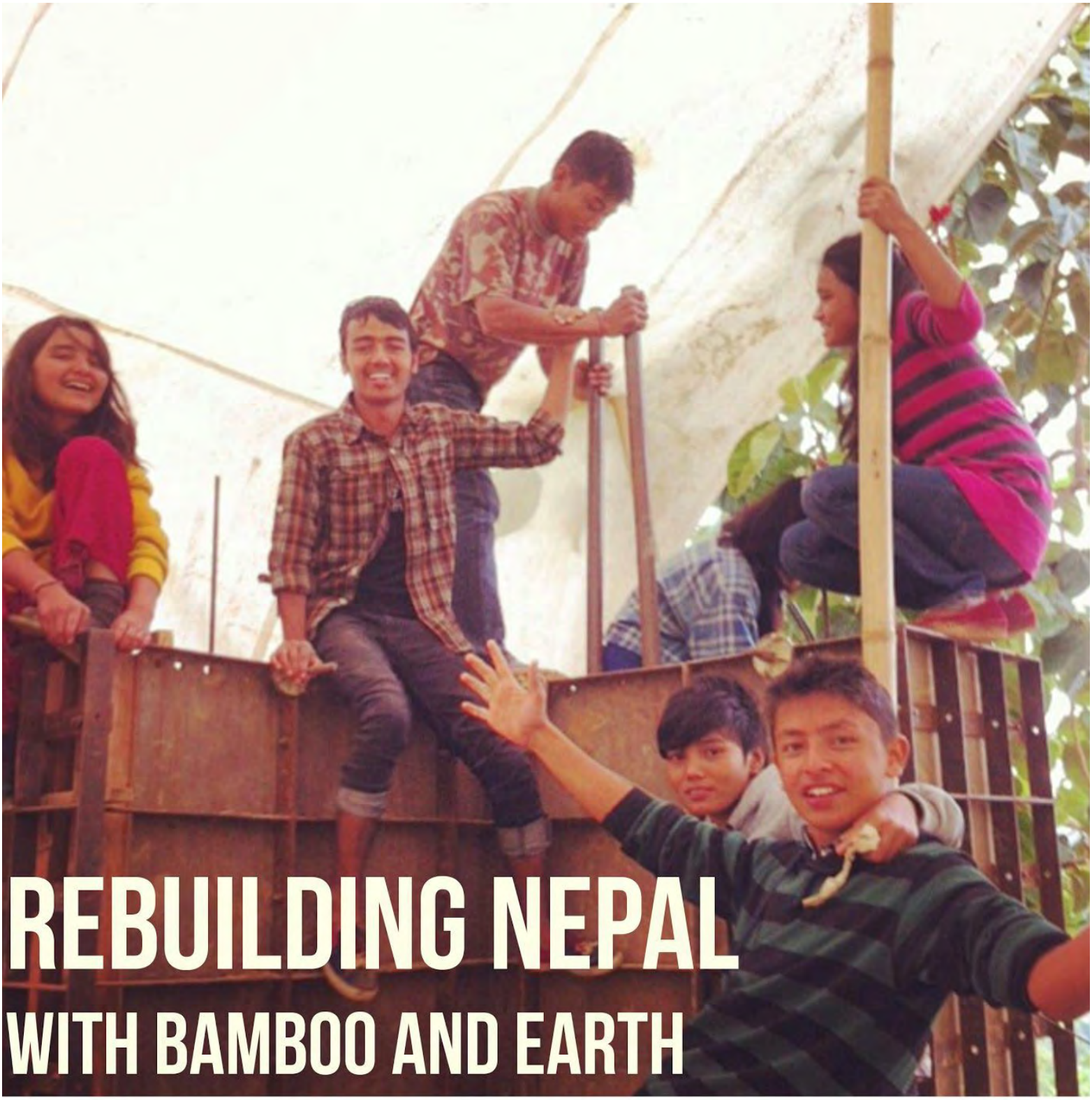


REBUILDING NEPAL
WITH BAMBOO AND EARTH

आबारी | abari
bamboo and earth initiative

AVAAZ.ORG
THE WORLD IN ACTION

Letter from the Director

According to the official figures, the massive earthquake of April 2015 in Nepal, caused damages to more than 500,000 homes and 40,000 schools. The majority of the damaged buildings were located in the rural regions of Nepal and were built with stone and mud.

Traditionally, Nepali people in rural areas have been compelled to use local resources to build their homes because of the harsh terrains and the lack of basic infrastructure to supply industrial materials. Although these shelters manifest exquisite building craftsmanship, local artisans have been unable to adapt their buildings to contemporary hygiene and safety standards including fire and earthquakes, due to abject poverty and lack of modern information.

For the last eight years, we have been working in rural areas of Nepal by teaching local artisans the ways of building contemporary and safe structures like schools, hospitals and homes using local materials in conjunction with modern engineering techniques. The fact that all our structures (over two dozen) built in the most affected regions of Nepal survived the earthquake unscathed has compelled locals and policy-makers to consider that it is the design, and not the material, that makes buildings earthquake resilient.

In a country like Nepal there is no alternative to using local materials because of our inadequate infrastructure and poor economy. It is neither environmentally sustainable nor economically viable to build structures using concrete and steel.

In a few days following the earthquake, AVAAZ believed in our model and immediately provided us with the financial support to aid our reconstruction effort. In the immediate aftermath, we provided tents and canvas to the more than 3000 earthquake victims with the help of local partners. From June onwards, the government declared that emergency relief work was complete and made it difficult to reach affected areas. We then switched our focus to transitional construction using the Owner Driven Reconstruction approach. We provided free DIY construction manuals in Nepali language, in addition to technical staffs and construction tools, to regions of Gorkha, Kavre, Sindhupalchok and Kathmandu so the communities could build transitional homes and schools using locally sourced bamboo or wood. Our team helped in the construction of over 1600 transitional homes and 200 transitional schools using locally available materials.

Our open source construction manual reached more than 500,000 people distributing it through our website, social media, local newspapers, pamphlets and through our ground staff.

We also drafted a model for the rebuilding villages using the Owner Driven Reconstruction (ODR) techniques. We were able to initiate dialogue on the ODR process by reaching out to numerous influential governmental officials, the World Bank, ADB and other NGOs and INGO.. We are happy to say that ODR has now been recognised as a legitimate way forward.

In a country like Nepal, where the weather is harsh, transitional solutions are not optimal. Moreover, we don't envision Nepal to be like Haiti, where transitional shelters became permanent; thereby turning the whole rural landscape into tin-shacks. While people were still in relief mode, we designed

8 different open source earthquake resistant and climate responsive permanent house designs (including a construction manual) that use different locally available materials like stone, earth, bamboo and wood. This design has also vociferously spread in social media, websites newspapers and pamphlets.

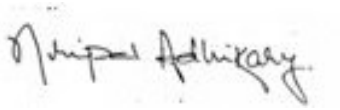
We were one of the first institutions to make a demonstration of a permanent house, while the government was still drafting its first guideline on how to make a permanent house. The house, built for a single mother, has been a model for the whole village and the entire country. Her house made of rammed earth, has a guest room so she can earn money by renting it to local tourists. The house is beautiful, spacious, warm, safe and also has improved cooking stove and rain-water harvesting. In this process, we also trained more than 100 people who have been able to spread their knowledge in their own community.

Following suit, 50 families have already signed up, in less than a month, to build permanent homes using our model. Currently, we are providing technical support to make three model villages with over 50 homes each. We are giving villagers sets of formwork for rammed earth construction, or compressed earth block machines, so they can make improved earth bricks on their own and generate livelihood. Two groups from the communities have already started their own small enterprise supplying materials for reconstruction. We are supplying 50 brick making machines as well as the trainings so that people can build safe and sustainable houses on their own. As we speak, people are laying the foundation of close to 30 permanent homes.

We might not be very big, but we have demonstrated that earthquake reconstruction can be grounds up and locally owned. None of our earthquake activities would not have been possible without the generous financial support of AVAAZ. The report below is our post-earthquake story from immediate relief to the implementation of the Owner Driven Reconstruction model for transitional shelters, schools, hospitals to designing and constructing permanent buildings and model villages with permaculture and livelihood programs.

We would also like to say, because of our intervention in transitional and permanent structures, we received the prestigious Science and Technology award of the year for providing affordable, earthquake resistant designs and technology.

Thank you AVAAZ!



