Case Study

Low-Impact Solutions providing Human Resource Development

Nepal

July 2012

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Quick facts	
Zone	Several Nepal Districts
Time Frame	2006 to present
Theme	Sustainable Consumption, Housing & Employment
Leading agency	Habitat for Humanity - Nepal
Implemnting agency	Numerous local organisations & International Agencies

Introduction

Habitat for Humanity focuses on building, repairing and rehabilitating homes for those most in need. This international non governmental organization has established thousands of projects with initiatives throughout the Asia Pacific Region, as well as Africa, Latin American Europe and North America.

It was in 1997, almost twelve years ago, that Habitat for Humanity (HFH) first began their activities in Nepal. Having generated some improvements around key pilot projects, it was later, in 2005, that a strategic decision was taken to specifically increase their impact and reach towards the more poor and isolated communities. This involved establishing partnerships with nongovernment organisations, microfinance institutions alongside local village lending and savings groups, and to combine this with their international reach and donor programmes strengths. In June 2011, HFH Nepal proudly celebrated their service to their 10,000th Nepalese family.

Nepal is a landlocked country bridging one of the poorest countries in Asia with arguably two of the richest economic powerhouses of the region; Chi-

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na and India. Globally, Nepal ranks as the fifteenth poorest in the world, with a 2008 unemployment rate running at a staggering 46%. There have certainly been significant improvements in the economic welfare of Nepal over the last fifteen years in particular, however today 25% of Nepal's 30 million population is surviving on less than $1.25 a day; the internationally agreed poverty line measure. Ignoring the specific issues around gender, caste and ethnic differences, great social disparities exist generally the urban areas, e.g. with Katmandu having 3% poverty figures, and some rural areas within mid/western rural areas recording 59% poverty levels.

Even with pressures of urban migration from rural areas, the agricultural economy still serves as the backbone for the country's wealth, representing almost 40% of GDP. This sector is markedly still the largest employer, soaking up almost 75% of the workforce. This employment is not equally dispersed across the nation, as much of this activity is concentrated in one particularly fertile region; the Terai region that borders India. Due to the poor infrastructure and mountainous terrain, this explains why approximately 53% of Nepal's export trade and 47% of its import trade is with India alone.

Low Impact Sustainable Solutions

The Challenge

With general low incomes, large-scale unemployment and areas with extreme poverty levels, access to decent, habitable housing is difficult to achieve. Traditional practices of using bamboo, are slowly being replaced with interest towards using more resource-intensive, durable and expensive construction materials, involving substantial increases in concrete, steel and corrugated iron materials consumption.

The challenge HFH Nepal wanted to address was to be able to provide good quality, well presented 'modern-looking' houses using affordable and locally sustainable products and services; enhancing sustainable production, involving more sustainable consumption outcomes, whilst encouraging greater local employment generation.

Bamboo remained an obvious choice, as it is locally available, resilient and abundant. It also serves as an environmental soil erosion inhibitor and CO2 absorption resource, whilst existing local skills and technologies can be harnessed and built upon. Bamboo is extremely versatile as it can be used to make purloins, rafters, pillars and walls within the construction process. With their low weight to strength ratio, houses can have a bamboo frame, as well as, incorporating bamboo weaved wall structures. The main challenge of bamboo is that is can rot relatively quickly, supports unhealthy fungi growth and is susceptible to weakening through insect and termite attack. At the same time, with other forms of construction technology and designs being available, owning a house with bamboo pillars, a bamboo thatched roof and just weaved bamboo walls, meant the bamboo houses were perceived as being outdated, a little ugly, and potentially only for those too poor to have a different, more modern house.

The challenge therefore was to maintain the locally sustainable resources in terms of natural resources, human resource skills and traditions, whilst bringing some 'modernisation', such that, in combination, a new 'bamboo house' could be sustainable, affordable and presentable, as a desirability factor that does not differentiate status and improve social wellbeing. One aim was that it should not even look like a traditional' bamboo house, so people owning one would be free from this emergent stigma, and the associated caste and ethnic prejudices that still exists in parts of Nepal.

