

**ANDHRA PRADESH RELIEF TO DEVELOPMENT PROGRAM
(APR2D)**

A Post Tsunami Relief to Development Program

Implemented by

FOCUS Humanitarian Assistance Canada

and

Aga Khan Foundation Canada

END OF PROJECT REVIEW

by

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ANDHRA PRADESH RELIEF TO DEVELOPMENT PROGRAM (APR2D)

END OF PROJECT REVIEW

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TABLE OF CONTENT

	<u>Page</u>
TABLE OF CONTENT	i
ABBREVIATIONS AND ACRONYMS	ii
EXECUTIVE SUMMARY	iii
1. INTRODUCTION	
1.1 Background	01
1.2 Project Period and Scope	01
1.3 Objectives for the End-of Project Review	03
1.4 Sources of Information	04
1.5 Focus and Scope of the Review	04
2. ACHIEVEMENT OF RESULTS	
2.1 General	05
2.2 Output Results	05
2.3 Outcome Results	17
2.4 Unintended Results	22
3. CROSS-CUTTING THEMES	
3.1 Gender Mainstreaming	23
3.2 Environmental Considerations	23
3.3 Capacity Development	23
4. RELEVANCE	24
5. SUSTAINABILITY OF RESULTS	24
6. MANAGEMENT CHALLENGES	27
7. LESSONS LEARNED	27
8. OVERALL OBSERVATION AND CONCLUSIONS	28
APPENDIX – A: Terms of Reference	
APPENDIX – B: Field Meetings	

ABBREVIATIONS AND ACCONYMS

AKDN	Aga Khan Development Network
AKESI	Aga Khan Education Service India
AKF	Aga Khan Foundation
AKFC	Aga Khan Foundation Canada
AKFI	Aga Khan Foundation India
AKPBS	Aga Khan Planning and Building Service
AKPBS-I	Aga Khan Planning and Building Service India
ANS	Academy of Nursing Studies, Hyderabad
APR2D	Andhra Pradesh Relief to Development Project (This Project)
AWC	<i>Angan Wadi</i> Centre
AWP	Annual Work Plan
AWW	<i>Angan Wadi</i> Worker
BCC	Behaviour Change Communication
CBO	Community Based Organization
CERT	Community Emergency Response Team
CIDA	Canadian International Development Agency
CRC	Coastal Resource Centre
DDF	Deputy Director of Fisheries
DEU	District Emergency Unit
DIO	District Informatics Officer
DMP	Disaster Management Plan
DRO	District Revenue Officer
DPR	Department of Panchayeti Raj
ECHO	Humanitarian Aid Department of the European Commission
EE	Executive Engineer
EIA	Environmental Impact Assessment
EWS	Early Warning System
EWT	Emergency Water Treatment
FGD	Focus Group Discussion
FOCUS-C	Focus Humanitarian Assistance Canada
FOCUS-I	Focus Humanitarian Assistance India
FI	FOCUS India (Focus Humanitarian Assistance India)
GO	Government Organization
ICDS	Integrated Child Development Scheme
IKP	Indira Kranti Padakam
LFA	Logical Framework Analysis
MOU	Memorandum of Understanding
MRO	<i>Mandal</i> Revenue Officer
NCRC	<i>Nagayalanka</i> Coastal Resource Centre
NGO	Non Governmental Organization
PA	Public Address systems
PHC	Primary Health Centres
PI	Performance Indicator
PRED	Panchayeti Raj Engineering Department
RART	Rapid Assessment and Response Team
RRWHS	Roof Rainwater Harvesting Structures
TLM	Teaching and Learning Material
TOR	Terms of Reference
VCCTC	Voluntary Confidential Counselling and Testing Center
VDC	Village Development Committee
VHF	Very High Frequency

ANDHRA PRADESSH RELIEF TO DEVELOPMENT PROGRAM (APR2D)

END OF PROJECT REVIEW

EXECUTIVE SUMMARY

Background

The Indian Ocean Tsunami devastated 301 Villages along the 1030 kilometre of Andhra Pradesh coastline along with other South Indian states further down on the east coast. Krishna District was one of the worst affected areas in the State of Andhra Pradesh. The Aga Khan Development Network (AKDN) through its affiliate Focus Humanitarian Assistance India (FOCUS-I) delivered prompt relief and aid to individuals and families affected by the Tsunami in two sub-districts of Krishna District – Machilipatnam and Nagayalanka. These included emergency response and rehabilitation and restoration of livelihoods of Tsunami-affected families. To build on these efforts, Focus Humanitarian Assistance Canada (FOCUS-C), with financial contribution from the Canadian International Development Agency (CIDA), launched the Andhra Pradesh Relief to Development (APR2D) Project which aims at *enhancing the state of disaster resilience and preparedness among coastal communities affected by the Tsunami*. The Project, which started on April 2006 and ends on 31 March 2009, is being implemented in 15 villages in Nagayalanka Mandal of Krishna District in Andhra Pradesh and the beneficiaries are expected to be 14,784 individuals in 4,091 households.

Objective and Results

The project objective is to *enhance the capacity of communities in disaster preparedness, mitigation, prevention and response*.

To achieve this objective the project is designed to produce the following three results:

- Enhanced disaster management and preparedness capacities of communities and community based organizations (CBOs)
- Reduced vulnerability of men and women to health and hygiene risks in preparation for a disaster
- Improved institutional linkages and knowledge sharing of program learning and achievements

Findings

The project has worked in 15 villages and carried out a number of activities to achieve these results. The villages and the activities are indicated in the table below.

List of Villages and Activities

#	Village	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Island Villages																	
1	Edurumondi						•	•		•	•				•	•	•
2	Zinkapalem	•		•	•	•		•		•	•	•	•	•	•	•	•
3	Gollamanda					•					•				•	•	
4	Yesupuram					•	•	•		•	•				•	•	•
5	Bodduvarimula			•	•	•				•	•				•	•	
6	Krishnapuram					•				•	•				•		
7	Nachugunta	•	•	•	•	•				•	•		•	•	•	•	•
8	Elachetladibba														•	•	•

Mainland Villages																	
9	Kammanamolu	●				●	●	●		●	●				●	●	●
10	Nali	●				●				●	●				●	●	●
11	Sanghameswaram		●	●	●	●				●	●				●	●	●
12	Pathaupakali	●				●				●	●		●		●	●	
13	Kothaupakali					●			●	●					●	●	
14	Sorlagondi					●	●			●	●				●	●	●
15	Gullalamoda					●	●	●		●	●				●	●	●

● Project Activities in Villages:
 1. Feeder Channel for Pond; 2. Installation of Robust Filter System; 3. Fencing around Pond; 4. Lining of Ponds; 5. Water Tap Platform; 6. Hand Pump Platform; 7. Well Covering; 8. Water Distribution System (Pipeline); 9. RRWHS-Roof Rainwater Harvesting Structure; 10. Sanitary Latrine Unit; 11. Road (5.75 Km); 12. Cyclone Shelter; 13. Shore-based shelter; 14. Early Warning System (EWS)¹; 15. Stockpiles²; 16. Teaching & Learning Material (TLM) and Pre-school Syllabus for Angan Wadi Centre (AWC)³

The project generally has produced the abovementioned results. The results and the sustainability plans are as follows:

Result 1: Enhanced disaster management and preparedness capacities of communities and community based organizations (CBOs)

A number of community based organizations were formed in the 15 project villages and their capacity on disaster management was built through training. Following are the CBOs that were formed by the project:

- Village Development Committees (VDC) in each village
- Community Emergency Response Teams (CERT) in each village
- Youth Groups in each village
- Construction Committees in each village
- Rapid Assessment and Response Team (RART) – one regional

The Disaster Management Plans for all the 15 villages were developed together by the community and Community Emergency Response Team (CERT) members. The Village Development Committee’s (VDC) President and CERT Coordinator were actively involved in the preparation of the DM plans. Out of the 15 plans 4 plans even ratified by the Gram Panchayat. The community is oriented about updating the plans regularly and all the DM plans were subsequently updated. The plans indicate who will be responsible for regular updates. All 15 DM plans are reviewed with the Coastal Resource Centres (CRC). Copies of the DM Plans are filed at the CRC office.

All CERT members (356) have undergone basic and specialised training. A team of 30 CERT members have been selected to become master trainers in each of the specialized areas. The master trainers are now providing replication training (post follow up training) to CERT and other community members. This team of master trainers has been linked to the CRC and local Government authorities. 4 members are part of the CRC Executive. CERT members have participated in Disaster mock drills and will continue the practise on an on-going basis. All CERT members have been trained on disaster response and some have even received specialized training. They will continue to receive ongoing support from the master trainers. Mock drills and follow up sessions will continue with the assistance from the master trainers. VDC members are actively involved in the process.

¹ In addition to 15 villages, Early Warning System (EWS) is also placed in the District Collectorate in Machelipatnam and MRO’s office in Nagayalanka

² In addition to 15 villages, one regional stockpile has been placed in Nagayalanka

³ In addition to TLM, Health Awareness Material (containing posters, stickers, games etc. that will help health volunteers to spread awareness among the community) have been placed in the AWC.

CERT members trained in the use and maintenance of local stock piles. User manuals in local dialect developed and also are available at the stockpile storage site. Community members are trained in how to use these stocked items. Guidelines are available at the storage site for further reference. MOU for the maintenance and upkeep signed between community members, NCRC and Panchayat Raj and FOCUS India (FI)

All RART members (17) have received training. For the future, they are linked to the Mandal Revenue office and NCRC.

As per an agreement between District Administration and FOCUS India the EWS has been purchased through the District Collector's office. FOCUS India is responsible for the initial purchase, whereas the Collector's office is responsible for supervising the installation and for maintaining the system in future. As per the agreement. District Administration will be responsible for further maintenance of EWS equipment.

The 5.75 Km evacuation road has been built in cooperation with the local government or district administration. Government has managed the construction of the road with technical inputs from AKPBS, and provided a financial contribution. The contractual agreement with government includes their ownership and regular up-keep of road in future.

Three cyclone shelters built by the project are critical infrastructure assets which would be handed over to Panchayati Raj Department as per agreed MOU. Regular upkeep and maintenance would be ensured by the Construction Committee that has been established by the project. The utilization of the asset for alternative uses during periods of normalcy would also add to regular upkeep and maintenance of the structure.

The two shore based shelters built by the project would be handed over to Panchayati Raj Department as per agreed MOU. Regular upkeep and maintenance would be ensured by the user groups (fishermen's group)

Construction of 5 Feeder Channels was undertaken in complete partnership with respective village communities. Feeder Channels would be handed over to village Panchayat and will be registered in Panchayat's books of Asset. The village construction committee was trained for regular upkeep and maintenance.

