

Stemming the Tide

*Relief, Reconstruction and
Development in Coastal
Andhra Pradesh*

AKDN

AGA KHAN DEVELOPMENT NETWORK





The devastating earthquake and tsunami that struck South and South East Asia and East Africa on December 26, 2004 was a disaster on a global scale. Claiming close to 200,000 lives, the tsunami's toll on the populations of coastal areas was incalculable, wiping out homes, livelihoods and infrastructure.

In India, cyclones are also a major source of destruction. Some 5,700 kilometres of coastline are prone to cyclones. Krishna district of Andhra Pradesh, jutting into the Bay of Bengal is one such area. Here, the Krishna River splits into a small delta of low-lying islands separated by creeks that attract fresh and saltwater fish -- sustaining thousands of fishing communities and nourishing a diverse marine and coastal life. For generations, the communities that inhabit this area have known of the rich biodiversity of their environment and have sought to preserve it.

The delicate balance of land and water is disrupted every year during periods between May to December, when heavy rains and violent whirling windstorms strike the region. Flooding carries away fishnets and livestock, damages boats and homes and contaminates drinking water. Destruction of the natural environment has eroded the ability of families living in extreme poverty to improve their living conditions. Lack of education and healthcare, low social status and poor infrastructure compound this situation creating conditions that quickly turn natural hazards into disasters.

In the wake of the tsunami, Canadians rallied to the assistance of those who had been affected. The Canadian International Development Agency (CIDA) and FOCUS Canada mobilized funds to support relief, but also to create a foundation for sustainable rehabilitation among 15 particularly vulnerable communities in the tsunami affected area.

The aim of the three-year Andhra Pradesh Relief to Development (APR2D) project was to improve the capacity of target communities to better manage in times of disaster. It built on an earlier relief effort, funded by CIDA and the European Commission Humanitarian Office (ECHO) to restore the livelihoods of affected communities in the immediate aftermath of the tsunami.

To set in motion a process that would sustain a short-term project, the AKDN drew on guiding principles developed from its experiences of projects in disaster reconstruction and more comprehensive development programs: high-quality community-based interventions, working on multiple fronts, and fostering linkages with strong institutional partners.

At the core of the project's disaster management and mitigation strategy was the creation of empowered and highly motivated community-based organizations; their participation was critical in shaping and implementing initiatives that would best serve the needs of the vulnerable, particularly women and children.

Several AKDN agencies, including Focus Humanitarian Assistance, Aga Khan Planning and Building Services and Aga Khan Foundation, collaborated on this project, each bringing expertise and experience to bear on the challenges of working in a remote and resource-challenged area.



Resilient Communities



Ms. Salomi (right) is a member of the Zinkapalem Community Emergency Response Team. Women's input has been invaluable in shaping disaster management plans.

Families in the Krishna district of Andhra Pradesh live with the certainty that the annual cyclone season will bring some kind of suffering and loss. The question is, how much? Will drinking water be contaminated, farmland flooded with seawater, nets and boats damaged, thatch homes torn apart by wind and rain? The 2004 tsunami revealed the full extent of the district's vulnerability to extreme storms.

While the state of Andhra Pradesh is part of a sophisticated cyclone warning system, because of their isolation the communities of

Krishna district typically relied on intuition or word of mouth to warn them of a coming storm. Even then, they had little ability to protect themselves, and often had no safe place to take shelter.

"We had no warning of the tsunami," said Mr. Sita Ramaiah, of Nachugunta village, a particularly remote island community. "It took our boats and nets." Mr. Ramaiah could not fish for one year, so he and his wife abandoned their village and migrated 300 kilometres away to work as agricultural labourers. "There were only children and elderly people left behind here."



At the shore base shelter in Zinkapalem, local fishermen repair their nets. During a cyclone they will use the shelter to store equipment and tether boats.

