



Sustainable Environment and Ecological Development Society

SEEDS | annual report
06-07



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message

SEEDS has always taken the low-tech approach. We have worked to demystify technologies, be it in construction, DRR or education sectors. In our search for locally appropriate and viable solutions, we have found a wealth of knowledge in our indigenous wisdom that is mostly unpublished, but lurks in every village and in the minds of our elders. Through our works we have tried to unravel the technicalities of the seemingly simple indigenous knowledge, and to support it with appropriate translations of modern technology.

In 2006 Rajasthan saw devastating floods of the kind and scale never seen before. We were there to stand by the people in their hour of desperate need. While we tried to contribute our little bit, we also learnt a lot from the local people and nature. As we moved towards an interim shelter response programme, we felt the need to be sensitive and responsive to the local cultural and environmental context. The result, which emerges after intense discussions with the local residents and within our technical teams, was an unprecedented shelter design using mud and thatch, and traditional circular designs. We added stabilization technologies to the mud and compressed into interlocking blocks that added durability, disaster resilience, ease of construction, and aesthetics to the most basic and oldest building material on earth. The circular design was windstorm and earthquake resistant, and had evolved over centuries perhaps for these very reasons. The thatch roofs could be built and maintained by the house-owner families themselves. The mud walls and thatch roofs gave houses that had a minimal carbon footprint, and at the same time gave far greater thermal comfort than modern cement concrete houses. The thermally resistant walls and breathing roofs were local green building technologies, that still don't find their place in the green building technology domain, but provide a comfortable, safe and sustainable solution for local life and lifestyles.

The Rajasthan project, and others carried out in the past year gave an immense sense of satisfaction, learning and motivation to all of us at SEEDS. The work on urban safety in Orissa took the earlier urban risk reduction work of SEEDS to the strategic level. The Indian Ocean Tsunami Warning System (IOTWS) project provided linkages between local safety efforts in the villages of the Andaman Islands and the regional multi-country initiative. The Poonch reconstruction training project was our graduation strategy from the post earthquake shelter work to building local capacities for safe construction practices. School Safety work continued in full swing in Gujarat, Rajasthan, Andamans and Shimla. GOLFRE, the Tsunami Learning Project and various research initiatives were continuations of our work to learn from practice, and to share our learning. Our interactions with network partners through Sphere-India, the Asian Disaster Reduction and Response Network and other bilateral partners reached new heights. The ActAhead-III International Conference held in Ahmedabad was the third in our series of international learning and partnership events, and focused on the much needed work of school safety. Commitments from the State Government of Gujarat for local action and the International Community for global action through the agreed agenda were landmark achievements.

All of us at SEEDS thank our supporters, donors, partners, volunteers and friends who have helped make us the mission that we are today. I share with you the learning from our Rajasthan post flood shelter programme and our annual report with great satisfaction and gratitude.

Manu Gupta
Executive Director, SEEDS
(2007)



vision

Resilient Communities

mission

Equipping the most vulnerable with appropriate tools and technologies, sharing knowledge and skills, and promoting linkages among stakeholders to prevent life, loss and suffering.

guiding principles

- Prompt in our action
- Identify and reach out to the most vulnerable
- Facilitate community participation in decision making
- Adapt to local and cultural environment
- Non-discriminatory in our approach
- Focus on individual
- Promote excellence

ORISSA URBAN SAFETY INITIATIVE

Risk becomes more imminent as urbanization accelerates and cities expand. The state of Orissa in India is an example where urban risk is looming large. In Orissa, civic services and the general quality of the settlements is of a low standard, as a result of which the urban communities are being subjected to an ever increasing risk of natural as well as technological disasters. Orissa's economic development has also led to ecological stress and environmental conflicts in many regions, spatial increase in agricultural activities leading to over-exploitation of groundwater, depletion of natural vegetation cover, salination of soil, and erosion of biodiversity often culminating in litigation and social tension.

In partnership with National Foundation of India (NFI) the Orissa Urban Safety Initiative aims to reduce the impact of natural disasters on urban communities by strengthening the local capacity to prepare and respond to natural disasters. Community level action plans, local risk assessment and stakeholder studies are being carried out in 5 cities namely Berhampur, Bhubaneswar, Cuttack, Puri and Talcher.

The project actively involves local government officials, community members and Disaster Risk Reduction (DRR) experts at State level through meetings and consultative workshops.



INDIAN OCEAN TSUNAMI WARNING SYSTEM

Community Based Disaster Management in the tsunami affected region of Andaman and Nicobar Islands, India has been initiated to prepare coastal communities against future disasters.

The initiative focuses on vulnerability mapping, stakeholder analysis, training on emergency management and preparing village disaster management plans. 15 Panchayats in one sub-district are being mapped both in terms of physical and social vulnerability. Resource assessment is also being done for all the villages under these Panchayats. Emergency task forces are formed in each village and trained on specific tasks like early warning, shelter management, search and rescue and evacuation.