Nripal Adhikary

Director
ABARI Bamboo and Earth Initiative

26/12/2015

Summary of our Projects

Project	Activities	Impact	Status
Post-earthquake Relief	- ABARI in collaboration with BELIEVERS rapidly responded to the immediate needs of earthquake survivors in most affected districts. - Distributed relief materials in Gorkha, Kavre and Sindhupalchok.	- Reached over 3000 families with much-need immediate relief materials such as sleeping bags, blankets, rice and 8,8825 tarps/tents.	Completed.
Transitional Schools	- Created designs and manuals for transitional schools and health posts. - Distributed the manual through various media platforms and partner organizations.	- Trained 300 students and masons on the construction process - Barefoot consultant teams built over 200 transitional schools in Gorkha, Kathmandu and Kavre	Completed
Transitional Shelters	- Created a manual in English and Nepali for a transitional shelter with a flexible and diverse design - Distributed the manual through various media platforms and partner organizations - ABARI barefoot consultants went to over 20 villages in Sindhupalchowk and Kavre to provide technical training to villagers.	- Built over 1600 transitional shelters in partnership with ActionAid Nepal and other partners before monsoons set in. - Reached over 30,000 families in most-affected districts - The manual was published in four major National newspapers with a combined readership of over 6 million. - Over 213,000 manual downloads and distribution.	Completed
Permanent Homes	- Released 8 open-source permanent model home designs - Distributed the manual through social media, news papers, pamphlets and website. Estimated over 500,000 reach. - Trained 100 artisans and engineers in the last 3 months - Submitted the design to the National Reconstruction Authority	- Designs to be included in National recommended design by the government, which will have a national wide reach. - Enables local citizens to build sustainable and affordable homes on their own using locally available materials.	Completed
Sanu Maya Tamang & Bhattedanda Model Village	- Submitted the design to the National Reconstruction Authority. - Construction of a demonstration rammed earth house. - CEB workshop to train community females in brick making. - Donated 5 brick-making machines, 5 rammed earth formworks and mud pulverizers. - Hired 6 female staff (incl. Sanu Maya) to assist others in construction	- Model for sustainable, post-earthquake permanent reconstruction - 15 villagers signed up for ODR reconstruction using Compressed Earth Blocks and Rammed earth in less than a month. - Created 4 independent women entrepreneurs.	Completed
Model Village	- Created and distributed our concept for an ideal post-earthquake model village. - Creating 2 model villages in Bhattedanda, Kavre , Gyalthum, Sindhupalchok.	- Rebuilding over 200 permanent homes in next two years by providing hundreds of villagers technical expertise (owner driven reconstruction). - Improving social and economic conditions through livelihood, permaculture and agriculture activities.	Ongoing
Permanent Model School	- Submitted the design to the National Reconstruction Authority as a type-design usable across the country for school reconstruction - Assisting in rebuilding 10 schools in Kavre.	- Design has been approved by the government. For the first time in the region, bamboo and earth is approved for the construction of a public building.	Completed

Immediate Relief Work

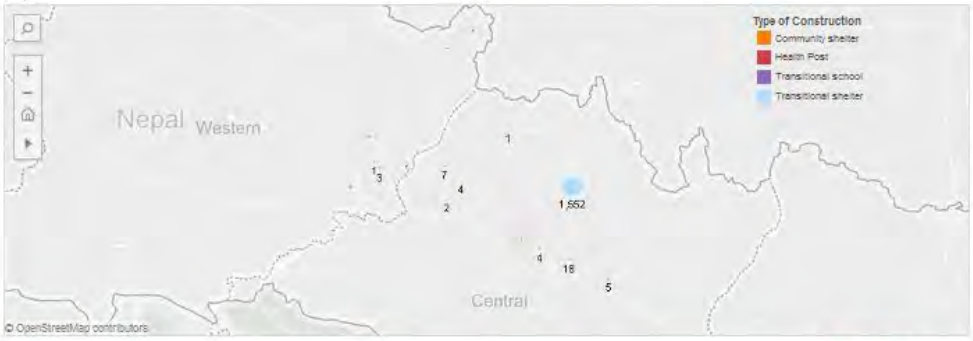
On April 25 2015, an earthquake of magnitude 7.8 followed by 7.4 Richter scale earthquake devastated the lives and physical infrastructure of Nepal. Over 10,000 people lost their lives and over 500,000 homes, 40,000 schools were destroyed. ABARI initiated a very small campaign to provide cotton tents and tarps to a community affected in Gorkha. The campaign snowballed and hundreds of people joined hands from all around the world to join this effort.

All of a sudden, from one village in Gorkha our effort scaled to most of Gorkha, Kavre, Sindhupalchok and Kathmandu and reached about 3000 families. Below is our activities on Immediate and Transitional Earthquake relief work:

Partnering with AVAAZ.ORG TENTS TO NEPAL

Abari - Operations Overview

Map



District	VDC	Community shelter	Health Post	Transitional school	Transitional shelter
Bhaktapur	Bhaktapur	4			
Dhading	khalte				2
	Marpak			7	
Gorkha	Chumchet	5	1	4	2
	Chhaikampar			5	1
	Deurali	8		2	
	Dhawa			31	
	Finam			3	
	Kerabari		1	5	
	Nareshwor			1	
Kabhre Palanchok	DhulikhelN.P	18			18
Kathmandu District	Kathmandu District	20		4	
Nuwakot	Samari				4
Rasuwa	Gatlang				1
	Saramthali			5	
Sindhupalchok	Kiwool				1,552
	Mahankal				48

OWNER DRIVEN RECONSTRUCTION

Teaching Surya Dev how to salvage local materials for reconstruction in Sindhupalchok

Owner Driven Reconstruction (ODR) is a participatory model which places homeowners at the center of reconstruction. The model integrates the homeowner's decisions on home design and site selection for house construction with building techniques tailored to local environments and resilient to environmental hazards—earthquakes, floods, landslides, and high winds in the case of Nepal. To expedite a well-informed and accelerated reconstruction process, ODR programs create contexts for homeowners to access building materials, finance construction, and receive technical assistance with home design and construction. Representatives approved by the national government monitor the construction process to ensure that homes are built to code, while homeowners remain in control of the pace of construction, the organization of labor, and, within limits, the home design.

In response to the Earthquake of April 25th 2015, ABARI activated a multilevel Owner Driven Reconstruction approach that facilitates homeowners to build environmentally conscious transitional shelters, transitional schools and permanent homes in earthquake affected districts. ABARI's vision for ODR incorporated vernacular Nepali architecture and construction practices with innovative methods in natural building, and corresponding with principles enshrined in Nepal's national building codes.

The major success of the ODR approach is the access to free information. By providing, free open source information through illustrative manuals on earthquake resistant building techniques in local languages, by providing free hands-on trainings and workshops and by deploying barefoot architects and engineers, in remote regions of Nepal, ABARI demonstrated that a relatively small group of people can have large impact on reconstruction and relief work. ABARI's work demonstrated that knowledge is power and by providing adequate skills to harness local resources, locals can sustainably rebuild homes, schools and hospitals on their own.

http://blogs.worldbank.org/endpovertyinsouthasia/rebuilding-nepal-traditional-techniques

So what is ODR?

Watch our video on: https://www.youtube.com/watch?v=JX9bFoqgBPs&feature=youtu.be

Transitional Shelters

Direct Work Area: Sindhupalchok and Kavre
Local Partner: ActionAid
Homes Built: 2000 plus
People Trained: 300
Manuals Reached: 30,000 plus families
Intervention: Trainings, Supervisions & Open Source Manual

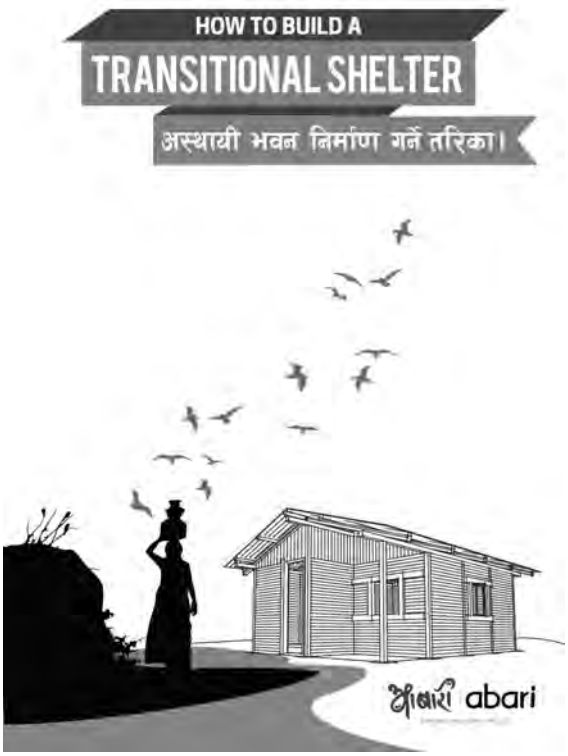
Our team leader Padam helping build a transitional shelter

Following the earthquake, the government handed out 15,000 Rupees (150 USD) as an immediate grant to buy materials for transitional shelters. The cash, meant to buy construction materials, was only enough to buy 8 pieces of Corrugated Galvanised Iron (CGI) sheets—barely enough for a small roof. Looking at the context, we created a do-it-yourself manual in Nepali and English for transitional shelters with flexible and diverse designs that encourage homeowners to build transitional homes using salvaged materials from the destroyed home plus 8 sheets of CGI sheets.