Disaster Preparedness

- 356 community members trained in basic disaster preparedness, and 34 members able to provide advanced training in search and rescue, first aid, early warning, psycho-social care, as well as management of emergency stockpiles, relief camps and cyclone shelters.
- Disaster management plans handed over to communities and ratified by Panchayats, village-level government.
- Early warning systems installed, which include VHF radio, public address systems, and the INSTAXX computer application used by government to communicate in an emergency.
- Cyclone shelters (3), shore-based shelters (2) and a 5.75 km evacuation road built to withstand extreme weather.



Volunteers in Nali conduct a mock rescue to maintain their disaster management skills.

The AKDN proposed a multi-faceted strategy to improve the disaster resilience of 15 target communities – about 15,000 people. Before work could begin, the input of the communities was vital in helping to implement the project and ensuring that it would be relevant and sustainable.

In some villages elders were skeptical of the community-led approach. Typically, aid has come in the form of handouts, such as food or fishing nets. Rarely were villagers consulted beforehand, or asked to contribute time or labour, let alone to work across gender or caste lines. It took a creative approach to convince community members that an inclusive and participatory approach was necessary to achieve the project's objectives.

In Pathaupkali village a youth group prepared a play depicting how the community could save lives and livelihoods if all villagers were properly trained in disaster preparedness. It was a hit.

“The show purified our hearts,” said Mr. K. Babu Rao, an elder. “We now understand the importance of lessons and training.”

Similar plays were staged in all 15 villages and stressed messages of inclusion and collaboration.

“The play not only mobilized our community but also increased women’s participation in disaster mitigation activities,” said Ms. V. Bimala of Gullalamoda village.

It proved to be a turning point. Village development committees, which include village elders, youth and women, were formed to draft disaster management plans and recruit volunteers to support all aspects of the plan. With community participation, new cyclone shelters and water distribution systems were constructed, emergency stockpiles created, and an education initiative focusing on health and hygiene implemented.

The combination of volunteers trained in disaster management and new infrastructure, including an effective emergency warning system, has created a safety net, ensuring that when the next cyclone comes, as it surely will, families will not be left to stem the tide without the necessary resources.

Healthy Communities



Women collect water for domestic use at a restored pond. Fencing protects the pond from contamination by animals and prevents children from playing in the water.

After the deadly waves of the 2004 tsunami receded, many coastal communities in Krishna district had to contend with contaminated drinking water, due to a lack of sanitation facilities and unprotected water sources.

On the edge of Kammanamolu village a small settlement of Yannadi families live on a low-lying patch of land sandwiched between a creek and rice paddies. The families earn a meager living fishing for crab and labouring in nearby fields. A nomadic community, their migrating tradition is coming to an end.

A government-run housing program is slowly replacing their thatch huts with two-room cinderblock houses. The new homes come with attached toilets--an unfamiliar improvement.

"My job is to persuade them to use their new toilets," said Mr. Swamulu, a volunteer, who would like to see his community embrace improved health and hygiene practices as part of their new, more settled lifestyle. "Once all the new homes are completed, I expect they will stop using the open area entirely."



Ms. M. Shavitri, in Zinkapalem. Hers was among 353 households where sanitation units were built. Women asked for the units to include a private bathing area.

Health and Sanitation

- *In total 363 new toilets were built in the project area, of which 353 include a bathing area.*
- *A game and other health and hygiene communications materials were created with volunteer assistance.*
- *More than 3,000 families educated on health and hygiene practices.*
- *146 water sources were improved, including feeder channels, rainwater harvesting structures, ponds and wells.*
- *Anganwadi Centres now provide improved health and education support to women and children.*
- *Communities now connected with government health and education programs.*

Mr. K. Swamulu meets with Yannadi women in Kammanmolu. His training has persuaded them to deliver their babies at the local clinic rather than at home.

Across 15 target villages, the APR2D project combined constructing of key sanitation facilities with training volunteers like Mr. Swamulu, who educate their peers about cleanliness, and connect community members with government programs and services. Other volunteers are trained to maintain new water delivery facilities such as wells and ponds.