Supported by USAID under the Indian Ocean Tsunami Warning System programme, the entire process has a multi-hazard approach. Stakeholder analysis and vulnerability assessment involves communities and local government authorities through focus group discussions, interactive workshops and in-depth interviews. Village Disaster Management Plan for all the Panchayats are being prepared and distributed which clearly defines roles and responsibilities of task force members. All villages are similarly mapped in terms of demographic and socio-economic parameters. The maps also show important infrastructures like hospitals, schools, police and fire stations in and around villages. Disaster emergency kits, informative posters and a handbook for task forces are also being distributed in the Panchayats for education and awareness.





POONCH RECONSTRUCTION TRAINING PROJECT

The Kashmir earthquake of October 2005 caused massive damage in terms of lives and livelihood. SEEDS in partnership with the National Disaster Management Authority (NDMA) and the local government built 400 intermediate shelters for the affected families in Poonch district of Jammu and Kashmir. During the construction phase the structural damage assessment team of SEEDS analysed that maximum damage was caused due to collapse of masonry buildings.

A mason's association was formed in the district for introducing good construction practices and ensuing recovery process. Two levels of trainings were conducted for the masons- one, at basic level wherein the mason was trained in good masonry practices in seismic areas so he can work ably under the supervision of an engineer or a construction supervisor and second, at a level of a "technician" - wherein the mason can work independently and is equipped with in-depth knowledge of good construction practice in seismic zones. The thrust of the training programme was to enhance the available skills and introduce through practice and demonstration, upgraded skills related to seismic resistant construction.

Four locations were selected and in each cluster, a model demonstration house was built for the neediest beneficiary of that location. The local masons (including members of the SMA) were given "hands-on" training as the construction on the model demonstration houses progressed. The training and construction of the demonstration houses were carried out by local contractors. At each stage of construction, the local communities were invited to observe the process.

Presently at least 130 masons have enlisted themselves and are in contact directly and indirectly. Out of these, 40 masons have undergone full training. Supported by American India Foundation (AIF), the mason training programme has significantly inspired quality construction practices in the region.

SEEDS MASON ASSOCIATION

In the wake of the Gujarat earthquake (2001), SEEDS in partnership with Gujarat State Disaster Management Authority, took the initiative to mobilise and train masons on safe construction practices. Since its inception in 2004, SEEDS Mason Association (SMA) has successfully conducted trainings for masons across several districts. In the year 2006-07, SMA conducted trainings for more than 200 construction workers. SMA not only ensures a sustainable source of income for the masons but also facilitates quick mobilisation of skilled manpower for any disaster situation.

SMA played a significant role in the reconstruction process after the Kashmir earthquake and Barmer floods. Training on earthquake resistant construction and retrofitting was imparted by SMA in the district of Poonch. More than 100 construction workers were mobilised in the Poonch district of Jammu and Kashmir and construction of a new school building and retrofitting of two houses was carried out. After mobilisation of masons in flood affected areas of Barmer, SMA members are helping in construction and monitoring of 300 shelters.

In its continuous efforts to capacitate the masons, SMA developed mason training posters and distributed amongst all its members. It also liaised with GSDMA to get a feedback on its certification programme for construction workers in Gujarat.

GUJARAT SCHOOL SAFETY INITIATIVE-II

Three million children were directly affected in 2001 Bhuj earthquake. Educational infrastructure and processes were affected in 18 districts by the earthquake, especially, in Kutch, Rajkot, Surendranagar, Jamnagar, Ahemdabad and Patan. To this effect, Gujarat State Disaster Management Authority (GSDMA) took lead in the country in taking up activities on school safety. After the successful completion of Gujarat School Safety Initiative-I (GSSI-I), GSDMA in collaboration with UNDP contracted SEEDS to implement the project: "Training of Trainers on Disaster Risk Reduction" under GSSI-II. The project aimed at training of teachers in 25 districts of the state and developing textbooks on disaster awareness for students of classes VII, VIII and IX.

The goal of the project "Training of Trainers on Disaster Risk Reduction" under Gujarat School Safety Initiative was to promote a "culture of disaster safety" among the school community. Under the project, four Trainings of Trainers (TOT) were held at the state level which produced 86 master trainers spread out in various districts of the state. 25 trainings were held at district level that trained 593 teachers from various talukas and a lessons-learnt workshop with teachers and parents was held towards the end of the project. The project created one model school for each district and prepared the Disaster Management Plan with the help of the school administration, teachers and students.



