Mangroves for the Future
INVESTING IN COASTAL ECOSYSTEMS

Strengthened capacity of children, communities and local government by better preparedness and mitigation of climate change and disaster risks in Kendrapara District, Odisha

Save the Children, India
December 2013 – June 2015

1. Project Details

Project Title:	Strengthened Capacity of Children, Communities and local government by better preparedness and mitigation of climate change and disaster risks in Kendrapara district, Odisha	
Project Number:	IUCN Project Reference No. 77663 - 014	
Project Duration:	Start date	10 December 2013
	Original End date	
	Final End date	10 June 2015
Project Budget:	MFF Contribution 1,042,000	Counterpart funds 118,000
Name of Organization:	Save the Children and Implementing Partner - Nature's Club.	
Contact Details: (Including telephone or email)	Ms. Jyoti Sharma National Manager- Institutional Partnerships, Resource Mobilization Email: j.sharma@savethechildren.in	
Report Submitted by: (name and position)	Mr. Bijoy Jose, Institutional Partnership Officer, Resource Mobilization	
Date of Report Submission:	7th July 2015	
Reporting period	Final Report	

2. Executive Summary

The Odisha coast possesses the most diverse mangrove vegetation in India. The Bhitarkanika Mangroves are located in the deltaic region of Brahmani and Baitarani rivers in the Kendrapara district of Orissa. The Bhitarkanika Wildlife sanctuary is situated near the former port, Chandabali, which is about 50 km from the Bhadrakh railway station.

Kendrapara district situated in a tropical sub-climate area on the eastern coastline of India faces Bay of Bengal on the sea level. The district slopes down to Bay of Bengal from 7.5 meters. It's densely populated coastal plains have alluvial deposits from its river systems. It is fertile yet highly erosive. In last 4-5 decades, banks have been eroded by the rivers as well as the sea. This has led to mass displacement amongst inhabitants. Three villages were completely submerged and four villages partially submerged by River Brahmani in Chandibaunsamula GP before the project intervention. The coast line along Bay of Bengal in Satavaya and Pentha has shifted 3-5 kms in-land, making the coastal settlements extremely vulnerable to disasters. In the district, the temperature varies between 15–40°C throughout the year, with an average yearly rainfall of 2033mm (District Disaster Management Plan).

The Gram Panchayats (GP) of Chandibaunsamula and Kandira in Kendrapara district are highly vulnerable and prone to disasters. Chandibaunsamula GP is 7-8 kilometres from sea by aerial distance and is situated on the bank of River Brahmani at the merging point of River Brahmani and River Kharasrota. River bank erosion has caused the disappearance of 4 villages in 40 years with two more which are at the verge of extinction. High river bank erosion and annual floods is a common feature of the Gram

Panchayat. The project villages of Chandibaunsamula GP were covered by child centred community based disaster risk reduction (CCCBDRR) project with the objective of building resilience among children and communities towards future disasters. On the contrary to Chandibaunsamula GP, villages of Kandira GP covered under this project never had that kind of intervention. The project design was intended to supplement CCCBDRR project and collectively increase resilience of the children and communities in the project intervention area towards disasters and climate change risks.

The objective of the project was to strengthen and sustain community stewardship in conservation, restoration, sustainable management of mangroves based on scientific principles, taking into account the vulnerability of the region to natural disasters, sustainable livelihood security for local communities and conservation of ecologically significant natural resources.

The focus of the project was to empower local communities in sustainably managing and conserving the mangrove resources in partnership with other stakeholders, making all accountable for the results of this stewardship. The interventions were intended to result in reduction in mangrove over-use and creation of new mangrove forest, to minimize the dependency of people on mangrove forests, and to improve the skills for alternative livelihoods. Restoration of mangroves will protect of the hinterland from periodic cyclones, super cyclones and tsunami, etc., which is very common in this region. In addition, it will help in increased fish, crab population and other biodiversity as well as check soil erosion.The Project aimed to educate communities on mangrove ecology, built local skills on mangrove regeneration and make systematic community based DRR and CCA response plans with Mangrove regeneration and its protection as action points.