This strategy has fostered hand washing and other healthy practices, which will help reduce the incidence of preventable disease. Toilet usage among the Yannadi families has gone up 70 percent, according to Mr. Swamulu. While this is a significant achievement, he is equally zealous about improving the overall health of the community, but particularly that of women and young children.

Following his AKDN-supported training, he connected with all pregnant and lactating women in the community, and now conducts regular nutrition and early childhood care workshops with them. "At first the women are shy," he said, "but I sing them a song and they feel more comfortable."

Mr. Swamulu organized a health awareness festival for pregnant mothers to promote regular check ups and deliveries at the primary health centre to reduce the incidence of death in childbirth. It was a success. Its success was reflected in the fact that despite the 13-kilometre taxi ride to the centre over bad roads, all of the mothers subsequently delivered their babies there.

A skilled organizer, Mr. Swamulu also mobilized community members to clean up a contaminated well and to pave the footpath used to link the settlement to the main road.

"There has been a lot of change here," he said. "Earlier we would deal with problems on our own. Now people come and discuss things and work together."

In Kammanamolu, the change in hygiene practices has been so dramatic that the community received a Clean Village award from the government of Andhra Pradesh.



Educated Communities



Pavani (pink) writing on a slate at the Anganwadi Centre in Krishnapuram. Training of teachers has improved attendance and learning outcomes in 12 centres.

The Anganwadi Centre for child and mother care in Gullalamoda village is also a vibrant pre-school. Young children sit in a circle on the veranda as their teacher, Ms. Kosuraj Komali, sings them an alphabet song. As mothers arrive to pick up their children, she asks them about their family's health. This is not idle conversation, but part of her job.

As the Anganwadi worker, Ms. Komali is a pre-school teacher and a front-line government health-care provider — monitoring children's growth, dispensing vitamins and basic medication to mothers, as well as promoting hygiene, vaccinations and regular check-ups.

From the inception of the APR2D project, the AKDN recognized that in addition to building new sanitation facilities and educating communities about health and hygiene, forging strong links between community members and government health services would be essential, particularly in the aftermath of a disaster, when the risk of illness from waterborne disease is highest. However, most services were inaccessible and community members did not trust them.

Before the APR2D project, Ms. Komali was providing only basic services. "Earlier there was not much focus on pre-school," said Ms. Komali, who has worked in the centre since 2001. "We would do government work, such as collecting statistics."



Following her training with AKES, Ms. Komali was recognized by the government as the best Anganwadi worker in the district.

Mother and Child Education

- *Child-centred teaching introduced in 12 Anganwadi Centres and 1 early childhood centre.*
- *AKES teaching and learning material, as well as training, provided to Anganwadi workers.*
- *Telugu-language manual on child-centered education published for state-wide distribution*
- *Mothers Committees created to support and sustain Anganwadi Centres.*



Children in Krishnapuram play a game designed to instill good personal hygiene habits. The game was developed with input from the communities.

The AKDN collaborated with the Integrated Child Development Scheme (ICDS), a national government program that caters to the health and nutrition needs of women and children from disadvantaged households, to improve health care and health education in 12 Anganwadi Centres, with five of them being turned into model pre-schools.

Anganwadi workers were sent to Hyderabad for advanced training in child-centered learning with Aga Khan Education Service (AKES), which developed teaching and learning materials for the centres. Mothers Committees were formed to help support and sustain the revitalized centres, with each mother depositing five Rupees into a bank account to pay for school supplies. Now, each centre is equipped to function as a pre-school as well as a hub for outreach to mothers and children.

By investing in the quality of the services offered by the Anganwadi worker, particularly those related to teaching, the AKDN has attracted mothers to the centre so they may learn about health and nutrition.

“Now I spend more time on planning and following the curriculum,” said Ms. Komali. She feels her training combined with the transformation in the children have helped to strengthen the bond between the centre and the mothers.

All of the materials developed for the model centres has been handed over to the ICDS to improve the quality of education in other Anganwadi Centres.