ANKUR:

Post Flood School Restoration Initiative

After the devastating flood in Barmer (2006), many school buildings were destroyed and many more rendered unusable and unsafe. Along with its partners, The Children's Investment Fund Foundation (CIFF) and Usha & Lakshmi Mittal Foundation, SEEDS is reconstructing 18 of these damaged schools. The aim would be to construct disaster resistant schools and provide students with a cohesive learning environment.

ANDAMAN SCHOOL SAFETY INITIATIVE

The Indian Ocean Tsunami in 2004 caused significant damage in the Andaman and Nicobar Islands, India. SEEDS responded with immediate relief and built intermediate shelters for 354 affected families in Hutbay region of Andaman and Nicobar Islands. Schools were severely affected which resulted in prolonged disruption of academic process. As part of the rehabilitation process SEEDS initiated a school safety programme in Andaman.

The Andaman School Safety Initiative (ASSI) not only focus on disaster preparedness in schools but also aims to reach out to the local communities through children. Emergency task force training, evacuation route maps, mock drills are some of the key activities under this initiative. Parents and teachers are actively engaged through open demonstrations and contact workshops. Informal educational games and posters are also being disseminated for awareness and wider outreach.

Supported by Dan Church Aid and Christian Aid the programme is being implemented across 40 schools in South Andaman. It is estimated that around 34000 school students and community members will benefit from the initiative.



DISASTER PREPAREDNESS TRAINING WORKSHOP

SEEDS was approached by Focus Humanitarian Assistance to organise and conduct school safety workshops in two schools of Junagarh district, Gujarat. Two day safety workshops were carried out in Diamond High School and Aga Khan School. The workshops, the school community including teachers, staff and students were imparted knowledge and training on disaster preparedness. School disaster management plans were formed and task forces were created and trained as per the plan. Mock drills and demonstrations formed an integral part of the training workshop. IEC materials like classroom hazard hunt form, family hazard hunt form, search and rescue manual and, first aid manual were also distributed to raise awareness and build capacity of the school community.



SCHOOL EARTHQUAKE SAFETY INITIATIVE SHIMLA

School Earthquake Safety Initiative, Shimla (SE SIS) was initiated in the Shimla district of Himachal Pradesh to enhance sensitivity towards earthquake risks in the region. The initiative was carried out in partnership with Christian Aid and European Commission Humanitarian Aid Department (ECHO), with support of the Government of Himachal Pradesh. The project aimed to inculcate a culture of safety through the school community.

The initiative was implemented in the chosen 20 schools of Shimla district. The programme followed a two pronged approach for ensuring safety against future earthquakes: constructing safer school buildings and building capacity towards earthquake preparedness. Demonstration of Non Structural Mitigation (NSM) formed an essential part of the project. Structural strengthening (retrofitting) of schools was carried out in 5 selected schools. Efforts were taken to build capacity of different stakeholders like masons, students and teachers, to reduce the risks and to be able to face disasters in future. Education and awareness materials were disseminated, and trainings on structural strengthening and mock drills were carried out under the programme. School disaster management plans were also prepared for these 20 schools.



GLOBAL OPEN LEARNING FORUM ON RISK EDUCATION (GOLFRE)

SEEDS have always adhered to the maxim that knowledge is power. Keeping this adage in mind the idea of GOLFRE was conceived to strengthen people with the power of knowledge.

Global Open Learning Forum on Risk Education (GOLFRE) is a pedagogy developed by a group of internationally based universities and NGOs to bridge the existing gap between knowledge and practice -knowledge as it exists in universities and research centres, and practice as is carried out in the field by NGO workers, community volunteers and government field staff.

The forum recognizes the strength of knowledge that exists with practitioners, and the value that academicians can add to it with their interpretations and analysis. It's mandate is to tap the tacit knowledge, practical wisdom and human capital latent in the minds and practices of academicians and field workers as the principal resource for training and education.

Under the GOLFRE umbrella a certificate course on disaster management for school teachers was launched. This course has been developed by SEEDS, Christian Aid and IEDM Laboratory at Kyoto University. Around 46 teachers enrolled as the first batch of the course and successfully completed it. A two day workshop was conducted at the end of the course. Simulations, demonstrations and group activities formed an essential part of the workshop. The participants were evaluated throughout the duration of the course based on which certificates were awarded.