This project successfully replanted 25000 mangrove seedlings in 6 Ha area as planned during the proposal stage. 26 species of Mangroves and mangrove associates are planted to enhance the local biodiversity. Similarly as per the project plan Nursery is developed in Balarampur village and 60000 seedlings raised through the intervention. Information, education and communication (IEC) materials have been procured and prepared through various sources with one poster and one leaflet folder on mangroves and benefit of mangroves which has been disseminated to the family level. Communities have identified mangrove plantation and protection as disaster risk reduction (DRR) and climate change adaptation (CCA) action points which have been incorporated in the Gram Sabha resolution.

3. Background of the Project and Project Rationale

Kendrapara district in Odisha state, situated on the coast and between 3 large river systems is highly vulnerable to multiple-hazards in the state. Due to its sub-tropical littoral location, the coastline of the state is prone to tropical cyclones, storm surges and tsunamis. Its densely populated coastal plains are the alluvial deposits of its river systems. The rivers in these areas with heavy load of silt have very little carrying capacity, resulting in frequent floods, only to be compounded by breached embankments.

The devastating impacts of the super cyclones in 1971 and 1999 have triggered strong actions towards implementing Disaster Risk Reduction (DRR) measures in the state of Odisha, particularly along the coast lines. At the same time the sea ingress in Satvaya and Pentha highlight the changes taking place due to climate change. Precious landmass created over thousands of years has been disappearing alarmingly in last 4 to 5 decades. Loss of vegetation and/or forest cover has also been a major cause of land erosion. Cyclonic storm and tidal surge are risk to livelihood as much to life. Agriculture fields are inundated with saline water and crop is damaged which is the mainstay of local livelihood. The impact of salinity at times affects cultivation for couple of years.

The ecosystem is highly fragile and communities have been losing a lot of fertile land needed for agriculture, grazing, and settlement. Environmental degradation from agricultural activities at river banks

is increasing the rate of soil erosion. Farmers are forced to send their buffalos grazing on the soil bunds protecting their paddy fields and in the mangrove forests protecting the river banks. Breaching of the river banks is a common threat to the farmers. Natural protection mechanisms such as sand dunes, river banks, tree lines, mangrove forests, and wetland grasses have started to disappear and have left highly silted water and barren mud plains.

The Bhitarkanika National park used to be a sanctuary from 1975 to 1998 and was an important source of construction materials and other forest products for the surrounding villagers. Before 1975 it was free for all and large patches of luxuriant mangroves were cleared. Since it has become a national park, access to these resources has been prohibited for all villages and they have been forced to look for resources elsewhere. The National Park has started activities to restore mangrove forests and protect habitats of a wide range of species.

The communities of Rajnagar block are at high risk due to annual river floods causing temporary water logging, soil erosion causing loss of agricultural and habitable land, and seasonal storm weathers causing heavy rains/coastal surges that negatively affect their livelihood/surroundings and block access to life-saving facilities.

Project Rationale

Save the Children in Odisha with support from Mangroves for the future had prioritized on Mangrove plantations for numerous reasons. Mangrove plantation was promoted in these localities to play a critical role to stop the gust winds, tidal surge and protect the coast. Mangroves play a critical role to protect the saline embankments and retard the force of water and wind.

The project was implemented in 11 villages of Rajnagar block, Kendrapara district, Odisha. It has facilitated knowledge and skill development on mangroves, nursery development and plantation. The intervention was designed to support the continuing child centered community based disaster risk reduction (CCCBDRR) project and had been one of the DRR action points of the local communities. The key deliverables of this project are:

I. 6 hectares of mangroves land replanted with 25,000 Saplings
II. Women Self Help Groups led mangroves nursery was developed to raise 60,000 saplings
III. 1000 days of labour were created through this project
IV. Active engagement of the local Community and key stakeholders (local governance and government) in mangroves re-plantation, protection and monitoring.

Since mangroves depletion is identified as one of the leading causes of recurrence of natural disasters in Rajnagar-Kendrapara. The project aimed to address the depletion of mangroves in Rajnagar block of Kendrapara, Odisha. Re-plantation of mangroves has helped reduce the risks of disasters and climate change in this disaster-prone administrative block of Kendrapara. Local capacity building of community based and local governance structures was being under taken by an on-going Save the Children's Child Centered Community Based Disaster Risk Reduction (CCCBDRR) project in Chandi Baunsamula Gram Panchayats, one of the two Gram Panchayats in this intervention.