The two Robust Water Filters built by the project are registered under Panchayat's books of asset, regular upkeep and monitoring would be prime responsibility of the village construction committee.

Construction of fencing and lining of 4 ponds have been undertaken with complete partnership with respective village communities. These would be handed over to village Panchayat and will be registered in Panchayat's books of Asset. Construction committee has been trained for regular upkeep and maintenance.

A Water Distribution System built by the project would be handed over to village Panchayat and registered in Panchayat's books of Asset.

The project has improved 99 tap/hand pump platform and these would be handed over to village Panchayat and would be registered in Panchayat's books of Asset. Village construction committees have been trained for regular upkeep and maintenance.

Ten fresh water well covers constructed by the project were handed over and registered in Panchayat's books of Asset. Construction committees have been trained for regular upkeep and maintenance.

Twenty eight roof rain water harvesting structures were handed over to village Panchayat and are registered in Panchayat's books of Asset. Village construction committees were trained for regular upkeep and maintenance.

Result 2: Reduced vulnerability of men and women to health and hygiene risks in preparation for a disaster

Sanitation Units (363) have been handed over to individual families after orientation on maintenance and usage.

APR2D Project trained health volunteers on health and hygiene - 11 Health Volunteers (HVs) under ASHA-RCH-II⁴ are appointed in government (DM&HO, IKP) as Community Health Volunteers- to serve in this region and are linked to the local PHC. Seven (7) HVs have been supported under Health and Nutrition Programme implemented and follow up by IKP

After training of villagers on good health and hygiene practices by the trainees they were linked up to CRC, IKP and Rural Water Supply (RWS).

Three (3) trainings on Behaviour Change Communication were given to 28 volunteers. Ten (10) best BCC trainers were linked up with CRC. BCC volunteers linked up with RWS and IKP. BCC materials have been provided to 2 primary health care centres (PHCs), 1 Community Health Centre and other local institutions, such as the Panchayat and other public offices. The remaining BCC materials were handed over to CRC.

Teaching and learning materials (TLM) were provided to 12 Anganwadi centres. These TLM were handed over to ICDS. Linkages were established for future with CRC and ICDS.

Five (5) of the seven (7) Anganwadi centres have been set up as model Anganwadi centres. Linkages with ICDS was establishes for future operations. Teacher's manual in local language has been produced. This was handed over to ICDS and they will implement it in all centres

To conduct health camps in the future, linkages were established with the Primary Health Centres (PHC).

Result 3: Improved institutional linkages and knowledge sharing of program learning and achievements

APR2D has improved intuitional linkages at the community, sub-district and district levels. Throughout the design and implementation phase of the project, strong institutional linkages with government and civil society organizations have been established.

The Coastal Resource Centre was registered as 'Nagayalanka Coastal Resource Centre' under the Societies Registration Act. NCRC is the first community based organisation for management of disasters at *Mandal* level in the State of Andhra Pradesh

Lessons Learned:

- Third party monitoring (external) of the project activities should be done because there in an advantage in suggestions by a third party. It strengthens the project. Personnel who are implementing the project will have a rationale for the gaps and short cuts. It will be easy for them to justify the gaps and carry on with it. External monitoring is good with respect to project transparency as well. APR2D retained a monitor for the civil work.

⁴ (One of the key components of the National Rural Health Mission is to provide every village in the country with a trained female community health activist – 'ASHA' or Accredited Social Health Activist. Selected from the village itself and accountable to it, the ASHA will be trained to work as an interface between the community and the public health system.)

- An interlinked multi-sector project is possible to implement and gives the recipient a complete project.
- If the project area is difficult to access, one should seriously take more time and resources during design.
- All the relevant government line departments should be involved in the Program. This will help in establishing linkages between the villagers and the line departments.
- It was a challenge to involve women equally at the grassroots level. This delayed the project implementation.
- Cooperation with government is a time consuming but essential process, particularly critical for the long term maintenance and management of infrastructure and disaster management systems. Slow government systems and processes can present challenges for time-bound donor funded projects.
- When the Government is in charge of construction quality control of construction could be a problem
- A high official in the Executing Agency should be involved to deal with a higher level officer in the Government. It takes time to make rapport with a new government officer.
- Coordinating all the trainees in a training program is difficult in a situation while dealing with migratory villagers.
- Synergy between multiple agencies working together in implementing a project is important for smooth implementation of the project.

Conclusion:

With the above findings, according to the consultant, the APR2D project was very well implemented. All the outputs and outcomes have been produced. The government, at all levels, is very supportive of the project and indicated they will continue to support the villages and maintain the items which have been handed over to them.

ANDHRA PRADESSH RELIEF TO DEVELOPMENT PROGRAM (APR2D)

END OF PROJECT REVIEW

by
P. Tota Gangopadhyay

FINAL REPORT

1. INTRODUCTION

1.1 Background

December 26, 2008 marks four years since the Indian Ocean Tsunami devastated several Asian countries with unprecedented force. One such country was India and 301 Villages along the 1030 kilometre of Andhra Pradesh coastline were affected along with other South Indian states further down on the east coast. Krishna District was one of the worst affected areas in the State of Andhra Pradesh. The Aga Khan Development Network (AKDN) through its affiliate Focus Humanitarian Assistance India (FOCUS-I) delivered prompt relief and aid to individuals and families affected by the Tsunami in two Mandals (sub-districts) of Krishna District – Machilipatnam and Nagayalanka. Following an emergency response phase, the Aga Khan Foundation (AKF) received a one year grant from the Humanitarian Aid Department of the European Commission (ECHO) for rehabilitation initiatives focusing on restoring livelihoods of 2,813 Tsunami-affected families and strengthening capacity of communities to access relief and assistance at all times of emergency. Funds were also received from the Canadian International Development Agency (CIDA - local initiatives) for addressing short term livelihood restoration needs. To build on these efforts, Focus Humanitarian Assistance Canada (FOCUS-C) received another financial contribution from CIDA and launched the Andhra Pradesh Relief to Development (APR2D) Project (this project).

1.2. The Project

APR2D is a three year, multi-agency project which aims at *enhancing the state of disaster resilience and preparedness among coastal communities affected by the Tsunami*. The purpose or the objective of the project is *to enhance the capacity of communities in disaster preparedness, mitigation, prevention and response*.

To achieve the abovementioned objective the Project was designed to have three interrelated components as follows:

- Capacity development of communities in disaster management and preparedness;
- Reducing the vulnerability of the population to health and hygiene risks in preparation for disaster, and
- Improving the institutional linkages.

Following are the activities that were carried out under each component;

Capacity development in disaster management:

- Formation of a number of Community Based Organizations (CBO) and building their capacity for disaster management through training;
- Assisting in the preparation of the disaster management plans (DMP) for each village. These DMPs were to be prepared and updated by the communities and are to be ratified by the local governments (village and the State)
- A Rapid Assessment and Response Team was formed on regional basis and trained to manage disasters.

- A major problem during the Tsunami was the lack of early warning systems and communications to villagers of the impending disaster. An Early Warning System was established with a radio transmitter located at the district headquarters in Machilipatnam for transmitting cyclone or storm warnings to Mandal Revenue Officer's (MRO) office in Nagaylanka from where it is relayed to each village where this information is disseminated through a Public Address (PA) system. A number of people from the villages, District Headquarters and MRO's office were trained to operate and maintain the system
- Stockpiles of non-food items are essential components when responding to disasters. These stockpiles were established in all the project villages.
- During disasters, availability of fresh water is a major challenge. A typical emergency solution is the use of water treatment equipment to purify surface water that might be available in the area. The Project built capacity to respond to future disasters by acquiring water quality testing equipment, and portable water treatment equipment.
- The project ensured that each member of the communities is knowledgeable about disasters and how to respond to them
- A 5.75 Km stretch of road was built to connect the most vulnerable village in the Island to the ferry point
- Cyclone Shelters (3) and shore-based shelters (2) were constructed for temporary and immediate evacuation of village residents and for the safety of fishing assets respectively.
- Due to salt water intrusion in the water supply system of some of the villages, rainwater harvesting systems (RHS) have been installed in pre-identified school buildings, *Angan Wadi* Centres (AWC). Cyclone and shore-based centres. The water collected from the RHS then pass through a filter system to make it potable. The water is stored in an adjacent tank for storage from which it is pumped with a hand pump for drinking.
- In some of the villages the existing ponds experienced saltwater intrusion from the bottom and the sides. These ponds were made safer by raising the embankments, paving/lining the sides and sealing the bed with a clay layer. Generally the inlets to these ponds are the irrigation Feeder Channels and the outlet puts the water in a filter system to make the water potable which is stored and pumped with a hand pump.

Reducing vulnerability of health and hygiene risks:

- The project completed improved sanitation infrastructure, including construction work, meeting physical targets and ensuring adherence to environmental standards.
- The project also planned to promote public health awareness. The key outcomes include increased access to water supply, access/use of sanitation facilities and improved knowledge, attitudes and practice regarding hygiene.
- Health needs of specific groups (through strengthened support services) were looked after. Attention was paid to the nutritional and immunization status of children 0-6, early childhood care and education and safe pre/post natal and delivery practices.
- Information, Education and Communication (IEC) to change behaviour of the villagers with respect to general health and hygiene issues.

Institutional Linkages:

- A **Coastal Resource Center** (CRC) has been established which will serve as an information and knowledge resource center, particularly for disaster management
- The project has established effective linkages at various levels and with different stakeholders for ensuring capacity building, collaboration and knowledge enhancement. Major stakeholders include communities, Panchayati Raj institutions, government departments and civil society.

The project started on April 2006 and ends on 31 March 2009. It is being implemented in 15 villages in Nagayalanka Mandal of Krishna District in Andhra Pradesh and the beneficiaries are expected to be 14,784 individuals in 4,091 households. Seven of the 15 villages are located on the mainland and the remaining eight villages are on Edurumondi Island. The list of villages, their locations (mainland or island) and the activities undertaken for them are given in Table 1.1.