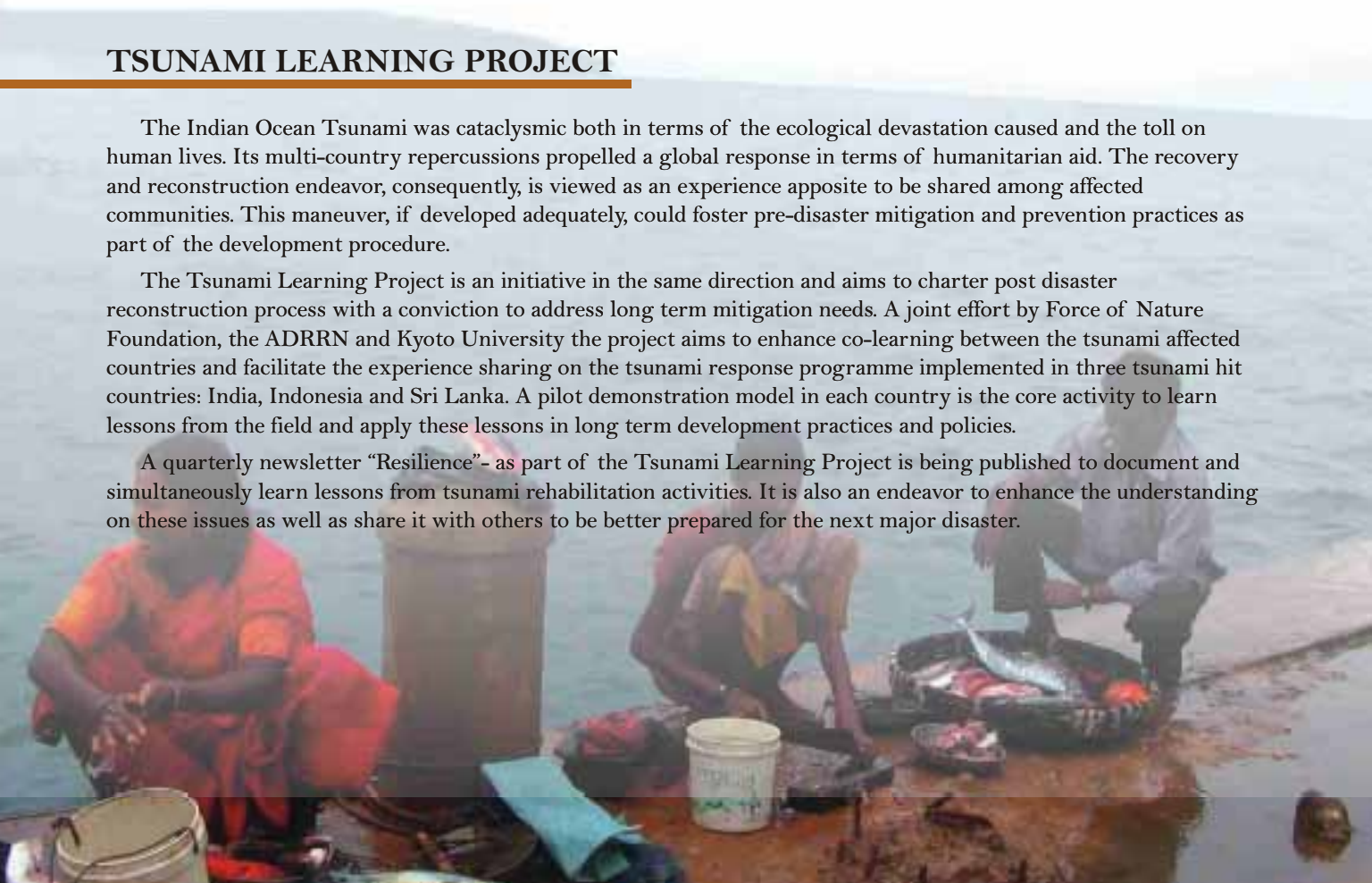


TSUNAMI LEARNING PROJECT

The Indian Ocean Tsunami was cataclysmic both in terms of the ecological devastation caused and the toll on human lives. Its multi-country repercussions propelled a global response in terms of humanitarian aid. The recovery and reconstruction endeavor, consequently, is viewed as an experience apposite to be shared among affected communities. This maneuver, if developed adequately, could foster pre-disaster mitigation and prevention practices as part of the development procedure.

The Tsunami Learning Project is an initiative in the same direction and aims to charter post disaster reconstruction process with a conviction to address long term mitigation needs. A joint effort by Force of Nature Foundation, the ADRRN and Kyoto University the project aims to enhance co-learning between the tsunami affected countries and facilitate the experience sharing on the tsunami response programme implemented in three tsunami hit countries: India, Indonesia and Sri Lanka. A pilot demonstration model in each country is the core activity to learn lessons from the field and apply these lessons in long term development practices and policies.

A quarterly newsletter "Resilience"- as part of the Tsunami Learning Project is being published to document and simultaneously learn lessons from tsunami rehabilitation activities. It is also an endeavor to enhance the understanding on these issues as well as share it with others to be better prepared for the next major disaster.



BUILDING CENTRE EVALUATION STUDY

The building centre programme was launched to cater to the growing need of the social housing sector. Building centres have been instrumental in spreading awareness around the country on cost effective construction technologies and make available the skills to manufacture construction materials and building elements using these technologies.

