionals in the developed world who wished to become a part of the solution. Their response was to offer courses and volunteering opportunities to this audience. As a result, local community members build their skills by working alongside the students and professionals and also strengthen their self-esteem by teaching the courses. Other innovative people from around the world have seen this environment as attractive to participate in, They have come to offer courses which introduce new technologies to the community and as village people have learned more and seen their own innovative efforts take fruit, more able groups have been created. Many of the results of this creativity were fun but didn't have high impact, but inevitably amongst all the experiments rose certain technologies that offered improvements that really met basic needs of the community. A notable example is the efficient firewood stove. It was developed over many years and many volunteers but with a core group of community women who persisted and retained the accumulating improvements. Slowly a new culture was being created, a culture that felt the confidence to build new technologies that solved problems of everyday life. Now groups are teaching other community groups to make efficient firewood stoves and ovens and have been responsible for the building of over two hundred efficient wood stoves. Also, among the many experiments, another that has the potential to impact the community is the dry composting latrine.

A recent development, that indicates success in the level of empowerment, is the Community's decision to rely no longer on the university group for their administration. Leadership and management now come from a local steering committee made up of members from the main organized community groups and a local-based central administration.

Another recent development is separating the volunteers into groups depending on skill levels. The Central Administration in the community assists community members in recognizing what

skills they need at their current stage, and Grupo Fenix can customize the experience by recruiting volunteers specifically to improve the development of the small businesses and groups. There will be a higher-cost, more course like volunteer experience for those who come primarily to get hands on experience.

One of the long-term strategies of Grupo Fenix remains to reduce the drain of talent and energy out of the community by creating local opportunities.

Dangers and Lessons Learned

In any organization, especially something as grassroots and organic as this one, there is a need to find good administrators to work by the side of the visionaries, especially once the idea begins to grow. Grupo Fenix has been continually challenged to find the right personalities and skill sets for office support and coordinator positions in this type of organization.

In the first rural projects, outreach to find local people interested in participating attracted several strong local leaders in different communities. Grupo Fenix was able to successfully get initiatives off the ground because of the existing connections and leadership skills of these people. As work continued to sustain these efforts, it became noticeable that in one of the communities the primary person in the group was hoarding the influence and benefits in an opportunistic way, not allowing a wider base of people to be empowered.

Responding to this situation was formative for the values of the organization. Grupo Fenix clarified for itself that its mission was not simply spreading technology and that ultimately community empowerment was a fundamental goal of its work. It would go forward with one community, in a "slow development" model where change may take more time, but comes with ownership and provides a model for other communities.

Solid lines of communication are necessary to maintain efficient use of organizational resources. This is especially critical when community leaders are responsible for volunteer's needs and meeting the expectations of visiting groups. To maintain the strong relationships with various Universities and NGOs, the local team needs to operate smoothly, and have clear roles and responsibilities of its staff. They need to know exactly who is responsible for each task and how they will advise when that task is needed. Communication lines are the tool to achieve this.

Defining the responsibilities and being clear about expectations of various team members are critical and not always a simple task when the goal is empowerment and organizational capacity building. For instance, an inexperienced, but committed leader can be a slower but more solid investment in community empowerment, an important ingredient for Sustainable development.

Grupo Fenix has created an environment that attracts young idealists who are searching for ways to make a difference in the world. An unintended consequence which comes as part of the energy, enthusiasm and idealism of youth is that they want to "reinvent the world". Grupo Fenix is constantly challenged with balancing between "nurturing the ideas" and the good intentions of

course participants and student researchers who come to work with Grupo Fenix and teaching them to adapt to the real and very different world that is rural Nicaragua.

Some volunteers, who desire to make a quick impact, found it difficult to understand that change in our model comes from a slow and deliberate local cultural shift, with the main focus of empowering members of the community. However, this is critical to the sustainability of our model. Very small changes can take generations to come in a community this close to subsistence. First world visitors have difficulty comprehending the risk associated with change for families in that environment. A volunteer brings a rich outside perspective, but may have not be able represent the full range of the organizations values. While partnerships with businesses may be financially and resource beneficial to non-profits, a resource from the business world is sometimes unaware of the importance of our sustainable 3-prong approach and hence may be unaware of the important environmental and social factors. Or a passionate ecologist may forget that people have genuine basic economic needs.

Conclusions

. The current structure and methodology of Grupo Fenix represent nearly two decades of trial and error and adaptation as the group continues to evolve. The message of this presentation is that long-term change at a local level requires long-term commitment. The volunteer/researcher exchange and course offering model have allowed the group and its community to be increasingly empowered, without being dependent on grants. The "Knowledge Cycle", collaboration of academics and people with local knowledge, has created an environment that fosters innovation. Because it is mutually beneficial and mutually satisfying, it is therefore self-regenerating. It "create more energy than is consumed", and thus is not just sustainable but restorative.

Adjusting the organizational focus to capacity building and creating employment opportunities has had a positive impact on Grupo Fenix success in becoming a model for sustainability, as has amplifying the focus to include other sustainable technologies alongside the renewable energies. To succeed with the low budget, high empowerment design which uses knowledge exchange to empower local residents, the organization must remain adaptable while simultaneously developing a stronger organizational infrastructure. Meanwhile, the longevity and vitality of the program in the community is evident and impressive to visitors and can inspire other communities.