The Solution

HFH Nepal approached the solutions in different regions, engaging various local organizations and groups interested to support and add value within the projects. At the same time, HFHN harnessed the financial resources of international agencies to support training, land acquisition, bamboo cultivation and micro-finance support, as well as providing appropriate technology and buildings to set up relevant enterprise centres. This has resulted in a model for sustainable consumption, production and social welfare that addresses a rage of social

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and ecological problems, and utilises local human and natural capital as an investment for an even more broadly sustainable solution.

The solutions first of all sought to address the fundamental issue around the lack of durability of bamboo as a construction material that can perform comparably with other less sustainable materials. This was solved by employing a known treatment process within in what is referred to as a processing centre. The bamboo is immersed for two days in a mixture of water with some Borax and Boric Acid. This is intended to extend the lifespan and strength qualities of bamboo for over twenty-five years.

With respect to helping in construction efficiency, use of technology/skill bases and cost effectiveness, whilst at the processing centers, the bamboo is also precut, drilled, numbered and delivered to construction sites in pre-prepared packaged bundles.

The processing centres, also served as a focused area for employing women, in particular, to manufacture and produce bamboo weaved mats.

Using appropriate technology, alongside the weaving skills of the labour force (predominantly women), these mats are collected via mat collection centres and lightly re-processed in the processing centres into durable, cost effective standardized sizes and dimension for wall component uses.

As part of the construction process, the woven mats are used to cover the walls of semi-permanent shelters to create a more permanent structure. Split bamboo is then woven into the panels and plastered with mud or cement mixed with sand.

The use of sand, cement or mud-based plastering renders the walls more appealing to the eye, obscures the 'bambooness' of the house and allows for traditional painting and decorations to be applied.

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Finally, HFHN extended some of their processing centres with technology that enabled bamboo-based corrugated roof tiles and sections to be fabricated, thus replacing the need for corrugated iron, or cement based tiling products. Using these lightweight roofing sections, also means less of a requirement for metal-based roofing infrastructure.

With respect to the local employment contributions, one typical processing centre employs 16 trained local people (8 male and 8 female) and provides indirect employment to another 531 trained women mat weavers. Additionally, to improve the likelihood of these initiatives becoming self-sustaining ventures and enterprises, before initiating projects, locals are also provided with mat weaving and cultivation/harvesting training and are taught professional skills helped to increase their income-generating abilities.

Coupling all of these inputs, (from cultivation, matt weaving, collection and processing centres), a house of bamboo can be successfully built and transformed into decent, affordable, non-stigmatic and extremely sustainable product and multiple socially beneficial outcome for those most in need.

Way Forward

Habitat for Humanity believe the approach and model they have developed in conjunction with local groups and organisations, as well as international agencies and local people in Nepal can be replicated and customised for other countries, not only in Asia but also in Latin America. To take this forward, they are keen to link up and bring their experience and knowledge to make this work for others. Contact Habitat for Humanity should you or your organization be interested to support or participate (www.habitat.org).

References

Habitat for Humanity, *www.habitat.org/asiapacific/*, accessed March 13 2012

Habitat for Humanity Nepal (2012), *www.habitat.org/intl/pdf/nepal_pdf.*, accessed 13 March 2012

Country facts and figures on Nepal, UNESCAP, *www.unescap.org/huset/lgstudy/newcountrypaper/nepal/nepal.pdf*, accessed March 13 2012

UK Government Foreign Office, *http://www.fco.gov.uk/en/travel-and-livingabroad/travel-advice-by-country/countryprofile/asia-oceania/nepal?profile=economy*, accessed March 13 2012

Index Mundi 2012 Profile Nepal, *http://www.indexmundi.com/nepal/economy_profile.html*, accessed 13 march 2012