SEEDS was engaged by Housing and Urban Development Corporation Limited (HUDCO) to carry out evaluation of these building centres by sampling 31 building centres across 19 states in India.

Key findings of the study and recommendations were proposed for implementation. SEEDS reached to the conclusion that a fresh impetus should be given while reviving the building centre programme in future. A strong leadership, an effective monitoring system as well as effective dissemination and marketing mechanisms should be created so that 'cost-effective' technologies and products are made available within the reach of communities.

PROVENTION CONSORTIUM RESEARCH WORK

In its efforts to promote innovation and learning in risk reduction, SEEDS with support from Provention Consortium undertook a research on "Development of education tools for building safety based on the perception of house owners in India". The project focused on three regions: Gujarat, Himachal Pradesh and Andaman & Nicobar. The project enabled professionals in the field of disaster management to have an insight into perceptions of house owners regarding building safety in different regions of the country susceptible to various hazards. It also helped in gauging the present level of knowledge regarding building safety of the house owners and develop appropriate tools for education and impact assessment.

CITIZEN RESOURCE CENTRE (CRC)

Andaman and Nicobar Islands were severely affected by the Indian Ocean Tsunami, 2004. SEEDS with its long and sustained presence in the region have worked on several initiatives that addressed both rehabilitation and risk reduction. In a pioneering effort, SEEDS partnered with Port Blair Municipal Council to build a Citizen's Resource Centre. With the credo "Disaster risk reduction begins with knowledge", SEEDS conceptualized the Citizen's Resource Centre, which is essentially an interactive museum dedicated to the people of Andaman and Nicobar Islands.

Nearly at its completion stage, the Citizen's Resource Centre aims at showcasing best practices on disaster risk reduction (DRR), sensitizing children through practical games, providing citizens an understanding of its local vulnerabilities and housing a training centre. This initiative is supported by UN/ISDR, Christian Aid, DanChurch Aid and FES. SEEDS is also actively engaged in dialogue with several local governments to build similar resource centers in states prone to natural disasters.





BARMER AASHRAY YOJANA: Post Flood Shelter Restoration Programme

The Barmer Aashray Yojana is a project taken up by SEEDS India to reconstruct 300 houses in the flood-ravaged district of Barmer in the western desert state of Rajasthan. The flash floods, following six years of drought, that occurred in August 2006 destroyed lives, livelihoods, livestock and crops.

SEEDS targeted families that are socially marginalized and ostracized, persons who are physically handicapped and/or remotely located. Beneficiaries have not been solely selected through the SEEDS survey that took about one month, beginning December 2006. Community participation is the core of Barmer project. Villages included in the programme have been assisted in forming Village Development Committees, which are the link between SEEDS and the beneficiaries. The beneficiaries have been selected through consensus in committee meetings that are attended by all residents of a village.

The houses are specially modeled to comply with the socio-cultural and environmental peculiarities of the district and the villages involved. Beneficiaries of only one village (Jalela) have to be relocated to Kotra.

Apart from the three hundred houses, SEEDS also plans to construct seven tankas or wells, five latrines with attached bathrooms and provide solar panels to the beneficiaries. Further, workshops on good sanitation practices would be conducted to spread awareness amongst the communities.

SPHERE

SPHERE India in consultation with its member agencies launched an initiative called Unified Response Strategy (URS) to establish a system of unified response in humanitarian emergencies. UNICEF India supported the concept design and piloting phase and SEEDS India office served as the secretariat for Sphere-URS.

The initiative primarily aimed to develop mechanisms, tools, capacities and protocols for information sharing, pre-positioning, coordination and collaborated response in humanitarian emergencies. One of the key highlights of the initiative was the introduction of the Common Assessment Format for effective and coordinated response after a disaster. The format was compiled from the assessment formats of 25 member agencies.



Sphere India

ASIAN DISASTER REDUCTION AND RESPONSE NETWORK (ADRRN)

SEEDS as a steering committee member of the Asian Disaster Reduction and Response Network (ADRRN) remain committed towards increased collaboration among NGOs and other stakeholders for effective and efficient disaster reduction and response in the Asia-Pacific region.

In the year 2006-07 SEEDS not only raised the relevant concerns of NGOs in the Asia-Pacific region to the larger community globally, but also actively engaged in mutual learning and better standards on humanitarian practices. ADRRN members gathered in Kuala Lumpur in March 2007 to develop a better understanding on how practitioners can be more responsible to protect vulnerable populations against sexual exploitation and abuse (SEA). The investigation workshop trained participants on how to design and carry out an investigation to respond to allegations of SEA. The management workshop identified key initiatives and policies that humanitarian organizations can put in place to minimize risk and maximize accountability.