"We love the simplicity of the design and at a cost of just 30,000 nrs per house this is an affordable, short term solution that is safer and longer lasting than a tarp or tent. By involving the community in the construction of their house we are not only supporting these people with this design but we are also empowering them to take responsibility for their own future. Thank you to the ABARI team for their innovative thinking and work for rebuilding Nepal." - Dan Wright. TWIMCF . S. Asia Director

The manuals were distributed free of charge through various platforms including newspapers,

pamphlets, websites and social media. It is estimated to have directly reached of more than 30,000 families. Our barefoot architects and builders went to over 20 villages in Sindhupalchok and Kavre to teach local communities ways to make transitional shelters. We heard from numerous partners and communities that they have used our designs for building their shelters.



Link to a full Manual:

http://www.abari.org/transistional-shelter/2015/6/16/how-to-build-transitional-shelter

In Kiwool, Sindhupalchok, our barefoot consultants, with local support provided by ActionAid Nepal, used our free open source designs to build over 1600 transitional shelters. The stones, bricks, wood, bamboo along with the doors and windows were reused from the previous home, and the walls were made from local resources available, such as thatch or bamboo weave. Similarly, the foundation of these shelters range from concrete, PVC pipe and plastic.

In this manner, the designs were flexible, diverse and cookie cutters. Moreover, they helped in empowering villagers, and in taking pride in their own ideas and constructions. These shelters are expected to last up to two years and can later be transformed into cow shed or multipurpose storage area for the owners. The beauty of this project is after 2 months of our intervention, the project moved on in autopilot mode—hundreds of homes are now being built using the technology and information that we have disseminated.

"We were impressed by the Owner Driven Construction advocated by ABARI, it's a process whereby the owners take the lead to build their own homes. This was very much aligned with ActionAid's Human Rights Based Approach, values and principles and partnership with ABARI was effective in timely completion of 1600 transitional homes for people affected by the earthquake." - Paras Mani Tamang, Humanitarian Response Director, ActionAid Nepal

Easy to understand Transitional Shelter manual was written in English and Nepali

Thulo Kancha Sunwar-34,a farmer from Chittre, Ki-Wool - 5, Sindupalchowk is rebuilding his house by implementing techniques learned from the model transitional shelter.

Villagers replicating the transitional shelter design in Sindhupalchowk

Transitional Schools and Health-Posts

Work Area: Gorkha, Sindhupalchok, Nuwakot, Dhading, Bhaktapur, Kathmandu and Kavre
Local Partner: Learning Planet, BASS, Tents for Nepal, Karmi Initiatives, Herb Nepal, Army, Police, People in Need
Schools: 200 plus
People Trained: 150 plus
Manuals Reached: 20,000 plus
Intervention: Trainings, Supervisions, Open Source Manual, Construction materials

"Today the visionary construction design company ABARI is taking a lead role in sustainably rebuilding in Nepal's remote mountain regions through Community Driven Reconstruction using local resources and salvageable materials."- The Nation Smiles

The government officially called on a shutdown of schools until 29th May because of the extensive damage to schools from the earthquake, and because many children were traumatized by the recurring earthquakes and aftershocks. Many schools did not operate for the next three months. It was estimated that 40,000 schools were damaged and it is very unlikely they will all be rebuilt in the next few years.

Time consuming, semi-permanent buildings cannot be completed in sufficient numbers, have limited re--use value, and endanger the construction of timely good quality new school stock post monsoon.

Similar to transitional shelters, our design team immediately went back to the drawing board and created designs and manuals for transitional schools and health posts. These designs also make use of locally available resources, including salvaged materials.

To compliment existing efforts, Abari proposed:

1. Community Driven Reconstruction (CDR): empowering villagers to quickly create classrooms that are flexible, diverse and will not be cookie cutters.

2. Solutions adapted to the specific environment and geographic location, that compliment existing Government and Cluster designs.

3. Simple, easy to follow, inexpensive, resource--light buildings that have simple, but effective foundations.

4. Use of locally available materials, salvaged carpentry and masonry, and UN specified canvas, guaranteed waterproof for 24 months.

5. Flexible spaces that can be dismantled, stored, and reused as performance or entertainment spaces by school or village, when new classrooms/blocks are completed. Even the canvas can be used to make school bags in future.

6. Wash facilities in close proximity to all classrooms, in partnership with WASH providers.

7. Solid, rapid to deploy, non permanent masonry flooring made from locally salvaged resources. Concrete bases will not be used.

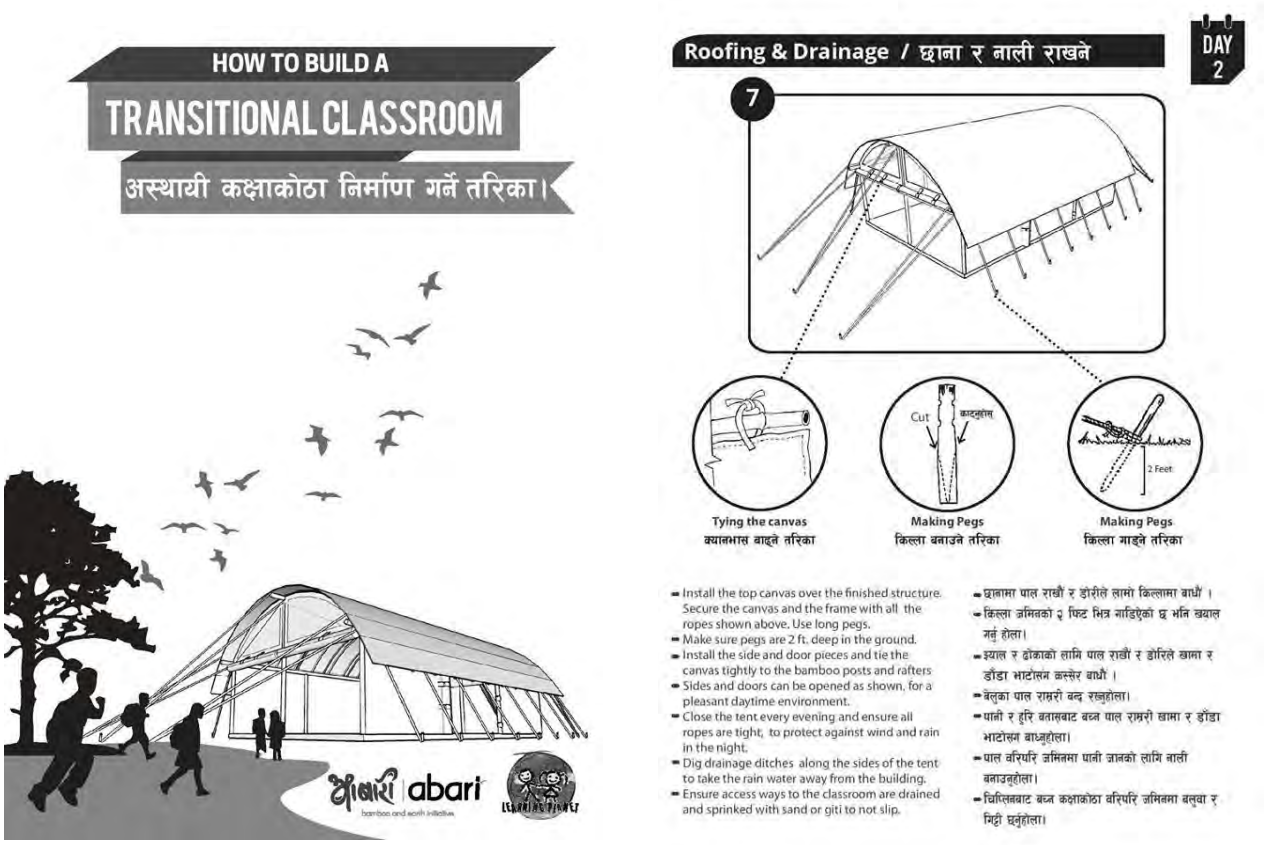
8. Nepali instruction manuals with diagrammatic illustrations requiring minimum training to follow.

9. Coordination with military for Rapid deployment above 2500m, where access may only be by foot or helicopter, materials are scarcer, and for which we have developed a specific strategy.

10. Use of different designs and techniques, for example, vaulted structure or dome Yurts, for different climatic regions.

With these points in mind, ABARI released the following open source Transitional Classroom manual:

Download the free manual at
http://www.abari.org/transistional-shelter/2015/12/27/how-to-build-transitional-classroom



The design was immediately endorsed by the government, and we signed a MOU with the local government of Gorkha district to install 80 health posts and schools. The local government arranged for helicopters and local support, allowing our team to reach Northernmost regions of the country in the Himalayas within days of the earthquakes. Along with the schools and health posts, we built a maternity wards, grain storage and multiple police stations.

Our design and build teams were so swift that the government requested us to build their oldest and prestigious schools buildings in Kathmandu like Durbar High School, Kathmandu University and Bal Mandir.

We also published our manuals through website, social media, newspapers. It has estimated reach of 20,000 people. We also handed out free canvas and bamboo with instructional manuals. We also trained over 300 students and masons on the construction process.

In total, our teams in Gorkha, Kathmandu and Kavre installed more than 200 transitional schools.