Since this intervention was intended to support the Child Centered Community Based Disaster Risk Reduction project, the collective change sought by the project has increased resilience of communities in the project intervention area towards disasters and climate change risks.

The communities have developed skills to mitigate disaster risks through the process of re-plantation of mangroves. They have also generated a community based income generating mechanism through an active mangroves nursery. As mangroves re-plantation looks at the long term aim of reviving the local

communities' prime occupation of agriculture, the communities are envisioned to achieve better means of tackling hunger and poverty and curb distress migration. This was expected to deliver better and safer environment for child development in the project villages. The mangroves cover, regenerated through plantations will act as a natural cover to the risks posed by changing climate.

Local communities' need of using mangroves for their daily needs (firewood, agriculture and housing equipment) puts them in a direct confrontation with the government forest department. Technical support sought from the Forest Division Office in achieving the project activities has also brought about a positive change in the relationship between the government department and local communities.

The demographic of the project villages is provided in Annex 1.

4. Impacts of the project:

A. Program Impact through our awareness building initiatives in Intervention areas:

Key Activities under the awareness building initiative is intended to raise awareness among beneficiaries on the importance of mangrove plantation, strengthening children and elders' participation in protecting the mangroves. Project also focused on enhancing children's groups and village level groups toward common objectives in ensuring land protection/ enhancement etc.

- Increased Awareness: Orientation were done at cluster level bringing different communities together. Intra community and intercommunity relationship got strengthened due to this. Protection of mangrove plantation sites also strengthened due to improved relationship for example between Nuagaon and Balarampur. Through our intervention there has been a noticeable change among communities towards their awareness level on the importance of Mangroves and their active participation in the plantation/ replantation of mangroves

- Engaging participation and learning exposure for 1140 children, women and men through rallies, drawing competitions, debates and visits to mangrove forests

- Nearly 1062 families have been reached out through IEC materials and compiled information that has been disseminated in a very large way. Mangrove experts from Forest department helped in designing the IEC materials

- 10 Village level institutions, neighboring communities, Government organizations and Forest department were also reached

- Increased awareness of different target groups like the children's groups, community institutions and Women Self Help groups (WSHG's) through the intervention

- Improved rapport and strengthened relationship among multiple stakeholders- project staff, forest department, gram panchayats, the women self-help groups (SHG's) and community.

- Increased participation among children in the school and village level activities. Programs like **Van Mahotsav** is an annual tree-planting festival in India, celebrated in the first week of July. This movement was initiated in the year 1950 by India's then Union Minister for Agriculture, Kulapati Dr. K M Munshi. It has gained immense national importance and every year, millions of saplings are planted all across India in observation of the Van Mahotsav week and visits by experts and dignitaries further contributed to the cause.

B. *Program Impact through capacity building programs in Intervention areas:*

Although mangroves contribute to the economy in many ways, these benefits are not obvious like the benefits from cultivation in the same area of a commercial crop such as sugar cane or bananas among communities. It has taken time and continuous effort to help communities understand that mangroves are essential to maintain coastal fisheries, protect property and coastlines from the effects of cyclones and storms and protect coral reefs from sediments and pollutants. Mangroves were frequently seen as expendable and little care is taken of them. Some of the key impacts that have been witnessed include

- The project with support from MFF-IUCN has Strengthened Community Capacity and Ownership with requires skillsets and capacities at the village/ gram level on land preparation, mangrove plantation and nursery development. Capacity building also developed a perspective towards mangroves and mangroves as a part of micro-ecosystem. Though the real impact or result will take a decade to manifest but a vision is developed among the community members.

- Child Participation: The maximum impact this project has made is on the young generation. Both boys and Girls took lots of interest and they will be the main sustainability factor for this intervention.

- Larger Convergence: Strengthened relationships and improved rapport between key stakeholders including the Gram Panchayats; Forest Officials and Communities

- Visually the plantation sites now look like a small village forest coming up. The ownership felt by the community is protecting the sites. In most cases the seedling to sapling and replantation was carried out but the real impacts shall be evolved after the trees are grown up.

C. *Program impact through advocacy, networking and research*

Activities were also undertaken under **advocacy, networking and research** through this project. Mangrove plantation as effective DRR and CCA action points was advocated with Gram Panchayats, Panchayat samities, Government officials and local political leaders. Observation of vanamahotsav in the project villages with Mangrove seedlings ensured project visibility at block and district level. Throughout the project period forest officers made visits and supported us as and when needed. They are also helping us in profiling the plantation sites for better monitoring and evaluation.