Table 1.1 List of Villages and Activities

#	Village	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Island Villages																	
1	Edurumondi						•	•		•	•				•	•	•
2	Zinkapalem	•		•	•	•		•		•	•	•	•	•	•	•	•
3	Gollamanda					•					•				•	•	
4	Yesupuram					•	•	•		•	•				•	•	•
5	Bodduvarimula			•	•	•				•	•				•	•	
6	Krishnapuram					•				•	•				•		
7	Nachugunta	•	•	•	•	•				•	•		•	•	•	•	•
8	Elachetladibba														•	•	•
Mainland Villages																	
9	Kammanamolu	•				•	•	•		•	•				•	•	•
10	Nali	•				•				•	•				•	•	•
11	Sanghameswaram		•	•	•	•				•	•				•	•	•
12	Pathaupakali	•				•				•	•		•		•	•	
13	Kothaupakali					•			•	•	•				•	•	
14	Sorlagondi					•	•			•	•				•	•	•
15	Gullalamoda					•	•	•		•	•				•	•	•
<p>• Project Activities in Villages: 1. Feeder Channel for Pond; 2. Installation of Robust Filter System; 3. Fencing around Pond; 4. Lining of Ponds; 5. Water Tap Platform; 6. Hand Pump Platform; 7. Well Covering; 8. Water Distribution System (Pipeline); 9. RRWHS-Roof Rainwater Harvesting Structure; 10. Sanitary Latrine Unit; 11. Road (5.75 Km); 12. Cyclone Shelter; 13. Shore-based shelter; 14. Early Warning System (EWS)⁵; 15. Stockpiles⁶; 16. Teaching & Learning Material (TLM) and Pre-school Syllabus for Angan Wadi Centre (AWC)⁷</p>																	

1.3 Objectives for the End-of-Project Review

The objective of the End of Project Review was to identify, consolidate and document:

- the project results at the activity, output, outcome and, where possible, impact levels;
- the lessons from the project related to programming approaches, and
- the lessons related to project management.

This end of project review was planned in the original work plan for the project. The reasons for this review is to consolidate and document results and identify lessons learned on program approaches and project implementation as the APR2D project enters the final months of project completion. This includes:

- Reviewing and consolidation of results of the program based on program activities as well as outcome results and output results.
- Assessment of the project performance on cross-cutting themes of gender, environment and capacity development
- Reviewing and assessment of the management of the project.
- Where possible, identifying lessons from the approach to community preparedness, disaster reconstruction for broader AKDN learning.

⁵ In addition to 15 villages, Early Warning System (EWS) is also placed in the District Collectorate in Machelipatnam and MRO's office in Nagayalanka

⁶ In addition to 15 villages, one regional stockpile has been placed in Nagayalanka

⁷ In addition to TLM, Health Awareness Material (containing posters, stickers, games etc. that will help health volunteers to spread awareness among the community) have been placed in the AWC.

1.4 Sources of Information

The Consultant initially did a desk review of the background documents and the data had been taken mainly from the last (April – September 2008) semi-annual progress report and the APR2D Project Completion Tables #2 and #3 that gives the progress to December 2008. A Draft Report on the Project Results was prepared and was circulated to the field as well as to the AKFC (this was required by the contract signed between AKFC and the Consultant). This information was supplemented by and some gaps were filled by field personnel before the field trip by the Consultant took place. The Consultant validated this data in the field.

During the field visit, the consultant visited 9 out of 15 project villages, the Nagayalanka Coastal Resource Centre (NCRC), and Mandal Revenue Officer's (MRO) office in Nagayalanka. In Machilipatanam he met with the District Revenue Officer (DRO), District Informatics Officer (DIO), and the Deputy Director of Fisheries (DDF). He could not meet the Executive Engineer (EE) of the Panchayati Raj Engineering Department (PRED) as planned because the EE was busy with the Chief Engineer with a concurrent World Bank Mission and could not make it to the meeting. He also met with a Senior Project Officer of Integrated Child Development Scheme (ICDS) in Vijayawada. In addition, he met with all the project staff at the AKDN office in Avanigadda and in the field.

The Consultant saw some of the AWCs where pre-schooling is held by the project and a non-project AWC for comparison. He went in some village houses to meet with the villagers and see the sanitation units that the project has put in. He saw some water tap and hand-pump platforms, feeder channels, ponds where lining and fence were provided, Robust Filter Systems, well coverings and the roof rainwater harvesting structures that was provided by the project. He drove through the 5.75 Km road that has been constructed by the project and saw the water distribution system, cyclone shelters, shore based shelters, village and regional stockpiles, the Early Warning Systems in the Villages, in Nagayalanka and in Machhilipatanam as well as the Coastal Resource Centre in Nagayalanka.

He had Focus Group Discussions (FGD) with:

- *Angan Wadi* Workers
- Mothers' Committee
- Health/BCC volunteers
- Village Development Committee
- Construction Committee
- Beneficiaries
- CERT Members
- Resource Pool Members
- NCRC Members
- RART Members
- Advisory Board of NCRC

1.5 Scope and Focus of the Review

The scope and focus of this end-of-project review generally followed the scope and focus outlined in the Terms of Reference (TOR) given to the Consultant which is included as Appendix A with this Report. The Report also follows that format.

2. ACHIEVEMENT OF RESULTS

2.1 General

As the Project is implemented the results at the output level are produced first since these are the results of the project activities. The results at the output level will collectively produce the outcome level results which indicate that the project objective (the Project Purpose in the LFA) has been achieved. The impact level results are produced only after the Project has been implemented, immediately after or sometime at a later date only when the higher level Project Objective (the Project Goal in the LFA) has been achieved. Most logically, therefore, the analysis of the achievement of results starts from the Output level.

Following is a Results Matrix, showing the expected results at Impact, Outcome and Output levels, prepared from the LFA of the project supplied with the draft terms of reference of the assignment.

Exhibit 1: Results Matrix

IMPACT					
Increased disaster resilience among communities affected by the Tsunami					
OUTCOME					
1. Enhanced disaster management and preparedness capacities of communities and community based organizations (CBOs)		2. Reduced vulnerability of men and women to health and hygiene risks in preparation for a disaster,		3. Improved institutional linkages and knowledge sharing of program learnings and achievements.	
OUTPUTS					
1.1 Formation and operationalization of CBOs and institutions to improve community's disaster preparedness (CERTs, youth groups, VDCs, RARTs)	1.2 Improved and strengthened community preparedness through increased access to infrastructure and equipment/supplies	2.1 Improved water and sanitation infrastructure/facilities	2.2 Strengthened support services for women and children	2.3 Improved awareness of health/hygiene practices	3.1 Increased awareness on disaster preparedness and risk management for target communities, local government and development community

2.2 Output Results

Output Result 1.1: Formation and operationalization of CBOs and institutions to improve community's disaster preparedness (CERTs, youth groups, VDCs, RARTs)

PI⁸ 1.1.1 Number of groups formed for onset of a disaster, including percentage of women members

⁸ Performance Indicator

APR2D has supported the formation of community based organizations (CBOs) to help prepare communities for the onset of a disaster. Over the life of the project, the CBOs formed and gender disaggregated data on representation is summarized in the Table below.

Table 2.1 Community Based Organizations Constituted and Capacities Built

Type of CBO	Description/Role	Number Formed	Total Members	Members (Male)	Members (Female)	% of women members
Village Development Committee (VDC)	A village committee was formed in communities as a mechanism for dialogue and consultation with the community as well as to organize community participation in local project implementation. It had also been involved monitoring, management and follow up of project activities	15	228	128	100	44
Community Emergency Response Team (CERT)	A village level organization responsible for responding to natural and human-made disasters, such as through search and rescue, management of stockpiles and other emergency response activities	15	356	257	99	27
Youth Groups ⁹	A group of youth volunteers with responsibilities for disaster management and community outreach	15	384	248	136	35
Construction Committees	Village level committees trained to monitor, maintain, and in some cases implement, construction components of the APR2D	14 ¹⁰	73	45	28	38
Rapid Assessment and Response Team (RART)	A committee comprised of representatives from government, NGOs, police, retired service men, and the fire department and headed by the Mandal Revenue Officer in Nagayalanka with responsibilities for	1	17	13	4	23.5

⁹ It is the Consultant's understanding that initially these Youth Groups were formed in each village to mobilize villagers but eventually most of the members have been included in the CERT and, therefore, the Youth Groups are not functioning any more.

¹⁰ The Village of Elachetladibba do not have a construction committee because another NGO adopted the village for total construction and no civil works were implemented under APR2D under the project.

	preparing and managing pre-disaster activities across villages					
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PI 1.1.2 Number of groups prepared for onset of disaster

The number and type of groups formed are given in Table 2.1. On the onset of a disaster these groups will disseminate warning information to co-villagers, carry out search and rescue operations, provide first aid and psychosocial support to survivors, and carry out shelter planning, as well as management and assessment of health and hygiene situation and needs.

All the 356 members of the 15 CERT groups have been given basic training while most of them opted to be further trained in Early Warning System (EWS), Psycho-Social Care, Search and Rescue, First Aid and Relief Camp Management. Select members are represented on the Resource Pool-which conducts refresher/ advanced trainings in the project villages and basic trainings in non project villages.

Table 2.2 Number of Villagers (Men and Women) Trained by the Project

Details	Basic	Advanced					
	CERT	Early Warning Systems	Psycho Social Care	Search & Rescue	First aid	Relief Camp Management	Resource pool
Female	99	29	30	05	15	07	11
Male	257	38	30	54	37	65	19
Total	356	67	60	59	52	73	30

There is a CERT Coordination Group of 30 members. They manage the CERT in 15 villages. Some of them, who are also a part of the Coastal Resource Centre, have also undergone through some management training (such as accounting, book & record keeping etc.), and liaise with other NGOs.

A Resource Pool of 30 members have been created out of the above trained CERT members as community experts to train others, e.g. refreshers training and organize basic training in non-project areas.

In addition, at regional level, there is a Rapid Assessment and Response Team (RART) of 17 members (government functionaries and social workers). RART is responsible for relief & response as well as shelters at the sub-district level.

Disaster Management (DM) Plans were prepared for all the 15 villages and these were ratified by the government. The VDC and the CERT members in the villages were trained to constantly update the DM Plan.

Output Result 1.2: Improved and strengthened community preparedness through increased access to infrastructure and equipment/supplies

PI 1.2.1: Number and type of infrastructure constructed and number of people (f/m) with access to or using infrastructure (e.g. roads, cyclone and shore-based shelters)

In Krishna district (population 4.2 million spread over an area of 8,727 square kms), the super cyclone in 1977 claimed the lives of 10,000 people in the district and damaged property worth Rs. 400 million (USD

9.5 million). Subsequently, the 1990 cyclone claimed the lives of 28 people and damaged property worth Rs. 300 million (USD 71 million). In December 2004, the Tsunami waves inundated the coastal areas in the vicinity of one kilometer from the sea causing damage worth Rs. 50 million (USD 1.2 million).