Training local youths on how to make a vaulted shelter in Kathmandu

Vaulted structures are spacious and wind resistant

No loss in school days—We were back in action in two weeks

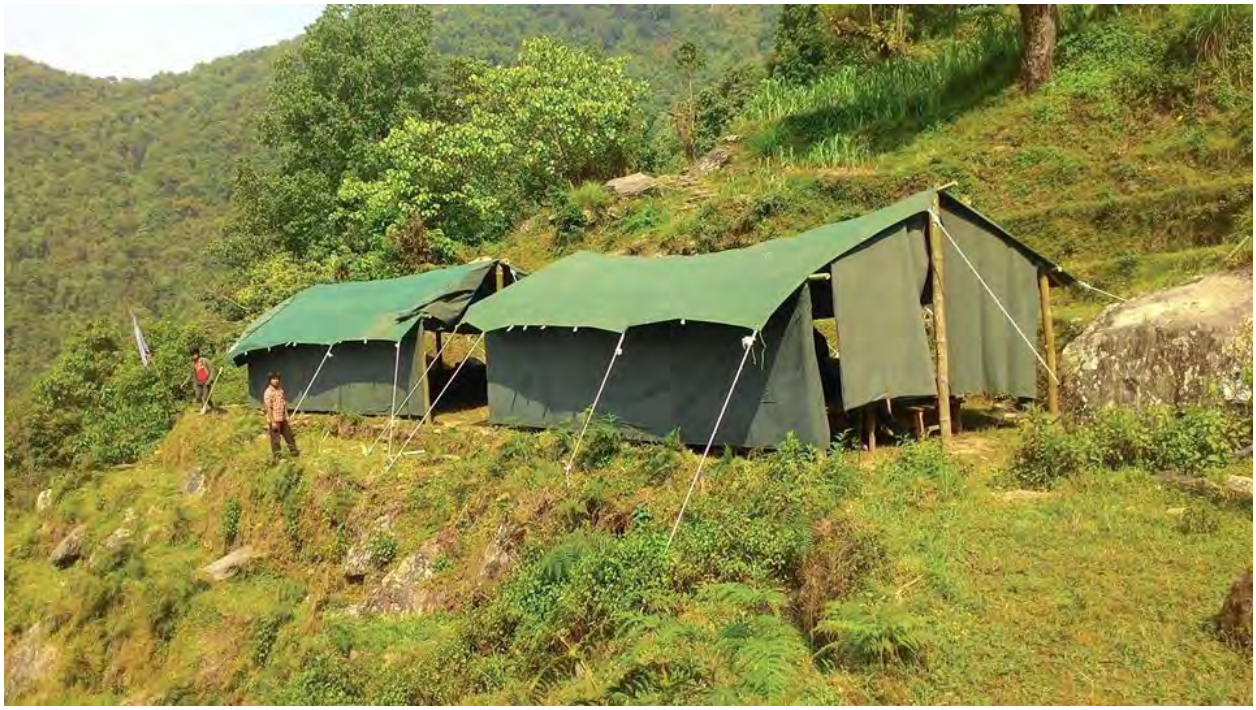
"Our school was completely damaged. Thank you ABARI for promptly providing us with school tents. They are so much cooler and lighter." Amrit Lal Shrestha, Principal of Kalyan Higher Secondary School, Nuwakot

Building a health camp at 3000 meters in Gorkha

"Thank you ABARI for immediately providing us medical tents. They are very well designed, portable and spacious".- Kathmandu University Medical School

The largest orphanage of Nepal, Bal Mandir, was not prepared for the disaster. We immediately donated our child friendly design to several such prestigious government institutions.

Children back in school in Gorkha, just three weeks after the earthquake



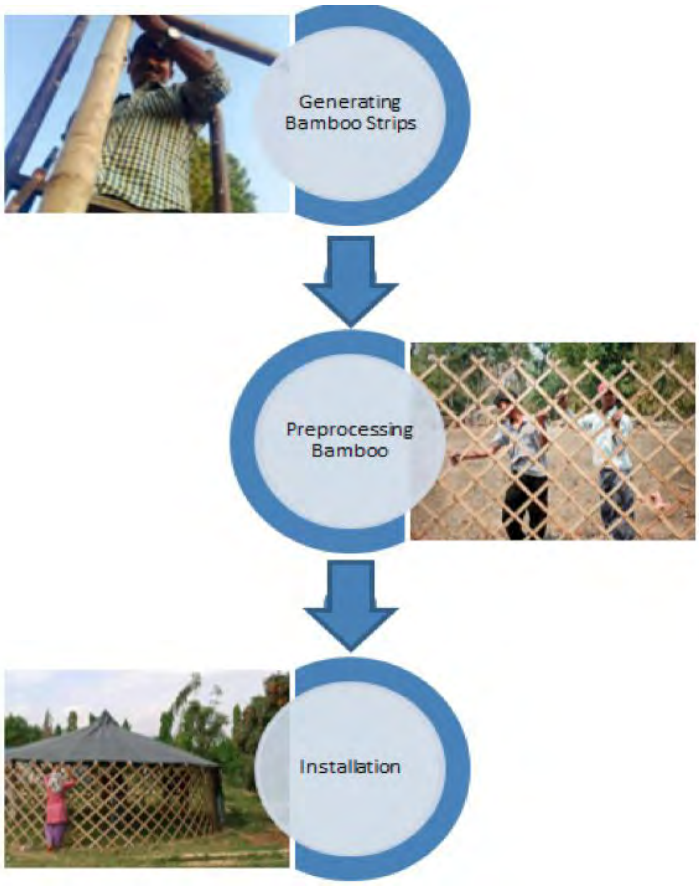
Our team walked for two days to install these transitional schools in Gorkha

There were precious thank you's from everywhere.

Yurts

In the higher climates we used Yurts. Yurts have been used for thousand years in Mongolia as permanent structures. They are aerodynamic, lightweight and can last in the most adverse weather conditions. Moreover, they can be locally produced using bamboo and canvas. Due harsh weather conditions in the Himalayan Region, we were asked by the government to make yurts for community halls, schools, health posts and monasteries.

The beauty of Yurts are it has created a beautiful local enterprise. The local community in Chitwan National Park make the bamboo strips. The local women's group then assemble them into lattices which are then sent to required locations in the mountains.



We installed child-friendly Yurts at Durbar High School to serve as Temporary Learning Centres

A Yurt designed for the colder Himalayan climate

Teachers enjoying one of our Yurts

Training locals in Chitwan how to make yurts. It's created a beautiful enterprise, where farmers in Chitwan make yurts and supply to people in need in mountains.

Permanent Homes

Region: 8 open source manual for all of Nepal
Active involvement: Bhattedanda, Kavre
Impact: Design submitted as recommended designs by the Government
Over 4000 downloads
Trained over 80 people

Rammed earth has taken on added significance after the earthquake since houses ABARI built with this technology withstood the shaking. - Nepali Times

Because of harsh terrain, poor economic conditions and bad infrastructure in Nepal there is no alternative to using local materials for construction. For the last eight years, we have been advocating that bamboo, earth and stone can make durable, modern and sustainable construction. The two buildings that we built in Kavre and Gorkha (right at the epicenter of the earthquake) survived unscathed. They stand as a symbol of hope for many rural people and also for people who are worried that our beautiful vernacular architecture will morph into concrete and steel or prefabricated structures brought from India and China.

In the immediate aftermath of the earthquake, we received hundreds of requests everyday from people all over the world, to help in rebuilding old ancestral homes that were destroyed by the earthquake. The harsh climate of Nepal does not make temporary structures an optimal solution.

Although humbled, we were constrained. Considering the scale of the need, we decided to make an elaborate open-source design and construction manual to help people build their own homes. We shared the designs and manual through social media, websites and print media. We are also happy that government is including one of our recommended home designs in its upcoming manual for designs.

Our open source designs use only 11% foreign materials like concrete and steel and 89% of the money is spent on local labor and materials. It appropriates local materials like bamboo and earth and its earthquake resistant, promotes local craftsmanship and it is thermally comfortable.

To optimise the process, we fabricated local brick making machines (Compressed Earth Block machines) and have handed out to 3 different communities in Nuwakot, Sindhupalchok and Kavre. Using these brick presses, community members can make their own bricks and thus initiate a local enterprise. There is currently an economic blockade in Nepal imposed by India which has slowed down the fabrication process. Once it eases out, we will distribute about 50 of these machines so 300 homeowner can start making their own bricks.

Our barefoot architects have been on the ground, helping people design and their own homes. While the government is still mulling the way forward for construction, we have already built the first demonstration house for Sanu Maya Tamang in Dhulikhel, Kavre. ABARI's first post-disaster permanent house of its kind, is a rammed earth single storey house in Bhattedanda, Kavre.

Sanu Maya's House

Abari, at the recommendation of local community, chose Sanu Maya Tamang considering her situation as a single mother whose house was completely damaged by the earthquake. With a daily wage of NRs. 250 (USD 2.5), and having lost her husband a few years ago, she was not in a position to rebuild her house. Moreover, having differently abled daughter, Muna (aged 13) and young son, Bijay (aged 11), has exacerbated her situation.