- Partner NGO was felicitated with PRAKURTI MITRA award by Government of Odisha. This is a sub-district level award given by Ministry of Environment. And Forest, Govt. of Odisha to institutions/ organizations for their contribution to local aforestation and protection. This year 2015, Save the Children's local partner Nature's Club partly supported by MFF, through this project was given the award contributing to the selection criteria for the intervention.

- Panchayati Raj Institution (PRI) forms a part of the local self-governance. Bodies in India. It is a, 3 tier system from Panchayat to Zilla parisad.PRI have shown their interest to provide free land for mangrove replantation in the barren land within Gram Panchayat.

- Enhanced participation with stakeholders in schools in the process of mangrove replantation. School children are keen to participate in the mangroves replantation.

- The Forest Department is committed to support future replantation of mangroves in the Bhitarkanika sanctuary. However, they are looking for support from external players in regeneration efforts; they were particularly happy that the community had provided private land.

5. Activities completed:

Activities relating to increase in awareness level and development of knowledge base strengthened:

1. Formation and strengthening of 11 Children's Groups were developed under CCCBDRR project (6 villages) and formed in 5 villages. SC ensures child participation in all its interventions with the intent of enhancing their awareness and sustainability of the project in the future, the project reached nearly 300 children through the activities

2. 28 WSHGs (10 to 15 from each village) around 531 members and community institutions at village level which was taken further with Gram Panchayat.

3. 20 Awareness campaigns with regular village level meetings which helped in good relationship among Women SHGs and community at large created a common agenda and ensured maximum participation of girls and women in program activities. Children participation is ensured at school level and at village level.

4. Rallies, drawing competitions, debates and visit to mangrove forests continued people's participation and people's learning. 1140 people- children, women and men participated in these campaigns.

5. IEC materials and compiled information were disseminated in a large way to reach maximum households. Nearly 1062 households are reached with these IEC materials. Village level institutions, neighboring communities, Government organizations and Forest department were also reached. Mangrove experts from Forest department helped in designing the IEC materials. Programs like Vanamahotsav and visits by experts and dignitaries further contributed to the cause.

Key Activities undertaken towards Capacity Building/ Skill Building initiatives

1. The mangrove plantation and nursery development took place due to the capacity building and capacity support provided.

2. The major component was Skill / Capacity building of the community groups at village level. Specialist trainers/Experts from Forest department provided trainings to the community volunteers (95), WSHG members (531) and VDMC members (93). Training on land preparation, mangrove plantation, nursery development were the main components.

3. Experts on mangroves taught the community people on types of mangroves, different species and their ecosystem, land preparation and plantation. Similarly nursery development was facilitated by experts from forest department.

4. VDMC members were given training on mangroves and its regeneration as DRR and CCA action point followed by refresher trainings.

5. 25000 mangrove seedlings of 26 species were planted in three patches.

6. A nursery of 60000 capacity is also established with local WSHGs.

Key Activities undertaken towards advocacy, networking and research under the project

1. The third group of activities advocacy, networking and research were also done through this project. Mangrove as effective DRR and CCA action points was advocated with GPs, Panchayat samities, Government officials and local political leaders.

2. Observation of vanamahotsav in the project village with Mangrove seedlings made the project visible at block and district level.

3. Throughout the project period forest officers made visits and supported us as and when needed. They are also helping us in profiling the plantation sites for better monitoring.

6. Achievement of Objectives and Results (=Outputs)

A. 25000 of Mangrove seedlings are planted in 6 ha of land area. Local community took the lead, provided the land and continues to protect the plantation sites. 26 types of mangroves and mangrove associates are planted creating a healthy diversity. Local community believes that this diversity will expand the biodiversity of the local ecosystem so that they will have a spectrum of benefits such as : – Mangroves protect arable land from saline inundation and increase/maintain the productivity. Diversity of mangroves will produce all season honey; usage as fodder; fruits that can be consumed as vegetables; medicinal values of mangroves are at an exploration stage; use for making agriculture equipments; etc.