SEEDS also steered a multi-country project for ADRRN that enhanced co-learning from rehabilitation and recovery approaches of Tsunami. The Tsunami Learning Project implemented across three worst affected countries - Indonesia, India and Sri Lanka - was unique as it enabled experience sharing of humanitarian practices across borders and captured a dynamic recovery process.



CBDRM BADGHIS PROVINCE

SEEDS collaborated with the Afghanistan based NGO, Coordination of Afghan Relief, to build disaster resilient communities in Badghis province of Afghanistan. Workshops were conducted for the field workers, touching upon the basics of disaster management, community participation and participatory risk analysis tools. The emphasis was on practical aspects of implementing CBDRM.

Resource mapping was carried out in all 13 villages of the province through village level and household surveys to determine demographic profile, socio-economic status and condition of the existing infrastructure. Resource mapping helped the field practitioners to ascertain the existing coping capacities of the communities. Task forces were created and training on shelter management, first aid, fire, search and rescue, and relief coordination was imparted. Stakeholder analysis was carried out separately to ascertain the capacity building needs of these primary stakeholders. Training manuals were developed under the project to train women, farmers, masons, teachers and local leaders explaining their roles and responsibilities during disasters.

During the course of training several NGOs participated and benefited. This ensured that the knowledge and learning was spread across a wide spectrum and not just to a selected few.



ACT AHEAD III

INTERNATIONAL CONFERENCE ON SCHOOL SAFETY

Coinciding with the UN/ISDR's campaign for 2006-07 – “Disaster Reduction Begins at School”, an International Conference on School Safety was organized by SEEDS with active support from the UN/ISDR, Coalition of Global School Safety, The World Bank, the National Disaster Management Authority (NDMA), Gujarat State Disaster Management Authority (GSDMA), United Nations Development Program (UNDP), United Nations Educational Scientific and Cultural Organization (UNESCO), Christian Aid and Save the Children. Over 150 national and international delegates, and over 1500 children, school teachers and parents took part in the event. The various presentations and deliberations in the course of the conference led the way to the drafting of the Ahmedabad Action Agenda for School Safety that sets the goal of achieving “Zero Mortality of Children in Schools from Preventable Disasters by the year 2015”

We need to devise definite ways and means in which partnerships can work for the ultimate benefit of the community.

Manu Gupta, , Director, SEEDS

SEEDS is a member of and signatory to the Code of Conduct for the International Red Cross and Red Crescent Movement, SPHERE Standard in Humanitarian Aid, The International Council of Voluntary Agencies and Asian Disaster Reduction and Response Network.

The various activities we carry out are made possible through the support of individuals and organizations. We gratefully acknowledge the financial, material, moral and technical support of the following partners.

Aga Khan Foundation

American India Foundation

Asian Disaster Preparedness Center (ADPC)

Asian Disaster Reduction Center (ADRC)

Cap Solidarites

Christian Aid

Coalition of Global School Safety

Coordination of Afghan Relief

Dan Church Aid

European Commission Humanitarian Aid Department (ECHO)

Force of Nature

Friedrich Ebert Stiftung

Forest Department Himachal Pradesh

Government of India

Gujarat State Disaster Management Authority

Kyoto University

Lakshmi & Usha Mittal Foundation

National Foundation for India

National Disaster Management Authority

Port Blair Municipal Corporation

Save the Children

SPHERE India

The Children's Investment fund foundation (CIFF)

The European Commission Humanitarian Aid Department's
Disaster Preparedness Programme (DIPECHO)

United Nations Development Programme (UNDP)

United Nation International Strategy for Disaster Reduction (UNISDR)

United Nations Educational, Scientific and Cultural Organization (UNESCO)

United Nation Children's Fund

United States Agency for International Development

World Bank




Name of Society: Sustainable Environment & Ecological Development Society
Reg. Office: 315, Kailash Tower I, Mount Kailash
 New Delhi- 110 065
Reg. No. S/25402 of 1994

BALANCE SHEET AS AT 31ST MARCH 2007

	SCHEDULE	Amount (Rs.)
SOURCES OF FUNDS:		
FUNDS	1	45,440,227.16
SECURED LOANS	2	442,162.00
TOTAL =====>>>>>>>>>>>>		45,882,389.16
APPLICATION OF FUNDS:		
FIXED ASSETS		
- GROSS BLOCK	3	8,524,240.87
- LESS: DEPRECIATION FUND		3,379,431.23
		5,144,809.64
CURRENT ASSETS, LOANS & ADVANCES	4	40,972,776.78
LESS:		
CURRENT LIABILITIES & PROVISIONS	5	235,197.26
- NET CURRENT ASSETS =====>>>>>>>>		40,737,579.52
TOTAL =====>>>>>>>>>>>>		45,882,389.16
NOTES TO ACCOUNTS	8	

For RAKESH B. LAL & CO.
 CHARTERED ACCOUNTANTS
 RAJAT BEHARI LAL (PARTNER)
 Place : New Delhi
 Dated: 25.03.2008