Sanu Maya , her son Bijay, her daughter Muna

A month after the earthquake, ABARI's design team went to Sanu Maya and designed a house according her dreams and requirements. The house is strategically designed with respect to the topography of the site. The house will act as demonstration for post earthquake permanent reconstruction not just for the community but for the whole country. With picturesque view, the house has also has a guest room so that she can earn money by renting it out to local and international tourists at 15 USD/night. For herself, she will have ample space in the house for her bedroom, kitchen and storage room for herself and her family.

Volunteers from around the world joined in to help Sanu Maya build her house. For the excavation and the foundation, volunteers from BELIEVERS and The Karmi Initiative organised a volunteer camp named Parma Swarm. The construction was then taken over by ABARI Team.

(Left: Group of residents and volunteers work together to make wide terraces for the foundation
Right: Volunteers set up canvas over the foundation works)

In the process we trained young school students and many locals. Thirty students from Kopila Valley School in Surkhet attended the rammed earth workshop and constructed a rammed earth wall. They experienced and understood earthquake resilient construction techniques, which will be replicated during their school reconstruction project.

Since June 2015, the work had started with strenuous excavation and foundation works and had to stop during the monsoon season in July- August. The construction is in its final phase in December. This pictures show the completed rammed earth walls.

One of our major intentions behind building Sanu Maya's house was to demonstrate and generate curiosity in the village about improved earthen construction technique as the earthquake had shaken people's faith in the material. To our delight, there has been an overwhelming interest in the village to build using our techniques. Fifteen villagers, in less than a month, have already signed up to build 15 permanent homes. Our team of designers and builders are in the village training and designing the homes according to their needs.

Owner Driven Approach

“Give a man a fish and you feed him for a day; teach a man to fish and you feed him for a lifetime.”- Chinese Proverb

The aim of this project is to promote entrepreneurship through the rebuilding process in the earthquake affected community of Bhattedanda, Dhulikhel, Kavrepalanchowk (also known as Kavre). Kavre is one of the hardest-hit districts, with an estimated 150,000 people were rendered homeless. Given the scale of the destruction in the district, ABARI believes that a diffused reconstruction approach through workshops and on-the-job training will be the most effective method. This project aims to introduce enterprises and skills amongst local community members that both encourage homeowners to rebuild with confidence and provide knowledge valuable to individuals beyond the rebuilding process. By empowering the community with skill trainings, ABARI aims to facilitate their livelihood development vis-à-vis the reconstruction effort.

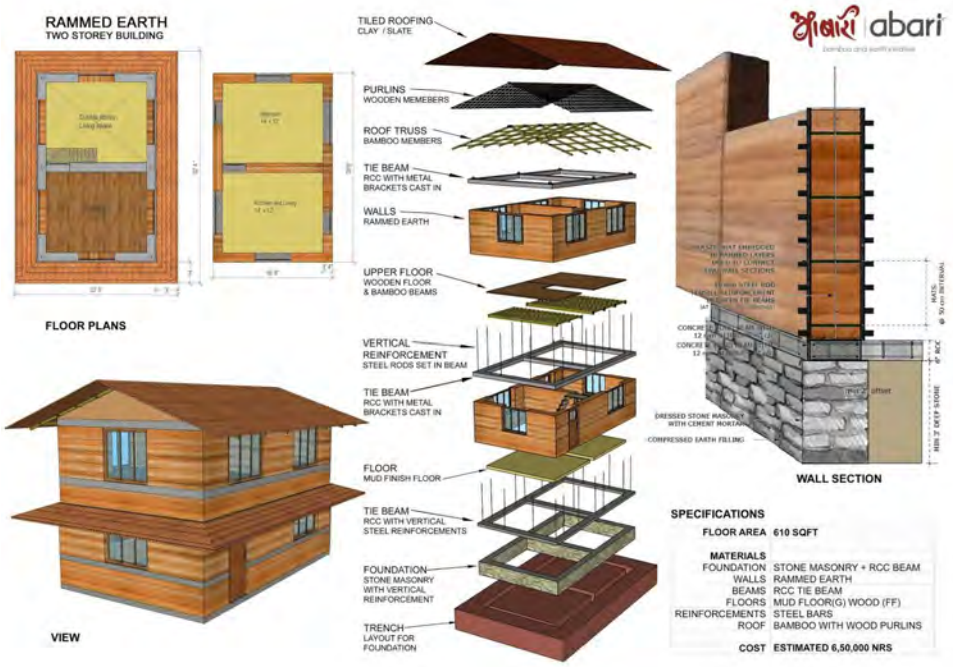
Local women in Bhattedanda marvel at the ease of making bricks

Bamboo, for example, is cheap and almost everywhere in Nepal. The nonprofit Abari Bamboo and Earth Initiative designs and builds eco-friendly structures using, well, bamboo and earth. - Newsweek

Open Source Manual

Learning from our success in making transitional shelter—that providing free information allows people to build stronger houses on their own—we designed 8 open source, modular permanent home designs for different economic, cultural and geographic brackets, with elaborate construction details. We have extensively handed out the designs to people in different villages free of cost. We have also trained more than 80 artisans and engineers just in the last 3 months. The design has been submitted to the National Reconstruction Authority, and is to be part of the recommended government designs.

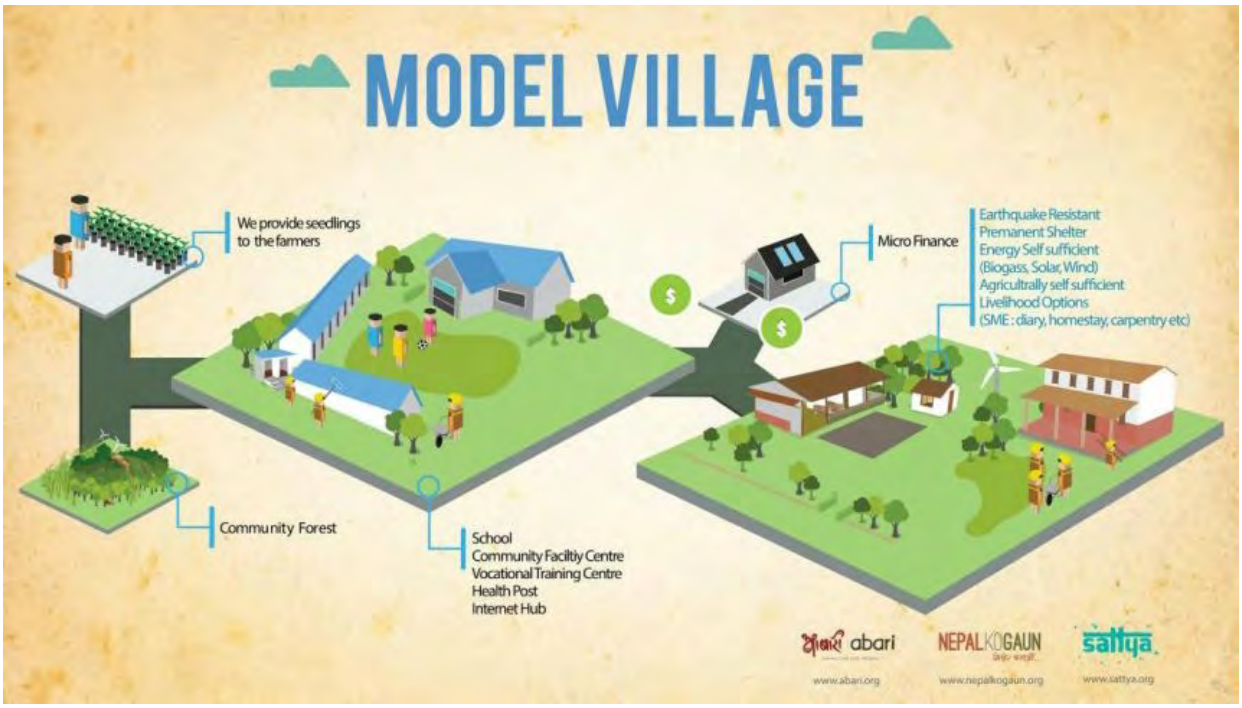
Talented social entrepreneurs at Abari (the Adobe and Bamboo Research Institute, which reuses traditional materials in contemporary construction practices) are collaborating with villagers to build earthquake resistant, light-weight houses using locally sourced materials.' - New York Times



ABARI's open-source design for a permanent home

Learn about our technique in our BBC covered video:
http://globenews24.com/en/news,video-shock-proof-homes-of-dirt-and-sand1

Model Village



ABARI is helping communities rebuild entire villages by providing them technical expertise, vocational training, machinery and equipments and some material support. We are also implementing permaculture, energy and livelihood programs with expertise from national and international partners.

The training sessions in natural building construction will also diffuse knowledge about safe design and construction practices in rural regions of Nepal, making communities self-reliant and less dependent on outside technicians to assist in building resilient permanent homes.