Eight out of 15 habitations are located in low lying areas and access is through mud roads. These habitations face persistent problems of safe evacuation at times of disaster. A seven kilometer road that connects these habitations on the Nachugunta Island to the ferry point is a mud path and poses accessibility issues even during the rainy season. In two habitations, engaged primarily in sea fishing, the two to three kilometer road leading to the creek becomes a mud path when it rains.

It is the understanding of the Consultant that in the past, Zinkapalem being the farthest community in the Edurumondi Island was totally disconnected to the ferry and the road leading to the ferry point was not at all navigable up to the village of Bodivarumola during the monsoons. Due to the fact that clay soil made up the road and it was also full of pot holes. During monsoon the clay used to be very slippery and it was even difficult to walk on the surface of the road therefore it was impossible to evacuate from the village during a storm or a cyclone.

A 5.75 Km safe evacuation road have been built/restored connects some project communities of Edurumondi Island from the village of Zinkapalem to the mainland ferry via the village of Bodivarumola. Now the road from Zinkapalem to the village of Bodivarumola has been completed as a part of this project and its regular upkeep will be carried out by the Department of Panchayati Raj (DPR) with involvement of local community. It is again the understanding of the Consultant that the road will be paved by DPR. Four hundred (400) households (over 1,800 people – out of which 240 children, 880 women and 720 men) - have access to and can be evacuated through this road. An Environmental Impact Assessment (EIA) was done prior to the construction and its recommendations were complied with during construction.

After the 1977 cyclone, the Government of Andhra Pradesh promoted the building of community shelters for temporary and immediate evacuation of residents. While all the tsunami affected habitations in the program area had community shelters, they were severely damaged and had not been maintained by the community. The district administration has identified five villages where support is required for building multi purpose shelters. Of these five villages, the proposed program supported the construction of multi purpose shelters in three program villages.

Three (3) Cyclone Shelters – one in Nachugunta (mostly complete now except the access ramp for the disabled), one in Zinkapalem (mostly complete except a part of the flooring and final painting – which will be complete by the end of the month according to AKPBS and the monitors – SMEC), and one in Pathauppakali – will be completed in the first quarter of 2009. The three shelters will provide safe shelter for 797 households of which 453 are extremely vulnerable¹¹. The 453 vulnerable households constitute 1359 people including 122 children and 807 women.

While Cyclone Centres in other countries and even in India are on stilts or concrete columns designed for safety against high winds and high waves, those 3 constructed for this project are totally covered from ground up. Although the engineers of Aga Khan Planning and Building Service - India (AKPBS-I) who constructed this structure said it is the latest design which had been checked by eminent structural engineers in India and had been built according to the Indian Code of Practice, the Consultant (Evaluator), who himself is trained in structural engineering, is not convinced how such a structure will survive another Tsunami. The structural

¹¹ Criteria for vulnerability are not having a *pucca* house, women headed families, widows, houses located in low lying area and socially excluded groups.

design of all these cyclone shelters should be reviewed by a structural engineer for their safety against high waves. All these cyclone centres have been built inland (2 are on the island and 1 on mainland) and, according to the AKPBS Engineers will not be attacked by high waves. One cyclone centre in Pathauppakali is being constructed by a government appointed contractor and was only 80% complete during the Consultant's visit at the end of February, 09.

According to the AKPBS Engineers, as per earthquake engineering principles, buildings on stilts are vulnerable to earthquakes therefore stilts have been avoided in the cyclone shelters. SMEC (the civil works Monitors) had also reviewed the designs and recommended that stilts should be avoided. The AKPBS Engineers claim that these buildings are fully compliant with Design codes of Indian Standards and as specified by National Disaster Management Authority.

The major assets of the fishing communities which the project villages comprise are boats and fishing nets and gear. Two shore based shelters, one in Nachugunta and the other in Zinkapalem were completed by end of December 2008, will provide safety for fishing assets of 574 families. These shore-based centres are on the coast near the water and are built to resist wave action.

EIAs were undertaken prior to the construction of all these shelters and the recommendations were complied with during construction.

PI 1.2.2 Number and type of equipment and supplies implemented and population accessing (EWS, EWT, regional and local stockpiles) and nature of gender aspects incorporated

In each of the 15 villages stockpiles have been set up. Emergency Water Treatment (EWT) equipment has been included in all stockpiles. Each village level stockpile has 53 items. On an average 25 to 30 CERT members/villagers have been trained in each village to use and manage the stockpiles.

A Mandal level stockpile has been set up in Nagayalanka which is the Mandal headquarters (at the NCRC building). This is a regional stockpile and has 67 items.

All the stockpiles – village as well as Mandal level – were found to have gender sensitive items such as sanitary napkins, sarees etc. The village and the Mandal level stockpiles have already been used during the recent storm - *KHAIMUK* Cyclone in November 2008. Some of the items from the stockpile are used by the government officers (e.g. a raincoat is being used by the Assistant to the Mandal Revenue Officer) and the villagers (e.g. the EWT and the pump in Nachugunta are being used by the Head of the Panchayet for various village work purposes). It is the opinion of the Consultant that it is good that they are being used, but they should be rented out for the sustainability of the stockpiles.

Regional stockpiles have been handed over to NCRC and in all 30 CRC executive body members (15 male and 15 female) and 8 RART (5 male and 3 female) members have been trained on management and maintenance of regional stockpile. All the executive committee members (which include men and women) have direct access to the stockpiles.

Coastal Resource Centre (CRC) has been established at Nagayalanka - most commonly known as Nagayalanka Coastal Resource Centre (NCRC) - and registered under the Societies Registration Act.

Some resource persons, who have been trained by the project, are called by other projects funded by donors to impart training on their staff or beneficiaries. These resource persons are paid a fee of Rs. 100 per day to cover their expenses. **It is the recommendation of the Consultant that these resource people do these assignments through CRC and charge Rs. 150 while Rs. 50 goes to CRC to contribute to its sustainability and at the same time it will not be a major cost increase to the donor.**

In a meeting with the Consultant at the NCRC, the members of the Executive Body expressed that they need another year of hand-holding before they can have sustainability since they just started operation. It is understood that it would be difficult if a project just establishes an organization and leaves it to the members to sustain. **Therefore, it is the recommendation of the Consultant that, if possible, there should be a person from the project assigned to NCRC, on a part-time or as needed basis, for a year after it starts its operations.**

The Early Warning System has been purchased through the District Controller's office and that office is supposed to install and maintain the system in the future. The INSTAXX system has been installed in the District Emergency Unit (DEU) at Machilipatnam and a repeater system has been set up in Nagayalanka (at Mandal level). In 15 Villages Very High Frequency (VHF) antennas and Public Address (PA) systems have been set up. When there is a storm warning, it is transmitted from the DEU to the MRO's office where the repeater is located. From the repeater each of the fifteen (15) villages get the information through the VHF antenna and at the same time it is announced in the Public Address (PA) system which is capable of taking the signal directly. This is tested on a regular basis and will also be used for sending messages during the upcoming election this summer. In total 600 people (328 male & 272 females) have been trained to maintain the PA system at the village level.

In all, 67 members (29 women and 38 men) have been trained on Early Warning Systems. A Memorandum of Understanding (MOU) has been signed with the district administration for further maintenance of the system. In total, 42 members (39 men and 3 women) of the village revenue officers, Panchayat Secretaries and Village Assistants were trained on maintenance and management of Early Warning Systems.

EIAs were not required for the early warning system and the stockpiles and, therefore, were not done.

Output Result 2.1 Improved Water and Sanitation Infrastructure/Facilities

PI 2.1.1 Number of improved/restored fresh water sources, and/or water quality testing tool kits, and sanitation infrastructure/facilities with specific reporting on benefits for women as appropriate

APR2D has improved or restored access to fresh water by initiating or completing the improvement of 5 feeder channels, 2 robust water filter systems, lining and fencing of 4 ponds, 1 water distribution system and 99 tap/hand pump platforms, 10 fresh water well covers and 28 roof rain water harvesting structures. In addition, since the start of the project 363 sanitation units were completed.

APR2D has improved or restored access to fresh water sources through a number of interventions, such as installing roof rain water harvesting structures, improving feeder channels and improving tap/hand pump platforms. The cumulative progress towards completion of these activities is summarized in the table below.

EIAs were undertaken prior to the implementation of all these interventions and the recommendations were complied with during construction.

In all, 15 water testing tools were obtained from UNICEF (at no cost to the project). These were used initially for testing and identifying safe potable water sources.

A Construction Committee of 5 to 7 villagers has been established in each village (14 of the villages since no civil works were implemented in the village of Elachetladibba (the village has been adopted by another NGO for all required/relevant construction works) and the members of this committee were trained for upkeep and regular maintenance of these created assets. These trained people include 28 women.

The Consultant had a look at some of these well constructed structures (Table 2.3). The water from the pond cannot be considered safe for drinking without passing it through the Robust Filter System which is capable of providing complete treatment including disinfection. This is what was recommended by the EIA as well.

Table 2.3: Status of Water Infrastructure Construction under the Project

APR2D Activity	AWP Target	Completed as of 16 February, 2008
Improve feeder channels	5	All five (5) feeder channels (Nali, Zinkapalem, Nachugunta, Kammanamolu and Pathauppakali) completed and handed over.
Improve robust water systems	2	Completed and handed over.
Fencing and lining of ponds	4	The fencing and lining of ponds all four (4) ponds (at Zinkapalem, Bodduvarimula Nachugunta, and Sangameswaram) were completed and handed over.
Improve water distribution systems	1	This was completed and handed over.
Improve tap/hand pumps	98	According to the list provided by the project 99 (over-performed by 1) were completed and handed over.
Cover Fresh water wells	9	In fact a total of 10 (over-performed by 1) were done by the project and handed over.
Install roof rainwater harvesting structures (RRWHS)	27	A total of 28 (over-performed by 1) RRWHSs were completed by the project and handed over.

The roof rain water harvesting structures (RRWHS) would collect rain water from the roofs of some of the public buildings (e.g. the primary school building in Nachugunta, the shore-based centre at Zinkapalem), and then pass it through a filter system of boulder, gravel and charcoal which is then pumped with a hand pump. The Consultant did not see it operating but **recommends that the water coming out of there is tested for Indian Drinking Water Standards before drinking. It may need chlorination or some kind of disinfection to get rid of the bacteria which may grow in the water or in the filters when it is not used.**

According to the EIA, the roof rain water may not be safe for drinking and therefore it also recommends disinfection. Otherwise it should be used for washing purposes.