For Sustainable Environment & Ecological Development Society
 Manu Gupta (Vice President)
 (Anshu Sharma) (Secretary)



Name of Society: Sustainable Environment & Ecological Development Society

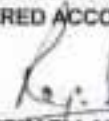
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Reg. No.: S/25402 of 1994

INCOME & EXPENDITURE ACCOUNT FOR THE YEAR ENDING 31ST MARCH 2007

Particulars	Schedule	Amount (Rs.)
A - INCOME		
GRANTS & DONATION	6	54,662,099.33
INTEREST & OTHER INCOME		1,185,041.73
		<u>55,847,141.06</u>
B - EXPENDITURE		
EXPENDITURE ON PROJECTS	7	35,103,679.61
OTHER EXPENDITURE		161,743.45
	(B)	<u>35,265,423.06</u>
C-EXCESS OF INCOME OVER EXPENDITURE	(A-B)	20,581,718.00
LESS: TRANSFERRED TO SPECIFIC FUNDS		12,716,667.57
BALANCE CARRIED TO BALANCE SHEET		7,865,050.43
NOTES TO ACCOUNTS	8	

For RAKESH B. LAL & CO.
CHARTERED ACCOUNTANTS



RAJAT BEHARI LAL
(PARTNER)

Place : New Delhi

Dated: 25 October 2007

For Sustainable Environment & Ecological Development Society


Manu Gupta
(Vice President)


(Anshu Sharma)
(Secretary)



Barmer, Rajasthan, India

Indigenous Knowledge and Modern Science give Environment Friendly Shelter Solution in Flood Affected Desert Region of India

Indigenous knowledge for shelter comfort and sustainability

Communities living in rural Rajasthan are used to constructing houses with local materials and indigenous technology for many generations. For construction of their dhani, all the family members play a major role and have assigned responsibilities. While the men of the family collect soil of good quality from nearby places, the womenfolk gather cow dung, which they mix with the mud to prepare the basic construction material. The women of the family do the plasterwork for the new house, as well as for regular maintenance of the walls and floor. The roof is made by tying and weaving the dried stalk and by-product of the local Jowar crop. The house is oriented in such a way that the wind direction and sun path ensure good ventilation and thermal comfort, which is very critical since summer temperatures in this region reach about 50°C. Normally the size of the openings is very small as it reduces heat gain and also gives less exposure to sand storms, which are a common local threat.

The people generally produce houses that are circular in plan and opt for lower heights. This is usually due to the location in the High Wind Velocity Zone where there are heavy winds especially during the summer. The circular plan helps to streamline the airflow with the least amount of resistance. A diagram of the dhani is illustrated in Figure 1.

Since this area is also located in the moderate to high seismic zone, based on the Earthquake Vulnerability

Map of India, the circular shape can also give good lateral resisting strength to the houses. During the 2001 earthquake in Kutch, Gujarat, which is very near to Barmer, very less damage was observed in houses with similar designs.

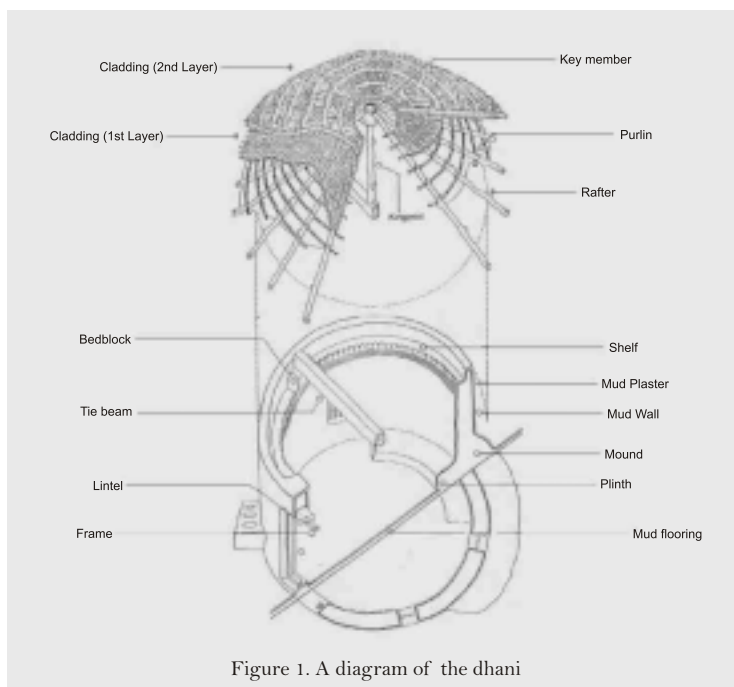


Figure 1. A diagram of the dhani

Survival and propagation of indigenous construction knowledge

The indigenous technology for constructing shelters is widely used in the area. The community members themselves are the messengers for transferring this technology to the next generation. As all members of the family are part of the construction activity, they have a sense of ownership of the shelter and an understanding of the materials and processes.