- Provide training to villagers on basic construction skills—masonry, carpentry, plumbing, electricity and so on with a focus on vernacular tradition through a Common Facility Centre.
- Provide homebuilders with technical support, supervision and designs for hazard resistant buildings.
- Link masons, artisan and individual structure owners to local microfinance institutions.

Abari staff teaching locals ways to test soil, and site locations, make sample blocks.

Case study: Kulay

In partnership with Mero Gaon project, conceived by Gyetrul Jigme Rinpoche, ABARI is working on designing a model village that will serve as an example for post-earthquake reconstruction and sustainable development in Kulay in Okharpauwa VDC in Nuwakot district.

Nested in a beautiful location overlooking the mountains, Kulay lies about about 12 km North-West of Kathmandu. The village was uninhabitable after the earthquake— all of its 55 homes collapsed. ABARI is assisting and training 55 Tamang households build Compressed Earth Block and Improved Stone Masonry houses using locally available resources.

The project aims to facilitate the construction of the model village through an ODR approach incorporating sustainable agriculture using permaculture model, sustainable livelihood through masonry training, rainwater harvesting, biogas toilets, and potentially homestays and trout farming.

We have already broken ground for 5 homes. Apart from team of ABARI masons and engineers, 2 barefoot consultants who specialise in permaculture design (from our partners Kamala Foundation) will help in agriculture, bio-gas, forest management and rain-water harvesting.

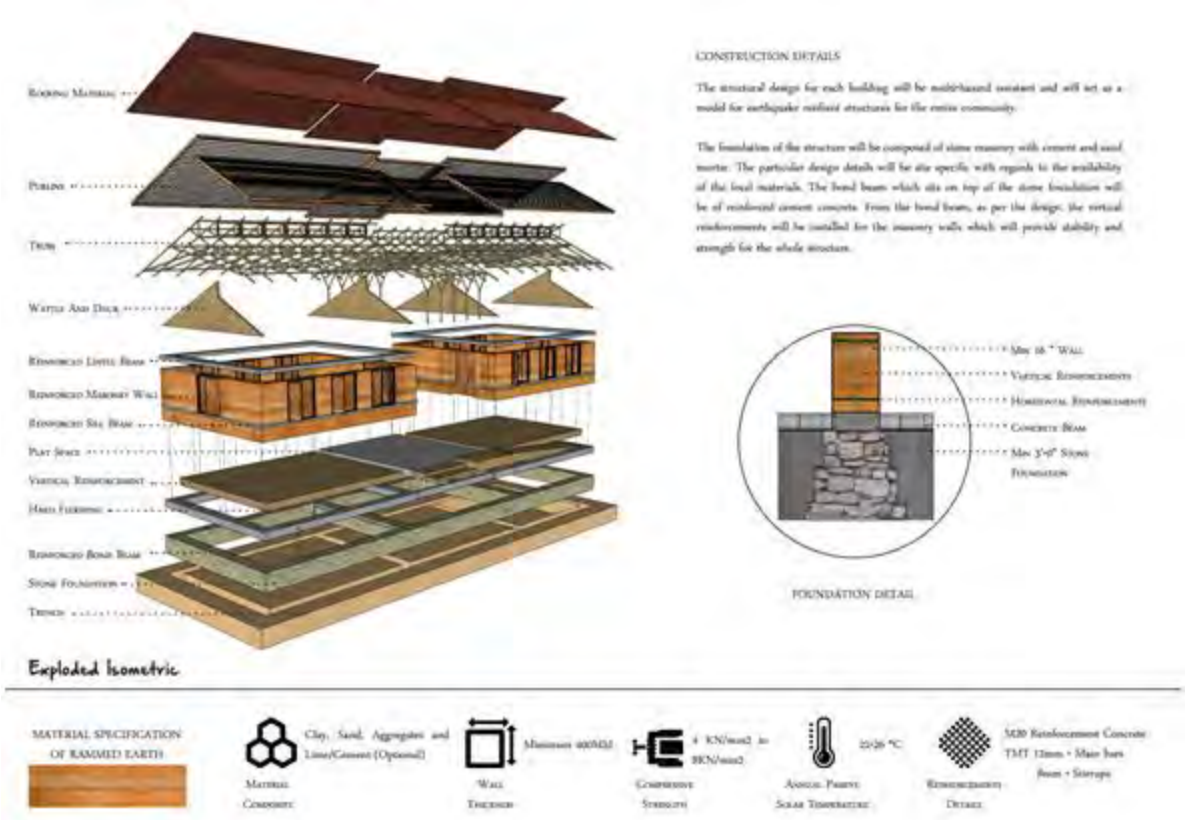
ABARI team making an assessment on the kinds of structures people need.

Permanent Model School Design

ABARI recently released an innovative open-source permanent school design that could be used for school reconstruction across the country. Our intention is to rethink the existing paradigm of educational spaces for children in Nepal post earthquake. The buildings will be made from locally sourced materials and constructed using modified vernacular techniques to create safer and inspiring structures. The school of Nepal's future will feature intuitive natural technologies as well as permaculture values in order to instill a strong sense of curiosity and thirst for knowledge among the children.

We have introduced a multi-functional play space in between classroom blocks. This multi functional space can be used in many ways such as a covered play space, an art center, a small theatre and as a communal space. Moreover, having a covered play space will allow the students to move and play around regardless of the weather conditions.

The permanent school designed by ABARI can transform and expand according to individual village needs and site conditions. The materials used in construction will be local and traditional,yet constructed with innovative contemporary building techniques. Almost all of the selected materials will be site specific,buc16et conscious and will retain their natural beauty and texture.



We will also be printing a manual on "How to build a permanent school" in English and Nepali to ensure that our designs can be replicated across the country.

Shree Narayansthan Higher Secondary School at Timal

In collaboration with local NGO, Sathsathai Mundi, we are currently working on building a model village in the Timal region of Kavrepalanchowk District. The project covers an area of 7 Village Development Committees (VDCs). As part of the the Timal project, we are building a model school to replace the completely damaged Shree Narayansthan Higher Secondary School in Narayansthan VDC. The school has 9 classrooms, among which 3 are fully damaged and 6 are partially but unusably damaged.

Our Hands-with-Hands vision has always been about empowerment "give the fish, not the net" so we are very thankful for the training element that Abari brings to it's rebuilding initiatives. Additionally we are practically aware due to our longer-term involvement in Nepal the past 15 years that locally sourced building materials will ensure a higher probability of buildings being safely constructed.- Kira Kay, Hands with Hand, Timal


(Left: Remains of the destroyed Shree Narayansthan Higher Secondary School
Right: Laying the foundation for the school)

During the construction of the model school, ABARI will provide on-the-job training to 49 local craftsmen in Timal so that they can build their own earthquake resistant homes and schools through Owner Driver Reconstruction. The craftsmen will also be trained in the process of making and laying Compressed Earth Blocks. At completion, ABARI will provide the community with 3 CEB machines along with other machineries in order to create small-scale social enterprises such as brick-making, and to accelerate the reconstruction process.

SARASWATI SECONDARY School

Saraswati Secondary School in Dhulikhel is one of the the oldest public school in the district of Kavre, and has a student population of around 800 students.

The 7.8 Richter scale earthquake that struck Nepal on April 25, 2015 damaged the three main buildings of the school, including its vocational block. The school has set up Temporary Learning Centers made of metal frames and CGI sheets to serve as temporary classrooms since then.

Our vision is to build a state-of-the-art vocational block for the six different vocational courses offered at Sanjiwani Higher Secondary School. The building will have two components—a classroom that has a capacity of 40 students for theoretical teaching, and a workshop for practical training. The vocational block will be a multipurpose space that can be used to teach all vocational courses taught at the school. ABARI will also employ a vocational trainer to teach students these courses for the period of two years. This will ensure students receive theoretical and practical education of the highest quality.

In conclusion

It has been a roller-coaster journey after the earthquake, and we are proud to have effectively collaborated with many local communities, young professionals, urban youth, policy makers and international groups in our post-earthquake activities — everything from immediate relief, to advocating for policy change and devising a long term Owner Driven Reconstruction program using locally available resources.

We are inspired to continue our efforts in the next few years to eradicate homelessness in Nepal caused by the earthquake, and we hope to continue receiving generous support from our well-wishers for our endeavors. We are very proud to say that our efforts would not have been possible without the generous support of AVAAZ and other friends from all over the world.

Acknowledgement

This effort would not have been possible, apart from the financial support of AVAAZ, without the contribution of Tents to Nepal and other numerous individual donors. We would like to thank our local partners Believers for the immediate relief efforts. Hugging Nepal, BASS, Herb Nepal, Karmi Initiative were instrumental in putting together transitional schools. Action Aid for their support in Sindhupalchok for making transitional homes.

Shrestha S & Associates
Chartered Accountants

P. O. Box 472
Kathmandu, Nepal

info@ssa.com.np

Auditor's Report to the shareholder of Abari Bamboo & Earth Initiative Private Limited

Introduction

We have examined the attached Balance Sheet of Abari Bamboo & Earth Initiative Private Limited as at 31st Ashad, 2073 (July 15, 2016), Profit and Loss Account and Cash Flow Statement for the period ended on that date annexed thereto.