In one occasion (at the Primary Health Centre at Edurumondi) it was found that the rainwater is being collected at the wrong corner of the building which happened to have an existing slope in the direction of that corner and the rainwater discharge pipe was located. An iron staircase has been put in the same corner which has a parapet wall cut out to the roof for access to the roof. It is the Consultant's opinion that the rainwater, instead of going into the collection system, will come out through the stairs opening.

Towards reducing people's health vulnerabilities APR2D is improving sanitation infrastructure in project villages where only approximately 27% of households had sanitation units. Under APR2D, 363 vulnerable families were identified for provision of sanitation units. These units are being provided to families that are most vulnerable at times of disasters. However, 30% of the women still lack privacy and go to the field. In Total, 363 sanitation units were completed and handed over to the households. Since these units are individual household assets, joint onsite training has been provided to beneficiaries for maintenance.

All the construction committee members have been trained to maintain these units. Training has also been given to the 363 families who are the beneficiaries of these units. EIAs have been done prior to the construction of these units and the recommendations were complied with for during construction.

By talking to the implementation team it was understood by the Consultant that *Vastu*¹² played a major role in orienting the toilets. After construction of the toilet in a certain way, because of the availability of land, the members of the household would not use it because, according to *Vastu*, it was not oriented correctly. The implementing team had to use the local *Vastu* consultant for proper orientation. The villagers who were the beneficiaries of these units also wanted the units to be a bit bigger so that they can wash and take bath within the unit buildings. It was also found that while some people used the toilet, the others still wanted to go out to the field because that is the way they are used to – an open air facility. **It is the recommendation of the Consultant that if the roof is taken out of the toilets and the walls would be shorter and made about 5 - 6 feet high the feeling would be somewhat of open air and the cost of the toilet building would drastically reduce.** However, if the toilet or the bathing area is visible from another building (as the case may be in some of them) it will not be possible to do it that way. The Government is undertaking sanitation program in intensive way across all the villages. It is anticipated with the collective efforts, communities will be oriented through proper EIC and health campaigns.

In order to avoid contamination of surface and ground water from discharge of wastewater from the sanitation units twin pit (leach pits) latrines have been provided. It will take 1.5 years to fill one pit at which time the connection will be switched to the other pit for the next 1.5 years. By then the waste in the first pit will decompose and it will be ready for the next 1.5 years. The soil in the project area is not very stable and therefore a lining was recommended in the EIA. The ground water table in project area is also very high and twin pit system should mitigate the negative effects.

It appears that garbage disposal is still a problem in the project villages. Trash and garbage were all over wherever the Consultant visited – on the streets, in the fresh water feeder channels, inside the ponds which had been fenced and kept safe by the project. According to the Consultant, it will take to change the behaviour of the people to be living in a clean environment and, therefore, it requires a strong BCC (Behaviour Change Communication) component in the project. It will also require training of the BCC volunteers to do that. The Consultant's discussions with the BCC volunteers revealed that they did not notice this and did not know how to implement this. However, this project focussed only on personal cleanliness – using the sanitation units, hand washing after defecating or urinating, hand washing before and after eating or feeding someone etc. It appears that the use of sanitation units have increased from 30% to over 70%.

Output Result 2.2: Strengthened support for women and children

Indicator 2.2.1 Number of people, especially women and children, that benefit from health programs

Health camps were organized in seven (7) project villages (Kammanamolu, Zinkapalem, Sorlagondi, Krishnapuram, Nali, Edurumondi and Sangameswaram), covering all the 15, with the help eminent private doctors, the local Primary Health Centres (PHCs), Voluntary Confidential Counselling Testing Center (VCCTC) and ICDS. The BCC volunteers, Health Volunteers and VDC members played a key role in the success of the camps organized. The following table provides the number of total beneficiaries as well the number of men, women and children for each of the camps.

¹² *Vastu Shastra* is the *vedic* science of buildings that brings one happiness. It considers the astrological placement of the Sun, Earth, and other planets during the actual construction.

Table 2.4 Beneficiaries of Health Camps Organized During the Past Six Months

Name of the Village	T o t a l beneficiaries	Men	Women	Children
Kammanamolu	233	88	126	19
Zinkapalem	200	65	99	36
Sorlagondi	396	111	215	70
Krishnapuram	207	63	112	32
Nali	400	127	218	55
Edurumondi	1240	459	617	164
Sangameswaram	484	156	217	111
Total	3160	1069	1604	487

PI 2.2.2 Number of trainings held for Angan Wadi workers and change in perception of users of support services

To strengthen support for women and children, APR2D is supporting the implementation of the Government's (Central) ICDS through support for *Angan Wadi Workers (AWW)*¹³. ICDS is an India Government initiative throughout the country which aims to provide an integrated package of health, nutrition, early child care and education services to children, zero to six years of age, from disadvantaged households. APR2D is working with this program to enhance capacities of key service providers on (i) nutrition and immunization (0-3 age); (ii) preschool education and (iii) antenatal, natal and post natal care; (iv) health education for adolescent girls.

During April-September 2008, provision of learning spaces in 11 centres and teaching learning materials to all 13 centres was completed in consultation and collaboration with the Project Director, ICDS, Krishna District. Also kitchen gardens have been promoted in 4 of these Centres. The Minister of Fisheries also visited the AKDN adopted *Angan Wadi Centers (AWC)* and had detailed interactions with the teachers, parents and children.

Trainings on child care and development are ongoing and during the reporting period, 5 trainings were completed by Aga Khan Education Service India (AKESI). Efforts were made to develop 7 centres as model centres. The centres were chosen as models based their being the most motivated *Angan Wadi Workers*, implementing child care and development activities and maintaining information and records and/or having promoted kitchen gardens and active Mothers' Committees. Five out of the 7 centres have been identified as model centres. That these centres supported by the APR2D project can act as models to other centres in the region is a testament of the improved capacity and support for women and children.

As part of strengthening the ICDS services, the project has facilitated the operation of existing Mothers' Committees and routine meetings have been conducted with the committees (4 meetings in the mainland villages and 2 meetings in island villages have already been held). The Mothers' Committee is a committee set up by the mothers of the pre-school children of the *Angan Wadi Centres*. The Mother's Committees now provide assistance in selection of eligible beneficiaries for supplementary food, encourage the community to contribute supplementary nutrition, support antenatal and post natal care, monitor height and weight of children, and promote kitchen gardens in the *Angan Wadi* centres where possible.

In 8 out of 11 *Angan Wadi Centres*, a social map is displayed and includes information on pregnant/lactating mothers and malnourished children. The *Angan Wadi Workers* have shared their learning and experiences with workers of other centres in the Mandal during the monthly meetings organized by the ICDS department. At the

¹³ *Anganwadi* means courtyard. Under ICDS one *Anganwadi* worker is allotted to a population of 1000. She provides the following services in the *Anganwadi* Centre: supplementary nutrition, immunization, health check-up, referral services, non-formal pre-school education, and nutrition and health education.

insistence of the ICDS department, the training module on Shishu Pahel Paddhyati (Child Initiative Learning) has been developed in Telugu through APR2D. This publication has been prepared for the ICDS department for incorporating child care and development components during training of *Angan Wadi* Workers in other parts of the State.

In total 11 AWWs (all females) have gone through 7 Trainings, 7 Exposure visits and one (1) winding-up session carried out by APR2D. The Consultant visited some of the AWCs adopted by the project as well as one which is not and found a lot of difference in the morale of the preschool students, their parents and the AWWs who are the teachers. The TLM provided in these schools are much better than the TLM provided by the government, the preschool students also have very good perception of what they learn (in fact they learn to recite some English poems), and the teachers perception of user support services have changed to much more service orientation. The Mothers Committee for the project adopted schools have started savings account in the bank and started putting in Rs.5.00 per mother per month to purchase the TLM and to make the results sustainable.

PI 2.2.3 Number of training held for health volunteers and support offered for health care

The project area has a team of health volunteers identified by Indira Kranti Padakam (IKP), Reproductive and Child Health Programme (RCH) II. These health volunteers have been trained on general community mobilization aspects, maternal and child health and targeted topics based on an assessment of current responsibilities and community needs. They have been given 3 trainings – 2 at Mandal level and one in Hyderabad (by the Academy of Nursing Studies). In total 28 volunteers (all females) have been trained.

During the project period, a five (5) day training for 34 health volunteers (8 males and 26 females) was conducted by Academy of Nursing Studies at Hyderabad covering aspects such as personal hygiene, women and child health.

Output Result 2.3: Improved awareness of health and hygiene practices

PI 2.3.1: Number of people (f/m) trained in healthy public hygiene/sanitation practices

APR2D has designed a behaviour and change communications (BCC) strategy, BCC tools, and trained volunteers who will conduct onward trainings in target communities on good health and hygiene practices. A cadre of volunteers has been trained on good health and hygiene practices. Forty-five (45) volunteers from Youth Groups were trained to educate people on health and hygiene issues during and after disasters. Out of this initial group, 29 volunteers (11 male, 18 female) were selected for further involvement, such as awareness generation, and a small honorarium is provided to volunteers.

During April-September 2008, the BCC volunteers continued activities for sensitizing, creating awareness and monitoring change through usage of BCC material developed, organizing village level meetings and activities such as *kalajatha* – a traditional South Indian theatre. The volunteers reached out to approximately 3,120 families in 15 villages.

The BCC material developed has been provided/displayed at all public gathering points, facilities such as *Angan Wadi* Centres, primary health care centres, community health care centres, schools (13 primary schools) etc. with active involvement of the VDCs, BCC and Health volunteers.

To ensure effective implementation, the project team conducted 6 review meetings with the volunteers to take feedback and address their queries. The external monitoring consultancy agency (New Concepts) also made visits to the project villages to monitor effectiveness of communication by the BCC volunteers.

Also, in all, 30 women, adolescent girls, Mothers' Committee members were trained on women health and hygiene aspects by Academy of Nursing Studies (ANS) during August and September 2008 at Hyderabad, Andhra Pradesh.

For public hygiene and sanitation, however, the BCC volunteers focused mainly on the use of sanitation units, washing hands after defecating or urinating, hand washing before and after eating or feeding someone etc. Anecdotal examples include that the use of sanitation units now increased from 30% to 70% and the children do not eat dry fish off the ground any more as they used to do before the project started. On the other hand, the Consultant has seen garbage thrown around all over the villages, including on the streets, in the fresh water feeder channels, inside the ponds which had been fenced and kept safe by the project. He also saw that one of the BCC volunteers blowing his nose in his own palm and cleaning it on a fence which belongs to a household. These certainly do not speak of good hygienic and sanitary practices.