B. The forest department - Mangrove Forest Division Wildlife (MFD-WL). Divisional Forest office at Rajnagar is named as this. MFD-WL, Rajnagar) acknowledged that this was a unique pilot community-led plantation, in that the community provided their own land for the plantations. They hope this will encourage other villages to regenerate mangroves in waste land patches for increased benefits through sustainable management of the mangroves over the longer term. These kinds of endeavors will support preservation of the Bhitarkanika mangroves and will reduce pressure on the mangroves protected within the national park.

C. At the beginning of the project local communities had critical views about forest department and they were not at all ready for mangrove plantation and to take help of forest officials. There was a clear communication gap between them. This project helped in reducing tension and creating mutual faith among them. As narrated in the case story community and Forest department witnessed larger conflicts and did not meet eye to eye. Some activities and in particular the Mangrove plantation is a key activity through which we have promoted interaction and rapport between the community and Forest officials. Regular interaction through visits and capacity building programs has helped strengthen the relation.

D. Community lacked the awareness of the benefits of mangroves, its ecological and DRR roles. Mangroves were being over exploited. Community knowledge on benefits of mangroves encouraged Gam Panchayats (GP) to openly support mangrove plantation and protection, mainly in Gram sabhas. Attitude and practice towards mangrove protection has changed considerably among community children and adults and also impacted the local Gram Panchayats. The benefits of mangroves in terms of DRR and CCA, protection against land erosion and productive livelihood option has been understood by the community and local opinion makers.

E. Children and Community have included mangrove regeneration in village CCDRR action plan. These action points were also included in the GP plan through Gram sabha. Community level development/review of village CCDRR plans included regeneration of mangroves and their protection as the DRR and CCA action points. These points are then submitted at the Gram sabha and after discussion were included in the GP plan. GP plans were then forwarded to block level for inclusion in annual planning process. Head of the Gram Panchayat (Sarpanch) and other PRI members facilitated the process of inclusion.

F. The project was appreciated by Forest Department in many community meetings that the department organized and in other platforms as new kind of initiative which involved healthy community participation. Moreover the land was provided by the community people of the said village.

Intervention Logic	**Objectively Verifiable Indicators (OVIs)**	**Source of Verification (SoV)**	**Progress Towards Achieving Objective and Results**
Goal			
Contribution towards building resilience of children and communities to climate change vulnerabilities and disaster risks	Community members are well-informed and aware about climate change vulnerabilities and disaster risk reduction	Key Informant interviews Focused Group Discussions	*Community is now well informed, identifies its vulnerabilities to disaster risks and Climate change. Example: provided land and participated in replantation work.*
Objective:-Strengthened capacity of Children, communities and local government by better preparedness and mitigation of climate change and disaster risks in 11 villages in Rajnagar block, Kendrapara district, Odisha.	Panchayat prioritizes mangrove as key strategy for climate change adaptation and disaster risk reduction and allocates resources	Panchayat Gram Sabha Meeting Minutes	Sarpanchs facilitated community mobilization and also in incorporating need of Mangrove plantation in Gram sabha minutes.
	Village Disaster Management Committee (VDMC) in 11 project villages takes responsibilities for monitoring mangrove plantations	Minutes of VDMC meetings	VDMCs and communities at large are involved in developing awareness on protection and preservation of mangroves in 11 villages
Results			
1. Increased awareness of communities and local governance	Extent of new mangrove plantation (6	Village report	*6 Ha of land mass is replanted with*

Intervention Logic	Objectively Verifiable Indicators (OVIs)	Source of Verification (SoV)	Progress Towards Achieving Objective and Results
structures on replantation, protection and sustainable management of Mangroves.	Ha)		*25000 mangrove seedlings*
	At least 80% of village population reached through awareness campaign	Reports Photo	*10 Schools and 28 WSHGs were the main participants reaching the larger community with Rally, IEC materials and school competitions.*
	Community, WSHG, GP undertake protection of plantation site More than 60% of community is involved in plantation/ protection/monitoring work in plantation villages.	Village report Photo The case study of Nuagaon village presented in this report that how these villages are involved.	*Community , WSHGs and GPs are protecting the mangrove plantation sites*
	Village DRR plan contains mangrove protection guidelines	Village DRR plans	*Recommendations from villages through Village DRR plans for mangrove regeneration and protection were included in GP Plan through Gram sabhas*
2. Strengthen local capacity, through replantation and protection of mangroves, towards climate change adaptation and disaster	Forest Department conducted 20 trainings for women self-help groups on mangrove plantation and management	Training report	*20 trainings in 3 phases is completed with support of Forest officials*