These financial statements are the responsibility of the management of the company and our responsibility is to express an opinion on these financial statements based on our audit.

Scope

The audit was conducted in accordance with generally accepted auditing standards and these standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examination on test basis, evidence supporting the amounts and disclosure in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audit provides a reasonable basis for our opinion.

Opinion

We have obtained all information and explanations, which to the best of our knowledge and belief were necessary for the purpose of our audit. In our opinion, proper books of accounts as required by law have been maintained by Abari Bamboo & Earth Initiative Private Limited, in so far as appears from our examination of those accounts. Balance Sheet, Profit and Loss Account and Cash Flow Statement dealt with by this report are in agreement with the books of accounts.

Further, in our opinion, to the best of our information, according to the explanations given to us and from our examination of the books of accounts of Abari Bamboo & Earth Initiative Private Limited, we have not come across cases where any member or Board of Directors or any employee of the company have acted contrary to the provisions of law or caused loss or damage to the company or committed any misappropriation and acted in a way to jeopardize the interest and security of the company.

SHRESTHA S. & ASSOCIATES ★ CHARTERED ACCOUNTANTS ★

Date: October 02, 2016
Place: Kathmandu

CA Sarmendra Shrestha
Managing Partner

Abari Bamboo & Earth Initiative Private Limited

Bharatpur, Chitwan

Balance Sheet

As at 31st Ashad 2073 (15th July 2016)

Source of Fund	Sch	Current Year	Previous Year
Share and Capital Liabilities			
1. Share and Capital Reserve			
a. Share Capital	1	1,100,000.00	1,100,000.00
b. Accumulated Profit/(Loss)		1,847,824.83	952,359.71
2. Medium and Long Term Loan			
a. Secured Loans		-	-
b. Unsecured Loans		-	-
Total		**2,947,824.83**	**2,052,359.71**
Applications of Fund			
1. Fixed Assets	2	**1,175,658.49**	**490,739.94**
3. Other Assets			
3. Current Assets		**657,424.03**	**16,657,691.66**
a. Closing Stock		-	-
b. Cash and Bank Balance	3	1,608,978.33	14,314,867.69
c. Advance Income Tax and TDS Receivable		17,799.93	100,000.00
d. Advance and Prepaid	4	(969,354.23)	2,242,823.97
e. Deposits		-	-
Less: Current Liabilities and Provisions		**(1,114,742.31)**	**15,096,071.89**
a. Other Payables	5	(1,432,877.11)	14,748,168.99
b.Provision for Income Tax		318,134.80	347,902.90
Net Current Assets		**1,772,166.34**	**1,561,619.77**
Misc.Expenditure to the extent not written off		-	-
Total		**2,947,824.83**	**2,052,359.71**
		-	-

Notes to Account 9

Schedules 1 to 9 form integral parts of this statement

As per our report of even date

Accountant

Director

CA Sarmendra Shrestha
Shrestha S & Associates

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Abari Bamboo & Earth Initiative Private Limited

Bharatpur, Chitwan

Profit and Loss Account

For the Period from 1st Shrawan 2072 to 31st Ashad 2073 [July 17, 2015 to July 15, 2016]

Particular	Sch	Current Year	Previous Year
Direct income	6a	10,502,998.54	1,287,776.40
Indirect Income	6b	12,462,496.53	6,740,614.30
Direct Expenses:		3,724,446.61	1,798,652.77
Cost of Production	7a	2,532,372.31	1,605,699.27
Other Direct Expenses	7b	1,192,074.30	192,953.50
Gross Profit		**19,241,048.46**	**6,229,737.93**
Administrative Expenses	8a	703,399.76	200,884.00
Other Indirect Expenses	8b	17,091,065.73	4,437,029.26
Profit From Operation		**1,446,582.97**	**1,591,824.67**
Interest Expenditures		-	-
Depreciation	2	232,983.05	56,996.34
Profit (Loss) Before Tax		**1,213,599.92**	**1,534,828.33**
Provision for Income Tax		**318,134.80**	**347,902.90**
Profit after Tax		**895,465.12**	**1,186,925.43**
Profit (Loss) up to Previous Year		952,359.71	(234,565.72)
Profit/(Loss) Balance		**1,847,824.83**	**952,359.71**
d. Balance of Profit and Loss Transferred to Balance Sheet		**1,847,824.83**	**952,359.71**

As per our report of even date

SHRESTHA S. & ASSOCIATES * CHARTERED ACCOUNTANTS *

Accountant

Director

CA Sarmendra Shrestha
Shrestha S & Associates

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Abari Bamboo & Earth Initiative Private Limited

Bharatpur, Chitwan

Cash Flow Statement

For the Period from 1st Shrawan 2072 to 31st Ashad 2073 [July 17, 2015 to July 15, 2016]

	Particulars	Current Year		Previous Year	
A	***Cash Flow From Operational Activities***				
	1. Profit/(Loss) before income tax and abnormal income	**1,213,599.92**		1,534,828.33	
	Add:				
	Interest Payment/(Interest Income)	-			
	Depreciation	232,983.05		56,996.34	
	Preliminary Expenses Written Off				
	Loss on Sales of Fixed Assets				
	2. Cash Flow Before Changes in Working Capital		1,446,582.97		1,591,824.67
	(Increase)/Decrease in Current Assets	3,294,378.27		(1,865,418.97)	
	Increase/(Decrease) in Current Liabilities	(16,181,046.10)		15,086,071.89	
	Operational Cash Flow				
	Interest Payment				
	Income Tax Payment	(347,902.90)			
	Provision for Income Tax	-		(347,902.90)	
	Abnormal Cash Flow				
	Abnormal Income/Expenditures				
	Net Cash Flow From Operational Activities (1+2)		**(11,787,987.76)**		**14,464,574.69**
B	***Cash Flow From Investing Activities***				
	a. Interest or Dividend				
	b. (Purchase) Sale Investment				
	c. Increase/(Decrease) in Loans or Deposits				
	d. Increase/(Decrease) in Pre-Opeartional cost				
	e. Sales of Shares				
	f. Purchase of Assets	(917,901.60)		-	
	Net Cash Flow From Investing Activities		**(917,901.60)**		-
C	***Cash Flow From Financing Activities***				
	a. Issue of Share Capital	-		-	
	b. Proceeds from Long Term Loan				
	c. Proceeds from Short Term Loan			(200,000.00)	
	d. Others				
	Net Cash Flow From Financing Activities		-		(200,000.00)
	Increase/(Decrease) in Net Cash Flow **(A+B+C)**		(12,705,889.36)		14,264,574.69
	Opening Balance of Cash and Bank		14,314,867.69		50,293.00
	Closing Balance of Cash and Bank Balance		**1,608,978.33**		**14,314,867.69**

Schedules 1 to 9 form integral parts of this statement

As per our report of even date

SHRESTHA S. & ASSOCIATES * CHARTERED ACCOUNTANTS *

Accountant

Director

CA Sarmendra Shrestha
Shrestha S & Associates

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Abari Bamboo & Earth Initiative Private Limited

Bharatpur, Chitwan

Schedules forming part of Financial Statement

F.Y. 2072-73

Share Capital

Schedule- 1

Particulars	Current Year	Previous Year
Authorized Capital	**10,000,000.00**	**10,000,000.00**
Issued Capital	**5,000,000.00**	**5,000,000.00**
Paid Up Capital	**1,100,000.00**	**1,100,000.00**
Total	**1,100,000.00**	**1,100,000.00**

Cash and Bank Balance

Schedule- 3

Particulars	Current Year	Previous Year
Cash-in-hand	25,340.00	5,340.00
Mega Bank Nepal	3,683.43	14,309,527.69
Sanima Bank	274,970.43	-
Sanima Bank-PC	1,000.00	-
Sanima Bank-WWF	1,303,984.47	-
Total	**1,608,978.33**	**14,314,867.69**

Advance and Prepaid

Schedule-4

Particulars	Current Year	Previous Year
Gandaki Machinery	395,500.00	-
VAT Receivable	1,125,896.07	281,316.82
Deferred VAT	5,850.00	5,200.00
WWF Hariyo Ban Project	1,956,733.28	206,812.57
Sundry Debtors	(4,875,956.37)	880,517.50
Other Advances	-	460,900.00
WWF- Staff Advances	(491,642.49)	(134,612.57)
Staff Advances	914,265.28	542,689.65
Total	**(969,354.23)**	**2,242,823.97**