Ms. Komali says running the pre-school has increased her workload, but she feels more confident that making this a priority is for the well-being of her community. Her leadership was recently recognized by the ICDS, which named her best Anganwadi worker for the district.

Connected Communities



A new evacuation road, built to withstand heavy rain and flooding, connects remote island villages to a ferry point. The road has made these communities safer and reduced their isolation.

On the afternoon of November 14, 2008 news of the approaching Khai Muk cyclone reached Nagayalanka, the capital of Krishna district. Heavy rains and strong winds were building in the Bay of Bengal. The storm was still 600 kilometres away from the coast of Andhra Pradesh and the sea seemed calm, but within a few hours all 15 villages were putting their new disaster management plans into action.

A cyclone warning was broadcast to villagers over public address systems. Red flags were hoisted along the shore

to warn those fishing. Community Emergency Response Teams identified the most vulnerable and prepared them for evacuation to the cyclone shelters. As families waited out the heavy rain and flooding, children began to grow hungry. Mr. Meelan Prakash Rao, a retired army officer from a nearby town, made a few calls and arranged for emergency food packages to be delivered to the victims.

Mr. Rao is a member of the Rapid Action and Response Team (RART), a group of 17 volunteers recruited under the AKDN project



to help manage disaster plans in target communities and advocate for the communities in an emergency. Thanks to his years in the army, Mr. Rao knows how to mobilize people and supplies in short order.

“Sometimes it is difficult for community members to access higher authorities so the RART can act on their behalf,” said Mr. Rao. Members of the team are mostly retired professionals with experience in disaster management.

RART plays an important intermediary role but the communities have also had to become better advocates for their own needs. Response to the Kai Mukh cyclone demonstrated that communities are well-equipped and trained to help themselves, but it also underscored the importance of strong links to people and institutions who can provide outside help.

As part of the AKDN’s emphasis on strengthening civil society organizations, the Nagayalanka Coastal Resource Centre (CRC), was established as a community-based institution, closely linked to district and local government. It serves as a repository for all project activities and community knowledge of disaster management as well as facilitating dialogue and partnerships. Each community pays 500 Rupees per year to belong to the institution.

CRC members have given a lot of thought to the future of the institution, and envision it becoming a vibrant hub for training, dialogue and the development of new opportunities for livelihoods.

“We’re still in the plantation stage,” said Treasurer Srinivas Rao, from Zinkapalem village. “We want to be a big tree!”

Members have already begun relief and rescue trainings, and are tackling a range of issues from sanitation to maintenance of basic amenities. They have approached government departments and other NGOs to support their aspirations.

“You can see the results in the villages,” said Imandi Suribabu, an official with the Fisheries Department, who sits on the CRC advisory board. “They are working collectively for the good of the community, thanks to this new institution.”



Above: Volunteer Mr. K. Sathyanarayana tests the Emergency Warning System in Gullalamoda, which is connected to the district administration office in Nagayalanka.

Below: Volunteers in Krishnapuram practice grief counselling techniques.



Lessons Learned

Underlying the Andhra Pradesh Relief to Development project was the principle that short-term relief efforts, while necessary in the immediate aftermath of a disaster, are incomplete unless steps are taken to help communities reduce their vulnerability. In the case of the communities of Krishna district, the risks inherent in their isolation were compounded by a lack of adequate infrastructure and knowledge of protection measures in the event of a disaster.

Although the project was short-term, the AKDN relied on principles that have guided it in creating effective long-term development. By taking a multi-input, community-based approach from the outset, the project has helped the communities of Krishna district begin to address the root causes of their vulnerability, such as the risk of water borne disease, when a cyclone strikes, and be better prepared to minimize the destruction.

The AKDN has created several support mechanisms, which will help ensure that disaster preparedness is sustainable.

A constellation of community-based organizations has taken shape, each group made up of trained volunteers with specialized roles and responsibilities for disaster preparedness and response. From these new civil society groups, leaders have emerged, across gender and social classes, many of whom belong to the executive board of the Coastal Resource Centre. With their participation, and the guidance of an advisory board of external stakeholders, the CRC will provide an institutional springboard for community engagement on development initiatives with government, NGOs and potential donors.