However, the Consultant was told that as the result of project's intervention, two project villages have been awarded *Nirmal Gram Purashkar* from the government, 751 households have received household Dust Bins from the Government and two rickshaws have been provided by the government to a project village to collect household garbage.

Output Result 3.1: Increased awareness on disaster preparedness and risk management for target communities, local government and development community

PI 3.1.1 Number and type of materials distributed and estimated number of people targeted/audience (e.g. stakeholder awareness)

Table 2.4 Type of Materials Developed and Disseminated under the Project

Information/Materials¹⁴	Developed For	Shared with
Training Modules (Disaster Management)	CERTs and CERT coordination group, Youth Groups, Resource Pool and Rapid Assessment and Response Team CERTs and VDC members, RART	Community Groups, VDCs and NCRC
Guidelines for Management of Stockpiles		Community Groups, Village Revenue Officer, VDCs and NCRC
Guidelines for Management and Maintenance of Early Warning System	District Revenue Officer	Community Groups, RART, District Revenue Officer, NCRC
Guidelines for Operations and Maintenance of Community Managed Water Resources/Sanitation Units	Construction Committees	Construction Committees, VDCs and Panchayats, NCRC
List of Teaching Learning Materials provided and Anganwadi Centres and Module on Shishu Pahal Paddyati	Anganwadi Centres, ICDS department	Anganwadi Centres, ICDS department, NCRC

¹⁴ The Consultant confirms that he has seen some of the materials

Behaviour Change Communication Material	BCC and Health Volunteers, Critical Points such as Primary Health Care Centres, Community Health Care centres, Anganwadi Centres, Public Gathering Points such as the Panchayat office etc.	Community Groups, Facility Providers, NCRC, Rural Water Supply Department, Office of the District Medical Officer, IKP, District Rural Development Authority, Schools, NGOs
Registration Papers for Nagayalanka Coastal Resource Centre	Nagayalanka Coastal Resource Centre	NCRC, Mandal Revenue Officer, District Collector

Indicator 3.1.2 Coastal Resource Centre (CRC) facility established and operational

During the implementation period of the project, the concept paper on CRC and a draft of CRC bylaws were translated into local dialect for further sharing with the community groups, government line departments and local NGOs and finalized. The Coastal Resource Centre (CRC) has been established at Nagayalanka.

Many of the Coastal Resource Centers existing globally are strongly community based and focus on coastal ecosystem management. In India, several organizations have set up resource centers for livelihoods development and/or for Self Help Group (SHG) based activities. As a part of the phase out strategy, the project has established the NCRC. AKDN has held extensive meetings with district and mandal level government officials. Discussions were held with community leaders and trained volunteers. Project staff also visited the Tamil Nadu Tsunami Resource Center set-up by the Tamil Nadu government and other stakeholders after the 2004 tsunami¹⁵. The purpose of organizing joint visits of CERT, VDC and RART members to these centers was to develop a common vision amongst these stakeholders on the CRC. It is commonly agreed amongst these constituted groups and project staff, that convergence of all activities and linkages at the CRC will foster synergy and a collaborative effort. The engagement of key government and local NGOs as advisors to the CRC activities will bridge the gaps between key stakeholders-community, government and NGOs to complement each others efforts and jointly respond at times of disasters at a local level. Observations and lessons learned from studying the various centers led to a common understanding that the Nagayalanka Coastal Resource Center will be a community centric and community motivated CRC. The CRC is closely linked with the district and local governments right from the beginning and will serve as a convergence point for all project activities, serve as an information and knowledge resource centre to encourage local dialogue and partnerships. It comprises representations from each village-to include CERT members, VDC members and RART members.

The formation of a General body (GB), Executive Committee (EC), Governing body (GB) or Board of Directors (BoD) and Advisory board was completed. The details on membership are as per the table below.

Table 2.5 Roles and Responsibilities: Coastal Resource Centre (Current status)

NCRC	Functions	Description of Members	Total Members	Males	Females	Meetings Held to- date
General Body	GB meets once in a year and steers the NCRC functions	VDC /CERT representative	75	45	30	2

¹⁵ <http://www.tntrc.org>

Executive Committee	EC meets once in every month. Involved in planning, implementation and monitoring of	GB of NCRC	32	17	15	9
Governing Body	GB meets twice in a month. Involved in execution and Monitoring of regular activities	EC of NCRC	5	4	1	10 (minutes have been recorded for the last six meetings).
Advisory Board	Provide suggestions and linkage with NCRC. Provide trainings and information/awareness on Government and other schemes	Functionaries from Government Departments, local NGOs, RART members	8	6	2	Representative Participation in All Meetings

The Coastal Resource Centre was registered as ‘Nagayalanka Coastal Resource Centre’ under the Societies Registration Act. Based on discussions and dialogue with the district administration, an office space for the Resource Centre was provided near the Mandal Revenue Officer’s office, the nodal person for coordinating relief and response activities at times of disasters at the local level. The office was set up and is fully operational.

As a part of capacity building activities, exposure visits of NCRC members was held to Resource Centres set up by other NGOs, orientation trainings and specific trainings on management of community based organizations, institution building and gender aspects have been organized. Andhra Pradesh Mahila Abhivrudhi Society (APMAS) has conducted the trainings on all aspects while the gender training has been conducted by the gender consultant.

NCRC is the first community based organisation for management of disasters at *Mandal* level in the State of Andhra Pradesh. It now houses the Regional Stockpile and also has physical facility like a training room etc. which it can rent out to other organizations for meetings, trainings etc. to sustain itself. In addition some of the people from the Resource Pool, who are the members of the NCRC, are generally asked by UN or other organizations working in disaster management for the purpose of training. They can very easily increase the rate they charge by 50% and keep this 50% in NCRC’s revenue without costing too much for these organizations and without compromising the amount that the Resource Person gets. They can also provide disaster training on their own and make it a fee based training.

2.3 Outcome Results

Outcome Result 1: Enhanced disaster management and preparedness capacities of communities and community based organizations (CBOs)

APR2D has enhanced community capacity for disaster management and preparedness through the formation of community based organizations trained on how to respond to and prepare for a disaster as well as by increasing people’s access to infrastructure, such as protective cyclone shelters, and equipment/supplies, such as emergency stockpiles.

This result has been produced. The disaster management and preparedness of communities and the CBOs was evidenced by the preparation for the *Khymuk* cyclone of November 2008.

PI 1.1 Percentage increase in number of communities or CBOs aware of disaster/risk management protocols and prepared for evacuation (gender disaggregated data)

There has been a 100% increase in the number of communities aware of disaster/risk management protocols in the project area. In all 15 project villages, village development committees (VDCs), Community Emergency Response Teams (CERTs), Youth Groups have been formed and a Rapid Assessment and Response Team (RART) has been established at the regional level. (A detailed table of disaster management groups formed, including gender disaggregated data, can be found under output result 1.1). Awareness of disaster/risk management has been increased in communities as a base of more than 500 volunteers has been created in the project villages. The awareness of disaster management protocols within community groups has been increased through capacity building on various aspects of disaster management.

CERTs are a village level organization responsible for responding to natural or human-made disasters, such as through search and rescue, management of stockpiles and other emergency response activities, and have been constituted in all 15 villages. In total, 356 members (29% females) have been trained on key aspects of (i) relief camp management (including stockpile management), (ii) early warning, (iii) search and rescue, (iv) first aid and (v) psycho-social care. All members received basic trainings on community-based disaster preparedness and psycho-social care. Some members participated in advanced trainings, such as on relief camp, stockpile management & shelter planning, early warning, search & rescue, first aid and psycho-social care. A coordination group of 30 CERT members (including 6 females) was also trained in (i) managing CERTs, (ii) conducting mock drills in villages, (iii) organizing meetings and sharing of information and (iv) liaising with other local GOs and NGOs.

An increase in awareness amongst communities and CBOs of disaster management is further evidenced by a group of 30 expert trainers (including 11 females) known as the resource pool. The resource pool is a group of highly skilled and trained CERT members that can conduct refresher trainings in the project villages and organize basic trainings in non project villages. The resource pool has been constituted for the following themes: psycho-social care (9 members); search and rescue (6 members); relief camp management (4 members); first aid (3 members) and disaster management and stockpiles (8 members).

At the sub-district level, a Rapid Assessment and Response Team (RART) comprising of 17 members (including 4 females) has been constituted. This body is made up of 6 government representatives and 11 local citizens. In total, 6 trainings have been organized for RART members. Of these, 5 trainings were organized in April - September 2008. Three trainings have been organized for them on aspects related to coordination of relief and response. These members have also participated in 3 CERT trainings, such as on psycho-social care, stockpile management, relief camp management, shelter management, gender as well as training on soft skills such as team building, goal setting etc. Capacity building efforts have incorporated a gender sensitization component for RART members. For example, members were provided a brief orientation on basic gender concepts, including women in disaster risk reduction activities. Trainings have highlighted the importance of including women in the planning process and specific trainings have incorporated women specific concerns, such as those related to women and childcare within psycho social care trainings.

An increase in the number of communities or CBOs practicing disaster/risk management protocols is evident in part by CBOs in all 15 target communities completing disaster management plans (DMPs). DMPs are a plan for a given community in case of a disaster, such as plans for evacuation and shelter, identification of local teams trained and to be responsible for aspects of relief and rescue operations, approaches for assisting vulnerable groups during rescue and relief operations, development of support structures for local and district level relief supplies, and information on institutions in and around villages - NGOs, as well as access to government services at times of disasters etc. At the village level, DMPs have been prepared through a consultative process with the community. In all, 15 members from the community were trained to help facilitate the development of disaster management plans. All plans have been handed over to the community. Of these, 4 have been ratified by the local panchayats for implementation. Efforts are being made to meet with the panchayat members and organize a local forum for ratifying the remaining DMPs.

Another sign of communities using and applying these lessons comes with them holding mock drills and post training follow up activities. Mock drills and post training follow ups are being conducted to reinforce skills gained by the CERT members and community members. Over the life of the project to September 2008, 63 mock drills/post training follow ups had been completed. Of these 24 mock drills and 39 post training follow up were conducted on different components such as psycho-social care (15), first aid (14), and search and rescue (10).

To build capacity of the 15 target villages to manage stockpiles, guidelines on stockpile management were to be produced. During April-September 2008, guidelines for management of local stockpiles developed together with the CBOs, the District Revenue Department and Focus India. Guidelines for management of regional stockpile have been developed. Selected CERT and resource pool members have been trained on management of stockpiles. Guidelines for management of stockpiles are incorporated into a MoU signed by members of village development committee, Coastal Resource Centre and AKDN.