There are five main factors why this technology of shelter construction is still surviving in the remote desert areas and how it is disseminated to other communities in the larger region. These are shown in Figure 2 and elaborated below.

1. Community leaders set an example by using this technology. One very common and important tradition followed in most rural communities in India is to have a group of respected people who set an example for the rest of the community. Members of the community will often follow these leaders with regards to their behavior, choices, and general way of life. In Barmer villages, most of the respected people in the community live in Dhani. Seeing this, therefore, other community members are encouraged to follow.

2. Community involvement in construction of shelter All of the community and family members are involved in various activities of shelter construction. Involvement of family members as well as relatives eases the burden of construction and strengthens community spirit. This is also one of the reasons this technology has survived and continues to be used in this rural and tradition-centered area.

3. Extreme climatic conditions in Barmer, summer temperatures reach as high as 50o C and in winter the night temperature is near the freezing point. Concrete houses become ovens in the heat and chillers in the cold. There is no electricity and fuel is very scarce and unaffordable for thermal control. In order to survive in these extreme conditions, an appropriate house is required. Though some people have started opting for modern materials, they are not as comfortable in these modern houses as they are in traditional ones.

4. Availability of local materials at no cost availability of local materials, which is free of cost and transportation, is a major attraction for a community already impoverished by inadequate livelihood options and a harsh climate.

5. Good design for safety and comfort A circular shape is capable of resisting wind pressure created by sand storms and wave pressure created by earthquakes. The walls are of insulating quality and are thick, giving good thermal comfort inside the house for both temperature extremes. Roofing is also properly connected to the walling system, giving higher structural safety to the shelter as a unit. The combination of safety and comfort has resulted in a time tested shelter technology that is respected locally for its immediate as well as long term benefits.

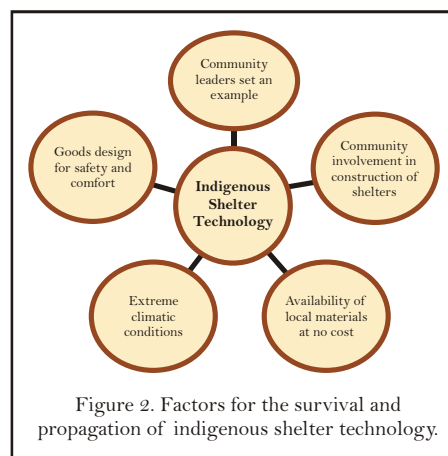


Figure 2. Factors for the survival and propagation of indigenous shelter technology.

The Support of Science

SEEDS visited the affected areas immediately after the floods and carried out a damage assessment along with a study of the local environment, both natural and built. The team assessed and documented the traditional construction practices in the area, which proved to have several benefits. The structures were found to be very environmentally friendly as the materials created no ecological or carbon footprint; the houses were very conducive and thermally comfortable in the extreme weather conditions prevalent in the area; the circular design protected the structures from strong winds and earthquakes; and the construction processes were simple and suited to local skill levels.

SEEDS and their various partners intervened in the construction of 300 shelters under the Barmer Ashray Yojana (Barmer Shelter Program). Research was carried out on appropriate technologies for supporting the

traditional construction system, which led to the Stabilized Compressed Interlocking Earth Block (SCEB) technology. In SCEB technology, local mud is stabilized with five percent cement, and compressed into blocks that have high structural strength and water resistant capability.

In partnership with Christian Aid, and with funding from the Humanitarian Aid Department of the European Commission, the shelters were built using this appropriate technology, which was a mix of indigenous knowledge and limited scientific inputs to make it further resilient in the face of new threats (Figures 3a & 3b). Village Development Committees (VDCs) were formed in each village to make decisions and to guide and monitor the construction process. The VDCs comprised of men, women, local leaders, school teachers, NGO representatives and project team personnel working closely with local government officials. The traditional circular designs and the 'breathing' thatch roofs were retained. An efficient system was established to mass-produce the SCEBs very quickly to provide housing to the affected families in a span of six months. The house-owning families mainly did the construction with limited support from the project team. The knowledge and skills were left with local construction workers so that they can be replicated and scaled up in the region. Upon completion, local families preferred these traditional structures far more than the modern concrete technology based houses provided by other sources, which turned into ovens under the scorching desert sun.



Figure 3. The traditional dhani



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Cover: A beneficiary standing in her shelter being constructed under the Barmer Aashray Yojana. Barmer was the worst affected district during the 2006 floods in Rajasthan. SEEDS has intervened to construct 300 intermediate shelters for the most marginalised and socially excluded families.