Intervention Logic	Objectively Verifiable Indicators (OVIs)	Source of Verification (SoV)	Progress Towards Achieving Objective and Results
risk reduction			
	25000 mangrove saplings planted covering 6 ha of land	Muster Rolls Saplings	*25000 seedlings replanted in 6 ha of land*
	Village Disaster Management Plans incorporate protection and community monitoring protocols for mangroves	VDMPs	*Mangrove plantation, protection needs are included in VDMPs and recommendations to this are included in GP Gram sabha minutes*

7. Cross-cutting issues:

The communities in Rajnagar district face flooding and natural disaster events on a frequent basis; the resultant salinity ingress is a significant threat. As the community is largely agricultural dependent, this imperils their income and food security. The mangrove plantations are predominantly located between the river and the agricultural fields, and are a natural barrier to flooding and storm related events. As such they constitute a nature-based solution to the imminent threat of the impacts of climate change. In recognition of this, and through efforts made through this project, the regeneration/plantation of mangroves has been included in the action plan against climate change by the Gram Panchyat, through the Gram Sabha.

8. Interesting stories (1-2):

Village –Nuagaon

The Story is about the role of the community in Nuagaon village leading the process of Mangrove replantation. In the highly populated coastal habitations land for mass plantation is always scarce. Mangrove re-plantation is not traditionally preferred by the village communities and land owners as Mangrove is in the list of most threatened ecosystems and once it is planted the land area will remain dedicated to Mangroves under Indian Law.

The initial interaction with community leaders of Nuagaon village came after we indentified a patch of suitable land for mangrove regeneration under this project. The interaction was mostly on the land ownership and its availability for mangrove regeneration. The first part of the interaction was about mangroves, history of mangroves in the village, benefits of mangroves. Then we inquired about the land patch and it was found that they officially belong to some households in the village. We put forward the proposal of Mangrove regeneration in the patch of land. It was a community

meeting and most of the owners were present. The meeting was conducted by the designated Headman of the village Akshaya Samal who was selected by the villagers to lead the village, in the traditional process. Community Okayed the proposal and agreed for 4 Ac area plantation. Till then we were received well and reciprocated well.

The twist came when we said that Forest department will be one of the major stakeholders of the endeavor, with all its seedlings and knowledge base resources. They bluntly said no to any partnership with Forest department. They including women and children even refused to entertain any forest official in their village. It was found that villagers did some avenue plantation of Acacia and Eucalyptus trees and couple of months ago when the road widening was started to make it all weather road all these trees has to be removed. Villagers harvested them and put the amount in the village fund for future plantation after road widening is done. Receiving a complain on this matter the Forest range officer took his team to the village, seized few trees and booked 4-5 people including the Headman under different acts of Environmental protection Law. They were kept one day in custody for inquiry. The whole village went to the DFO office in protest, staged a dharna and shared the whole story with the forest officers including Forest range officer. The issue was understood by the Forest officers and the villagers were freed. But it affected the sentiments of the villagers and when we put the proposal before them with Forest department as one of the key resource agency, the whole village vehemently opposed. Mr. Akshya Samal on behalf of the village said "Nature's Club is welcome to do the plantation and any other work. The whole village will participate, contribute land and protect the forest. But if the Forest department is involved Nuagaon will not be a part of the project. We have decided to oppose any work in which Forest department is involved".

It took us few meetings and discussion with villagers and Forest Range officer and after much persuasion Mr. Akshaya and a couple of leading villagers agreed to talk to the Forest range Officer. The discussion resolved the issue and any miscommunication between them were clarified.

After that the whole Nuagaon village participated in awareness campaign and placed the whole patch of land 10 acres for plantation. The success story of community offering revenue land for Mangrove plantation motivated the neighboring village Balarampur later on to provide 5 acres of land.