PI 1.2 Percentage of households with increased access to infrastructure (e.g. roads, shelters, etc.) in case of disaster

With completion of infrastructure components, there is a substantial increase in household access to infrastructure. The infrastructure constructed or reconstructed in the project aims to improve disaster preparedness of communities, for example cyclone shelters provide a safe, disaster resistant structure for communities to evacuate to in case of a natural disaster.

All these infrastructure were built based on the recommendations of the EIA Studies. The table below summarizes details on the projected beneficiaries of infrastructure under the APR2D project. Among all these beneficiary families, 807 women will have easy access to shelters in case of a natural disaster.

Table 2.6 Projected Access to Infrastructure for Households

Critical Infrastructure	No. of Villages	Number of Beneficiary Families
Improvement of Road	Access to 3	400
Cyclone Shelters (3)	3	797
Shore Based Shelters (2)	2	574
Sanitation Units (363 including 10 pilot units)	14	363

Water Resources		
Feeder Channels (5)	5	1,651
Fresh Water Ponds (4)	4	1,027
Water Distribution System (1)	1	60
Tap and Hand pump Platforms/Well Covering (105)	14	1,575
Roof Rainwater Harvesting Structures (27)	12	60

Outcome Result 2: Reduced vulnerability of men and women to health and hygiene risks in preparation for a disaster

APR2D has worked to reduce people’s health vulnerabilities to better prepare them in case of disasters by improving water and sanitation facilities, strengthening health and education support for women and children, and improving health and hygiene practices of target communities. All these have been produced as the outputs of the activities. However, according to the consultant, although the villagers are not vulnerable any more from most of the health and hygiene risks in preparation of a disaster, they are still vulnerable from garbage around the village and some personal hygiene practices. It appears that in most of the villages, garbage disposal is not practiced properly and, therefore, health vulnerability of men and women from garbage-related health hazards has not reduced. The Consultant was not totally convinced that people’s vulnerability has reduced from personal hygiene point of view in all villages (see output result 2.3 PI 2.3.1 pages 14-15).

In the opinion of the consultant, this result has partly been produced. A very strong BCC component should have been introduced by the project to make the garbage disposal and the personal hygiene practice part more effective.

PI 2.1 Increase in number of people accessing health care services and demonstrating increased knowledge of personal hygiene and sanitation practices (gender disaggregated data)

Initial progress towards outcome level results, such as the increase in the number of people accessing health care services and demonstrating knowledge of good health and hygiene practices is summarized in the table below. Achievements towards output level results related to health outcomes are detailed below.

Table 2.7 Results of Health and Hygiene Campaign

INDICATOR	BASELINE	AFTER THE APR2D PROJECT
Toilet use	Low use of existing 1,419 units	1,522 units (62 % utilisation)
Sensitized men and women in 15 villages hygiene and sanitation	very low	3,120 households.
Hand wash practice	Low	Almost 100% in all 15 villages

Garbage and Waste Disposal - Cleanliness Drive	No organized garbage disposal	Household dustbins and rickshaws provided in 2 villages by rural water supply department. It in the understanding of the Reviewer that in most of the villages community is collectively/ individually collecting the garbage and ensuring safe disposal ¹⁶
Information, Education and Communication	No public dissemination	Bill Boards set up in 7 mainland villages

There are 3 Primary Health Care Centres, 1 Sub-Center and 1 Community Health Center and these are accessible to all the people of all the 15 project villages. Some of these facilities are very near to the villages and some are around 8-15 Km from a village - nevertheless these are connected with roads and are accessible to villagers. However, the access becomes limited during monsoon because of the road condition. The BCC for health and hygiene has reached all the village population including the women.

Outcome Result 3: Improved institutional linkages and knowledge sharing of program learning's and achievements

APR2D has improved intuitional linkages at the community, sub-district and district levels. Throughout the design and implementation phase of the project, strong institutional linkages with government and civil society organizations have been established.

This result also was produced.

PI 3.1 Number and type of stakeholders active in project activities

At the community level, new CBOs have been formed (VDCs, CERTs, Youth Groups, a RART) and new and existing institutions strengthened (e.g. *Angan Wadi* Centres). As well, linkages with the Primary Health Care (PHC) centre and Registered Medical Practitioners have been strengthened. At the sub-district level, improved linkages have been fostered with the Mandal revenue Officer on Disaster Management, Early Warning Systems and regional stockpiles. At the District level, improved linkages have been fostered with the District Collector and Department of the Panchayati Raj on all project components. For example, the District Disaster Response Team (the team chaired by the District Collector and comprising of government functionaries, NGOs and community representatives) now meets 2 times annually to assess the preparedness of the district to respond at times of disasters. Linkages have also been established with the Radar Station and local NGOs. Regular interactions with District administration, Panchayat Raj, ICDS, PHC, District Medical & Health Officer, Indira Kranthi Padkam Project (IKP), Rural Water Supply (RWS), Mandal level officers and NGOs regarding project components have been a part of the project.

In short, all the infrastructure which have been put in by APR2D, has and will continue to have full support of the Government.

PI 3.2 Number and type of knowledge sharing forums where project learning have been shared

¹⁶ However, according to the Consultant, this is not getting rid of the street garbage and the villagers are burning their household garbage which creates air pollution and therefore not very hygienic.

There had been many forums where these villagers shared their knowledge through community level replication trainings, mock drills, awareness campaigns, celebrating special days, Kalajatha, circulation of IEC materials and manuals, training materials, follow-up meetings and *Gram Sabhas* (village gatherings). During health camps, the CERT members in the villages put up camp stalls. CRC is a forum that is used considerably in knowledge sharing efforts. CRC has been invited to disseminate its learning during Krishna Festival.

2.4 Unintended Results

Many results, which were neither expected nor intended, were produced as a result of the project. Following is a list of such results prepared out of the anecdotal data and some of which were essentially been told by the project team.

- Now the villagers of Zinkapalem have identity and status because of the road constructed by the project
- The training manuals, IEC materials etc. are now used by other NGOs and donors working in similar sectors
- The disaster management practices are being replicated by other local NGOs
- One AWW trained by the project received an award from the government as the “Best Preschool Teacher”
- Some of the resource team members are asked by UNDP to provide training in their project
- Attendance of girls in preschool centres have increased
- Due to the health camps, deaths of infants at birth and their mothers during pregnancy or giving birth have reduced
- District level involvement in the regional stockpile
- Now CRC is not only looking at disaster management but also in other areas for sustainability. These areas are; providing fee-based services to other NGOs or donor or government supported initiatives, providing generic information (fee-based) on livelihood and fisheries, fee-based training etc.
- Two villages, which were not covered before, are now covered by the *Angan Wadi Workers*
- Two (2) project villages (Kammanamolu and Nali) have been awarded *Nirmal Gram Purashkar* (Award for Clean Village) by Andhra Pradesh Government
- For garbage disposal, 751 households have received Dust Bins from the Government
- Two rickshaws have been provided by the Government to a project village (Kammanamolu) to collect household waste
- The BCC volunteers have actively participated in the implementation of the Cleanliness Drive in one village that has been carried out with *Indira Kranti Padkam* (IKP)
- In collaboration with the Rural Water Supply department, billboards with messages to control open defecation, mosquito breeding and water borne diseases have been displayed.

3. CROSS-CUTTING THEMES

3.1 Gender Mainstreaming

The project - APR2D - has working to mainstream gender into its project activities. The key gender mainstreaming initiatives across program elements are as follows.

Training for AKDN team (4 females and 9 males) was organized and completed on gender aspects. The consultant imparted two trainings on AKDN staff to build capacity to mainstream gender. The first two-day workshop was to assess the capacity of the staff and this was followed up by a capacity development workshop.

Gender was considered in all project activities and wherever possible involvement was kept equally divided between men and women. The project involved women in all activities including memberships of all groups. Gender Consultant also did a capacity building workshop for these groups as well. A follow-up training for community members was conducted for 23 members: 15 females and 8 males. A gender training program was also organized for the BCC volunteers (18 volunteers: 11 Female and 7 male members participated). All groups were established, wherever possible, with equal number of men and women as members. To increase women's participation in trainings, these were done at the village level.

All stockpiles contain specific items for women and children. In regional stockpile 18 items are specially for women while some are for women, men and children. Village stockpiles have 12 items which are specifically for women.

The project has taken inputs in all project documents from the Gender Consultant

In the health component of the project, adolescent girls and lactating mothers were addressed. Due to the fact that the mothers are very much involved in preschool activities, the girl child enrolment in preschools went up. The cyclone shelters have equal spaces for men and women and have access ramp for older and other vulnerable people. It was women's suggestion that bath space was provided with toilets.

There is anecdotal evidence that changes have occurred in household decision making process and the women are making decisions along with men.

3.2 Environmental Considerations

At the beginning of the project, key project staff was trained on environmental assessment tools as per the Aga Khan Foundation Canada's Policy on Environmental Sustainability. A series of environmental assessment reports have been completed for project activities and mitigation steps adopted. A pre-environmental assessment feasibility study has been completed for the evacuation road, shore based shelter, cyclone shelters, ponds, water management activities and sanitation units. As of October 2008, 2 periodic assessments have been completed and mitigation measures implemented for various civil works. One end-of-term Environmental Impact Assessment is planned on completion of the Project. Before launching the program they hired a environmental consultant whose inputs were taken in designing all the civil works.

3.3 Capacity Development

This is a capacity development project. Therefore, rather than Capacity Development being a cross cutting issue producing secondary results, it is the main theme of the project and is producing direct and primary results. Capacities have been developed/built of the CBOs (CERTs, VDCs, RARTs etc.) and their members as well as the villagers on disaster preparedness through supply or equipment, construction of infrastructure, and training in various aspects of operation and maintenance of these equipment and infrastructure, health and hygiene etc. The results have been discussed in Chapter 2.

4. RELEVANCE

The project was very relevant because it responded to need of the people in the coastal villagers who were very much vulnerable to storms and cyclones. The project has been linked with district level disaster management authority and is consistent with the AP Disaster Management and Preparedness plans. The Disaster Management Plans for each of the 15 villages have been prepared and 4 of them have been ratified by the appropriate Government bodies.

All the civil construction design as well as the design of the overall project were reviewed and accepted by CIDA. Therefore, it must be consistent with CIDA's tsunami reconstruction priorities.