Community-based organizations have established new and strengthened links with government and non-government institutions, and have shared the project's learning and achievements with them.

In addition to investing in training, infrastructure and institutions at the community-level, the AKDN worked with government, ensuring that new resources would be adopted and sustained by relevant agencies and knowledge disseminated beyond the target area. Village-based disaster management plans have been shared with and ratified by local government.

New infrastructure projects undertaken by the Aga Khan Planning and Building Services, including cyclone shelters, shore-based shelters, ponds, feeder channels and an island road, sought government input to ensure adherence to standards and regulations. The government is taking over long-term maintenance of new infrastructure.

The three-year time frame created a host of challenges. As a result, the AKDN learned about how its agencies, with their complementary mandates, can work together on a complex,

multi-input project, while maintaining the highest standards of quality. Some key lessons include the following:

- Re-orienting communities from being recipients of goods and services toward being actively involved and becoming leaders is important to move from relief to development. A multi-input approach, with initiatives across sectors, such as health, education and disaster preparedness helps harness community support and commitment, motivate individuals, and build trust.
- Building human capacity and systems contributes to the sustainability of disaster mitigation interventions and establishes a foundation for future community-led development initiatives. For example, improvements to an evacuation road connecting three island villages to the mainland has facilitated plans by another NGO to build housing in Zinkapalem.
- Quality must be the touchstone in implementing every initiative. The project was strengthened by the contributions of multiple AKDN agencies with interconnected mandates and expertise in construction, health, education, community mobilization, and disaster preparedness. Consultants and third-party monitors assessed and improved on interventions, ensuring that gender concerns were integrated into every aspect of the project and that stringent environmental regulations were followed. As a result, the AKDN has demonstrated that high-quality, community-led initiatives are possible even in an environmentally fragile, resource-poor area.
- Working closely with partners ensures that new resources will be readily employed and disseminated, promoting the transfer of knowledge beyond the target communities. Telugu language teaching aids developed for the model Anganwadi Centres have been handed over to the Integrated Child Development Scheme to improve the quality of education in other centres. Government has requested designs for cyclone shelters tailor-made under APR2D for use in other disaster prone communities.
- Being proactive by integrating community-based disaster preparedness with improvements in the built environment in such areas as housing and public buildings will help minimize the impact of disasters on human lives and property.

While it is still early to assess the full impact of the project on the 15 target communities, clearly communities that were once extremely vulnerable in times of disaster and dependent on a tenuous connection to government agencies for help now have the institutions, skills and confidence to strengthen their collective safety and well-being and to be advocates for change that will improve their long-term health and safety.



AGA KHAN FOUNDATION



The Aga Khan Planning and Building Services



FOCUS HUMANITARIAN ASSISTANCE

The Aga Khan Foundation (AKF) is a non-denominational, international development agency established in 1967 by His Highness the Aga Khan. Its mission is to develop and promote creative solutions to problems that impede social development, primarily in Asia and East Africa. AKF, created as a private, non-profit foundation, has branches and independent affiliates in 15 countries.

The Aga Khan Planning and Building Services (AKPBS) works to improve the built environment, particularly housing design and construction, village planning, natural hazard mitigation, environmental sanitation, water supplies, and other living conditions. AKPBS achieves these goals through the provision of material and technical assistance and construction management services for rural and urban areas.

Focus Humanitarian Assistance (FOCUS) is an international group of agencies established in Europe, North America and South Asia to complement the provision of emergency relief, principally in the developing world. Affiliated with the AKDN, it helps people in need reduce their dependence on humanitarian aid and facilitates their transition to sustainable self-reliant, long-term development.

Established and guided by His Highness the Aga Khan, the Aga Khan Development Network (AKDN) is an international group of non-denominational development agencies that undertakes a wide-ranging humanitarian agenda of social, economic and cultural development.

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Photography: Rajendra Shaw

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