9. Communications and knowledge products

Please provide a table of publications, posters, brochures, photos, videos, etc. in the format below:

Description of the product	How was this product used?
(a) Poster on importance of mangrove with a call for Mangrove regeneration and protection in local language. 1000 copies	Displayed in community interactions, disseminated at household level, displayed in schools, shared with other NGOs. 50 copies shared with Forest department, 100 with Save the children.
(b) Information folder on IUCN MFF project and benefits of mangroves. 1000 copies in local language and 500 in English.	Disseminated at household level, shared with other NGOs, schools. Shared with forest department (50 each) and Save the Children (100 each)

10. Major constraints and challenges

a. The biggest challenge faced in this project is availability of mangrove seedlings of required species and numbers. Mangrove Forest Division Rajnagar is the largest producer but they do it for their own use. Barring couple on NGOs and individuals who also had their own requirements, mangrove seedlings are very scarce to find.

b. This project has developed a nursery of mangrove and mangrove associates of 60000 capacity to facilitate mangrove regeneration by local communities and institutions. Getting seeds for nursery in time was another difficulty we faced.

c. Mangroves were erased by the older generation and the younger generation did not have much knowledge on mangroves.

d. Adult crocodiles (3-4 nos) are lurking near the plantation and nursery sites and this is cutting down our working time. There have been recent cases of loss of small livestock from the adjacent fields. Encounter with a villager happened July month when he was fishing. He and his little daughter survived narrowly as the fishing net luckily landed on the approaching croc. These incidents and direct sighting of crocs in the plantation site is limiting the work hours as well as the number of villagers participating. Similarly in the nursery site crocodile presence has al so limiting our movement mainly for mud collection.

e. DRR was not introduced to villages of Kandira GP villages and was not a priority with community living with recurring Disaster: Disaster was a part of their life. Disaster preparedness and DRR was not in their agenda.

f. Fund for nursery development was not adequately provisioned in the budget.

g. Heavy vehicle movement and road widening has also damaged the fencing of the plantation and nursery which had to be replaced and shifted.

h. The first nursery site in Hansina village was damaged by floodwater standing that bit long. Nearly 6000 seedlings were damaged. It took some time to identify another site at Balarampur and get community's consent for developing nursery there. The whole process had to shift to Balarampur. As per the financial loss it was nearly INR 15000.

i. This project was planned to converge with the CCCBDRR project at least for one year. But the CCCBDRR project was over when this project started. The resource support available with CCCBDRR project could not benefit this project. As a singular project this faced human resource crunch.

11. Lessons learnt

- Better budgeting for nursery as the input requirement is very high.

- Increased need for community interactions with experts and researchers on benefits from mangroves mainly on livelihood subject would have been more benefitting. But its difficult for the experts to find out time for such activities.

- More information on benefits of mangroves and sustainable mangrove management model is needed from IUCN that can be disseminated to the community.

- This project running for 18 months and having no exit thought process makes the initiative vulnerable due to short time and closure of the project makes the institutions, communities and children especially, will erode their faith in mobilisation process. The plantations are young so also

the nursery (less than one yr.) and need few months longer support to strengthen the initiative. There is still a need for resources to support the nursery and continue the intervention to its sustainable end.

- Children are the most active and committed participants. The Sustainability of the initiative in the longer run- With children being participants, taught on the need/ benefits of Mangroves- they are more inclined to act as change agents for its protection and conservation. They will also see many of the seedlings/ plants that are planted and grow with the Mangroves.

Annex 1.

GP	Village	HH	Population	SHG	SC	Ag. Land	Landless	APL	BPL	Village Grazing land (Acre)	Grama Jungle in Ac.
Kandira	**Hansina**	47	332	2	*	198	12	7	40	8	3
	Hansua	152	721	3	*	413	43	7	145	12	5
	Nuagoan	65	543	6	*	267	13	30	35	7	3
	Balarampur	181	765	5	240	875	52	49	132	15	3
Chandi Baunsa Mula	**Dholamara**	121	787	7	59	175	53	81	40	9	1 1/2
	J.C Pur	185	1075	5		215	36	10	175	7	3
	L.N.Prasad	37	172	3		160		12	25	25	2
	Kusunpur	67	427	5		128		30	37	8	4
	Palanda	28	189	2	*	103	12	19	9	9	3
	Dakhinabheda	74	392	5		78	13	26	48	5	2
	Chardia	105	625	5	11	213	25	25	80	10	3
		1062	6028	48	310	2825	259	296	766	115	31