Other Payables

Schedule- 5

Particulars	Current Year	Previous Year
Sundry creditors	-	471,738.00
TDS payable @ 15%	19,059.00	-
TDS payable @ 1.5%	7,014.86	-
TDS on Audit Fees	675.00	600.00
TDS on Rent	4,000.00	4,000.00
Audit fee payable	50,175.00	44,600.00
VAT Payable	1,035,095.92	181,451.10
WWF SST Payable	8,013.69	4,000.00
WWF TDS on Consultancy	50,400.00	-
SST Payable	77,762.86	11,896.96
Paramount Legal Advisory	6,000.00	
Salaries Payable	-	138,200.00
Advance from Avaaz	-	10,889,685.89
Advance from INBAR	920,304.00	-
Nripal Adhikary	(3,611,377.44)	2,963,997.04
Wages Payable	-	38,000.00
Total	**(1,432,877.11)**	**14,748,168.99**

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SHRESTHA S. & ASSOCIATES ★ CHARTERED ACCOUNTANTS ★

Direct Income **Schedule- 6a**

Particulars	Current Year	Previous Year
Sales	4,836,326.85	508,557.40
Design Consultancy	2,448,560.18	265,486.70
Training	-	159,750.00
Technical Consultancy	2,350,854.87	-
Technical Consultancy-WWF	867,256.64	353,982.30
Total	**10,502,998.54**	**1,287,776.40**

Indirect Income **Schedule- 6b**

Particulars	Current Year	Previous Year
Avaaz Project Income	10,889,685.89	4,315,648.06
Income from Bank Interest	139,432.70	-
Other Income	1,433,377.94	2,424,966.24
Total	**12,462,496.53**	**6,740,614.30**

Cost of Production **Schedule-7a**

Particulars	Current Year	Previous Year
A. Opening Stock	-	**448,215.00**
B. Purchases during the year	***2532372.31***	**1,157,484.27**
C .Closing Stock	-	-
Total (Cost of Production= A+B-C)	**2,532,372.31**	**1,605,699.27**

Other Direct Expenses **Schedule- 7b**

Particulars	Current Year	Previous Year
BIA Training Cost	-	87,150.00
Salaries & Wages Factory	1,192,074.30	85,050.50
Tools	-	20,753.00
Total	**1,192,074.30**	**192,953.50**

SHRESTHA S. & ASSOCIATES ★ CHARTERED ACCOUNTANTS ★

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Administrative Expenses **Schedule- 8a**

Particulars	Current Year	Previous Year
Printing & Stationery	1,081.00	185.00
Consultancy	110,000.00	-
Internet	35,999.00	-
Fine & Interest	41,488.00	-
Office Expenses	62,607.70	1,500.00
Rent Expenses	40,000.00	40,000.00
Legal Expenses	120,059.00	-
Repairs & Maintenance	6,700.00	-
Audit Fees	45,000.00	40,000.00
Food Expenses	13,100.00	-
Excavation	140,400.00	-
Meeting Expenses	45,208.00	-
Bank Charges	3,415.86	920.00
Education Sponsorship	-	14,800.00
Electricity	36,541.21	1,645.00
Food Expenses	-	5,170.00
Fuel Expenses	999.99	19,159.00
Graphics Design	-	10,000.00
Rates & Taxes	800.00	5,905.00
Travel Expenses	-	61,600.00
Total	**703,399.76**	**200,884.00**

Other Indirect Expenses **Schedule- 8b**

Particulars	Current Year	Previous Year
Durbar High School Expenses	-	58,928.20
Madan Puraskar Pustakalaya Expenses	5,401,020.42	2,905.00
Timal Expenses		59,548.00
Avaaz Project Cost	11,690,045.31	4,315,648.06
Total	**17,091,065.73**	**4,437,029.26**

SHRESTHA S. & ASSOCIATES * CHARTERED ACCOUNTANTS *

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Abari Bamboo & Earth Initiative Private Limited
Fixed Assets

F.Y. 2072-73

Schedule- 2

Particulars	Opening WDV as on 01st Shrawan 2072	Current Year Addition						Dep. Rate	Depreciation for this year	Unabsorbed addition	WDV as on Ashad end 2073
		Up to Poush	Up to Chaitra	Up to Ashadh	Total Additions	Sales	Grand Total				
Factory Building	67,687.50				-	-	67,687.50	0.05	3,384.38		64,303.12
Treatment Building	203,038.13	-	-	-	-	-	203,038.13	0.05	10,151.91	-	192,886.22
Total A	**270,725.63**	**-**	**-**	**-**	**-**	**-**	**270,725.63**		**13,536.29**	**-**	**257,189.34**
Furniture & fixtures	18,750.00				-	-	18,750.00	0.25	4,687.50		14,062.50
Computer & office equipments	6,250.00	252,212.40	14,500.00		266,712.40	-	272,962.40	0.25	67,032.27		205,930.13
Total B	**25,000.00**	**252,212.40**	**14,500.00**	**-**	**266,712.40**	**-**	**291,712.40**		**71,719.77**	**-**	**219,992.63**
Vehicles	-	415,929.20	-	-	415,929.20	-	415,929.20	0.20	83,185.84	-	332,743.36
Total C	**-**	**415,929.20**	**-**	**-**	**415,929.20**	**-**	**415,929.20**		**83,185.84**	**-**	**332,743.36**
Treatment Machine	79,475.00	-	-	-	-	-	79,475.00	0.15	11,921.25		67,553.75
Boucherie Machine	54,187.50	-	-	-	-	-	54,187.50	0.15	8,128.13		46,059.37
Generator	43,350.00	-	-	-	-	-	43,350.00	0.15	6,502.50		36,847.50
Transformer	-	235,260.00	-	-	235,260.00	-	235,260.00	0.15	35,289.00		199,971.00
Other Assets	18,001.81	-	-	-	-	-	18,001.81	0.15	2,700.27	-	15,301.54
Total D	**195,014.31**	**235,260.00**	**-**	**-**	**235,260.00**	**-**	**430,274.31**		**64,541.15**	**-**	**365,733.16**
									-		-
Grand Total	**490,739.94**	**903,401.60**	**14,500.00**	**-**	**917,901.60**	**-**	**1,408,641.54**		**232,983.05**	**-**	**1,175,658.49**

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SHRESTHA S. & ASSOCIATES
CHARTERED ACCOUNTANTS

Abari Bamboo & Earth Initiative Private Limited
Bharatpur, Chitwan
2072-73

Notes To Accounts & Significant Accounting Policies **Schedule- 9**

1 Company Information

Abari Bamboo & Earth Initiative Pvt. Ltd (Abari) is a private limited company registered with the Office of

2 Accounting Convention

a. The Financial statements of Abari, expressed in NPR, are prepared in accordance with historical cost
b. Income and expenses are accounted for on accrural basis of accounting except as stated otherwise.

c. Abari had signed a grant agreement with the Avaaz Foundation on May 05, 2015 for earthquake relief

Particulars	FY 2071-72	FY 2072-73	TOTAL	USD Equivalent
Amount received			**15,605,329.21**	**150,000.00**
Less: Reimbursment of Expenses	**399,995.26**	**-**	**399,995.26**	**3,940.00**
Net Amount received			**15,205,333.95**	**146,060.00**
Project cost-Avaaz	**4,315,648.06**	**11,690,045.31**	16,005,693.37	151,434.16
Admin-Avaaz	*319,179.57*	*563,353.67*		
Food Expenses-Avaaz	*87,109.00*	*162,243.50*		
Human Resource Cost-Avaaz	*1,357,010.12*	*4,936,926.59*		
Material & Supplies - Avaaz	*1,184,358.39*	*5,209,731.95*		
Printing & Stationery - Avaaz	*3,873.00*	*180,567.11*		
Repairs & Maintenance-Avaaz	*21,239.00*	*19,474.20*		
Satellite Phones-Avaaz	*300,884.95*	-		
Tent-Avaaz	*842,000.00*	-		
Tools-Avaaz	*14,253.82*	*453,625.29*		
Travel-Avaaz	*185,740.21*	*164,123.00*		
Balance Fund			**(800,359.42)**	**(5,374.16)**
Represented by:				
Loss absorbed by Abari			**(800,359.42)**	**(5,374.16)**

The project was completed on 31.05.2016. Matching amount of NPR 10,889,685.89 has been recognised Expenses has been expressed in equivalent USD, taking base the average exchange rate applicable from

d. Further funds received from other donors during the year amounted to NPR 1,433,377.94 which has been

SHRESTHA S. & ASSOCIATES CHARTERED ACCOUNTANTS

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3 Fixed assets

Fixed asssets are stated at cost of acquisition, including any attributable costs and interest, if any, for Depreciation on fixed assets is charged to Profit & Loss Account on diminishing value method. The rates

Nature of Assets	Depreciation rate(%)
Building	5
Vehicles	20
Office Equipment	25
Furniture & Fixtures	25
Other assets	15

4 Related Party Disclosures

Amount receivable from director Mr. Nripal Adhikary amounts to NPR 3,617,377.44. The said amount is interest free and no agreement has been signed for the same.

5 Contingent liability and litigations

Abari does not have any legal suits pending against it nor has filed for any legal case. There is no

6 Previous year figures

Previous year figures have been re-grouped and rearranged whenever considered necessary.

SHRESTHA S. & ASSOCIATES * CHARTERED ACCOUNTANTS *

Nripal Adhikary

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