The integrated project design was relevant because it responds to the vulnerability of people with respect to coastal storms and cyclones, health and hygiene, sanitation and water supply. The only adverse comment the Consultant has is that the BCC component with respect to garbage disposal and personal hygiene could have been a bit stronger to effectively produce positive results in those aspects of the project.

5. SUSTAINABILITY OF RESULTS

For this project, like any other development project, it is expected that the results and benefits will continue after the project finishes. However, to make the results sustainable the following measures have to be taken.

The physical outputs – e.g. cyclone shelters, shore based centres, stockpiles, road, water harvesting, collection & treatment systems, stand pipe & hand-pump platforms, sanitation units etc. - will continue to be there but will definitely need monitoring with respect to its maintenance. The villagers (VDC members) have been trained to maintain them but they would need money to buy spare parts. Some of the public structures have been taken over by the Government and these should be maintained by the government. The ones that belong to the village such as the stockpile some items can be rented out to the villagers and the money could be used for maintenance of the stockpile. The villagers would need refreshers' training as well.

Following are the activities (project investment) that have been carried out or suggested for sustainability:

The Disaster Management Plans for all the 15 villages were developed together by the community and Community Emergency Response Team (CERT) members. The Village Development Committee's (VDC) President and CERT Coordinator were actively involved in the preparation of the DM plans. Out of the 15 plans 4 plans even ratified by the Gram Panchayat. The community is oriented about updating the plans regularly and all the DM plans were subsequently updated. The plans indicate who will be responsible for regular updates. All 15 DM plans are reviewed with the Coastal resource centres (CRC). Copies filed at the CRC office.

All Community Emergency Response Teams (CERT) members have undergone basic and specialised training. A team of 30 CERT members have been selected to become master trainers in each of the specialized areas. The master trainers are now providing replication training (post follow up training) to CERT and other community members. This team of master trainers has been linked to the CRC and local Government authorities. 4 members are part of the CRC Executive. CERT members have participated in Disaster mock drills and will continue the practise on an on-going basis. All CERT members have been trained on disaster response and some have even received specialized training. They will continue to receive ongoing support from the master trainers. Mock drills and follow up sessions will continue with the assistance from the master trainers. VDC members are actively involved in the process.

CERT members trained in the use and maintenance of local stock piles. User manuals in local dialect developed and also are available at the stockpile storage site. Community members are trained in how to use these stocked items. Guidelines are available at the storage site for further reference. MOU for the maintenance and upkeep signed between community members, NCRC and Panchayat Raj and FOCUS India (FI)

RART members have received training. They are linked to the Mandal Revenue office and NCRC.

As per an agreement between District Administration and FOCUS India the EWS has been purchased through the District Collector's office. FI is responsible for the initial purchase, whereas the Collector's office is responsible for supervising the installation and for maintaining the system in future. As per the agreement, District Administration will be responsible for further maintenance of EWS equipment.

The evacuation road has been built in cooperation with the local government or district administration. Government has managed the construction of the road with technical inputs from AKPBS, and provided a financial contribution. The contractual agreement with government includes their ownership and regular upkeep of road in future.

The cyclone shelters are critical infrastructure assets which would be handed over to Panchayati Raj Department as per agreed MOU (clause- 1.5, 4.0). Regular upkeep and maintenance would be ensured by the Construction Committee. The utilization of the asset for alternative uses during periods of normalcy would also add to regular upkeep and maintenance of the structure.

The shore based shelters would be handed over to Panchayati Raj Department as per agreed MOU (clause- 1.5, 4.0). Regular upkeep and maintenance would be ensured by the user groups (fishermen's group)

Construction of Feeder Channels were undertaken in complete partnership with respective village communities. Feeder Channel would be handed over to village Panchayat and will be registered in Panchayat's books of Asset. Construction committees were trained for regular upkeep and maintenance. A maintenance calendar would be provided to the construction committee

The Robust water filters are registered under Panchayat's books of asset, regular upkeep and monitoring would be prime responsibility of construction committee. A maintenance calendar would be provided to construction committee.

Construction of fencing and lining of ponds have been undertaken with complete partnership with respective village communities. These would be handed over to village Panchayat and will be registered in Panchayat's books of Asset. Construction committees have been trained for regular upkeep and maintenance. A maintenance calendar would be provided to Construction committee

Water Distribution Systems would be handed over to village Panchayat and registered in Panchayat's books of Asset.

Improved tap/hand pumps will be handed over to village Panchayat and will be registered in Panchayat's books of Asset. Construction committees have been trained for regular upkeep and maintenance. A maintenance calendar would be provided to Construction committee.

Well covers have been handed over and registered in Panchayat's books of Asset. Construction committees have been trained for regular upkeep and maintenance. A maintenance calendar would be provided to Construction committee

Roof Rain water harvesting structures were handed over to village Panchayat and are registered in Panchayat's books of Asset. Construction committees were trained for regular upkeep and maintenance. A maintenance calendar would be provided to Construction committee

Sanitation Units have been handed over to individual families after orientation on maintenance and usage.

Training of health volunteers on health and hygiene - 11 Health Volunteers (HVs) under ASHA-RCH-II¹⁷ are appointed in government (DM&HO, IKP) as Community Health Volunteers- to serve in this region and are linked to the local PHC. 7 HVs have been Supported under Health and Nutrition Programme Implemented by and follow up by IKP

After training of villagers on good health and hygiene practices by the trainees they were linked up to CRC, IKP and Rural Water Supply (RWS).

Three (3) Trainings on Behaviour Change Communication were given to 28 volunteers. 10 best BCC trainers were linked up with CRC. BCC volunteers linked up with RWS and IKP. BCC materials have been provided to 2 primary health care centres (PHCs), 1 Community Health Centre and other local institutions, such as the Panchayat and other public offices. The remaining BCC materials were handed over to CRC.

Teaching and learning materials (TLM) were provided to 12 Anganwadi centres. These TLMs were handed over to ICDS. Linkages were established for future with CRC and ICDS.

5 of the 7 Anganwadi centres have been set up as model anganwadi centres. Linkages with ICDS was establishes for future operations. Teacher's manual in local language has been produced. This was handed over to ICDS and they will implement it in all centres

To conduct health camps in the future, linkages were established with the Primary Health Centres (PHC).

12 mothers committees were formed and supported and for the future linkages were established with ICDS. The Mothers' Committee in some of the preschools have started a bank account in which each mother whose child is in the school deposits a small fee per child so that the supplies could be purchased for the school and thus they can make the preschool operation sustainable.

The EWS can also be rented out and the revenue deposited in a fund for EWS repair. It is the understanding of the Consultant that the Government of Andhra Pradesh (AP) is planning to use the EWS for other purposes. According to the Consultant, such use of the EWS must fetch revenue and at the same time it will be operational.

As mentioned earlier, the resource pool members are asked by other projects to train their project beneficiaries or staff in areas on which the project has made them specialists. If these people are paid Rs.100.00 per day for the job CRC can charge Rs.150.00 for the same people and pay Rs.100.00 to the resource person and keep Rs.50.00 for the purpose of sustainability. This way it is not going to hurt the project which is generally funded by an international donor and the resource person also do not have to compromise on the fees.

¹⁷ (One of the key components of the National Rural Health Mission is to provide every village in the country with a trained female community health activist – 'ASHA' or Accredited Social Health Activist. Selected from the village itself and accountable to it, the ASHA will be trained to work as an interface between the community and the public health system.)

6. MANAGEMENT CHALLENGES

There were a number of challenges that the project team had faced and eventually overcame to implement the project successfully.

- The project villages were quite remote and 8 of the 15 of them are on islands. It takes a long time to reach the villages where there was no accommodation for the project personnel to stay overnight. Particularly during monsoon, most of the roads are treacherous. Also in a normal day one has to wait hours for the ferry.
- Ferry breakdowns were seldom, but happened quite a few times during the project which eventually led to cancellation of the trip to the island.
- Local contractors along with any skilled labour did not exist in the island and no contractor from the mainland would work in the island.
- Belief in *Vastu* became a real problem in all villages. The villagers, after they were given the sanitation unit, will not use it because it was opening in a certain direction.
- All the material in the island had to be taken by the boats and this limitation did cost the project a lot.
- Frequent changes in the government officials – particularly at the higher level – because the officials get transferred, added a lot of time to project implementation.
- Finally, it was hard to get good professionals to work for the project in such a remote area.

7. LESSONS LEARNED

- Third party monitoring (external) of the project activities should be done because there is an advantage in suggestions by a third party. It strengthens the project. Personnel who are implementing the project will have a rationale for the gaps and short cuts. It will be easy for them to justify the gaps and carry on with it. External monitoring is good with respect to project transparency as well. APR2D retained a monitor for the civil work.
- An interlinked multi-sector project is possible to implement and gives the recipient a complete project.
- If the project area is difficult to access, one should seriously take more time and resources during design.
- All the relevant government line departments should be involved in the Program. This will help in establishing linkages between the villagers and the line departments.
- It was a challenge to involve women equally at the grassroots level. This delayed the project implementation.
- Cooperation with government is a time consuming but essential process, particularly critical for the long term maintenance and management of infrastructure and disaster management systems. Slow government systems and processes can present challenges for time-bound donor funded projects.
- When the Government is in charge of construction quality control of construction could be a problem
- A high official in the Executing Agency should be involved to deal with a higher level officer in the Government. It takes time to make rapport with a new government officer.
- Coordinating all the trainees in a training program is difficult in a situation while dealing with migratory villagers.
- Synergy between multiple agencies working together in implementing a project is important for smooth implementation of the project.

8. OVERALL OBSERVATION AND CONCLUSION

Overall, the project was very well implemented. It is generally difficult to produce any significant result in a three-year project. In spite of the fact that it was difficult to get any good contractor to work in the island villages AKPBS-I have successfully constructed on time – the water tap and hand-pump platforms, feeder channels, ponds where lining and fence were provided, Robust Filter Systems, well coverings and the roof rainwater harvesting structures, a water distribution system, many sanitation units, 3 cyclone shelters, 2 shore based shelters, 15 village and 1 regional stockpiles, the Early Warning Systems in the 15 villages, in Nagayalanka and in Machhilipatanam as well as the Coastal Resource Centre in Nagayalanka, and a 5.75 Km road. All these structures were very well-constructed and now either handed over to the villagers or to the government as appropriate.

All the outputs and outcomes have been produced except the fact that the Consultant did not think the BCC volunteers and consultants did a good job in promoting environmental and personal cleanliness.

The government, at all levels, is very supportive of the project and indicated they will continue to support the villages and maintain the items which have been handed over to them.