



# Kai's Village Orphanage Sustainable Farm Project Cambodian Rural Development Team (CRDT) 2007 – 2008 Concept Paper

## 1. Executive Summary

- 1.1 Project Name** : Kai's Village Orphanage Sustainable Farm Project
- 1.2 Agency** : Cambodian Rural Development Team (CRDT)
- 1.3 Project Location** : Kai's Village Orphanage, Kilometre 86, Highway No. 4, Komong Speu Province
- 1.4 2007-2008 Budget** : **\$ 29,421 USD (Secured: \$21,875 USD)**
- 1.5 Amount Requested** : **\$7,546 USD**
- 1.6 Administrative Data** :
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  - Title : Executive Director
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- 1.7 Bank Information** :
- Name of Account : Cambodian Rural Development Team
  - Account # : 1600-20-179519-1-7
  - Bank Name : Aceda Bank
  - Bank address : Kratie Branch, Kratie, Kingdom of Cambodia
- 1.8 Project Period** : September 1<sup>st</sup>, 2007 – August 31<sup>st</sup>, 2008
- 1.9 Planned Reporting/  
Evaluation Dates** : Interim Narrative and Financial Reports 2006-2007



## 2. Background of Cambodian Rural Development Team

The Cambodian Rural Development Team formed in 2001 as university student initiative to undertake development projects which improve the living standards of subsistence communities in rural Cambodia. The teams' projects generate environmentally positive sustainable development outcomes, when renewable resources and appropriate agricultural technologies are skilfully combined in partnership with the beneficiaries themselves.

Since 2004, CRDT have been working in collaboration with international and local conservation organisations, and a wide range of government agencies, to deliver community and rural development in support of conservation of critically endangered Mekong River Irrawaddy dolphins. Since 2004 the team have worked with eleven villages situated on the banks of six critical habitat areas for the dolphins.

The initial pilot project (2004), in Kampi Village of Kratie province, was funded by AusAID, through the CDF also funding for wells was provided by MiVAC . The second pilot project, which built on the experiences and successes at Kampi, was very successfully performed at three villages on the Cambodia/Lao border, with funding from NZAid, the Pro Victimis Foundation, and the Williamson Wedding Fund. All of these activities are implemented in close collaboration with the WWF - Cambodian Mekong Dolphin Conservation Project (CMDCP).

All CRDT members are university educated, yet all are from rural backgrounds and therefore share a unique understanding of the hardship and poverty which face many remote communities in Cambodia. The team spend the majority of their time living and working in the villages directly with beneficiaries.

#### **Vision:**

***“A Cambodia free of poverty and environmental degradation.”***

#### **Mission:**

***“To improve food security, incomes, and living standards of subsistence rural communities in support of environmental conservation throughout Cambodia.”***

### **3. Background of Organisation Management Structure**

CRDT is managed by an Executive Director, with guidance from an expatriate Management Advisor and oversight from the five-member Board of Directors. Financial matters are managed by a Finance Officer, with support from a Finance Advisor. There are three Project Coordinators, with a wide range of technical skill and experience in appropriate technologies for development, complete the core team. In addition, there are several Project Officers who assist with project implementation.

CRDT also runs a volunteer and a trainee program, which both provides experience to young graduates, and allows CRDT to identify outstanding candidates for future employment opportunities

### **4. Previous and Current Projects**

<b><i>Dates, Project Funding</i></b>	<b><i>Project, Location</i></b>	<b><i>Donors, Partners</i></b>
January 2008 – December 2009 US \$35,000 (exact total unconfirmed)	<i>Sustainable Land Use and Management for Ethnic Phnong Communities Project (Second Year)</i> Andong Krolung and O'Ronna Villages, Monduliri Province Seima Biodiversity Conservation Area	Wildlife Conservation Society (WCS)
December 2007 – November 2009 US \$94,000 (confirmed)	<i>Dolphins for Development: Chance for Survival Phase II</i> 9 villages (3 follow-up) in Kratie province and 10 villages (5 follow-up) in Stueng Treng Province adjacent to the six most important habitats for the remaining Mekong Irrawaddy Dolphin	Fundacion Promocion Social de la Cultura, WWF Germany (total unconfirmed)  Pending: Oxfam GB (Kratie), Ford Motor Company
September 2007 – August 2008 US\$21, 875 (confirmed)	<i>Kai's Village Orphanage Sustainable Farm Project</i> Kompong Speu	Society for Orphan Support (SOS)
January 2007 – December 2007 US\$ 31,481	<i>Sustainable Land Use and Management for Ethnic Phnong Communities Project</i> Andong Krolung and O'Ronna Villages, Monduliri Province Seima Biodiversity Conservation Area	Global Environmental Facility / UNDP Wildlife Conservation Society (WCS)

December 2006 – November 2007 US\$ 69,500	<i>Integrated Development for Damrei Phong Project</i> Eight Villages in Damrei Phong Commune, Chhlong District, Kratie Province	AusAID Community Development Fund (CDF) The McKnight Foundation <i>Partners for Development</i>
January 2006 – December 2007 US\$ 174,505	<i>Dolphins for Development: Chance for Survival</i> Ten villages in Kratie and Stung Treng Province adjacent to the six most important habitats for the remaining Mekong Irrawaddy Dolphin	The Pro Victimis Foundation, WWF Germany <i>Cambodian Mekong Dolphin Conservation Project</i> <i>World Wildlife Fund Cambodia (WWF)</i>
January 2006 – December 2006 US\$ 40,000	<i>Rural Development and Sustainable Agriculture in Support of Participatory Land Use Planning and Biodiversity Conservation Project</i> Andong Krolung, Monduliri Province	European Commission / UNDP / SEARCA <i>Wildlife Conservation Society (WCS)</i>
January 2005 – December 2006 US\$ 36,770	<i>Dolphins for Development II</i> Chheuteal and Anlong Svay Villages, Stung Treng Province	NZ Aid, The Pro Victimis Foundation, Eau Clair Quebec-Cambodia <i>Mekong Dolphin Conservation Project</i> <i>World Wildlife Fund (WWF)</i> <i>Mike Roberts(MiVAC)</i>
February 2005 – December 2005 US\$ 10,000	<i>Wedding Island Project</i> Lngor Island, Stung Treng Province	Williamson Wedding Fund <i>SEILA Programme, Commune Council</i>
October 2004 – September 2005 US\$ 5,950	<i>Training for Development</i> Training and equipment purchase	Australian Embassy, Phnom Penh Direct Aid Programme (DAP)
August 2004 – December 2004 US\$ 22,530	<i>Dolphins for Development</i> Kampi Village, Kratie Province	AusAID Community Development Fund (CDF) MIVAC – Mines Victims And Clearance Trust <i>Mekong Dolphin Conservation Project</i> <i>Wildlife Conservation Society (WCS)</i>
July 2004 US\$ 6,000	<i>Water Supply Project</i> Tum Nub Village, Pailin Municipality	MIVAC – Mines Victims And Clearance Trust <i>Cambodian Border Development Organisation</i>
January -July 2004 US\$ 13,511	<i>Cooking with gas – Biodigester, water supply and farmer training project</i> Tamoung Village, Takeo Province	AusAID Community Development Fund (CDF) <i>University of Tropical Agriculture</i>
October 2002 – September 2003 US\$ 15,113	<i>Agricultural Training Centre Development</i> Popeil Commune, Prey Veng Province	AusAID Community Development Fund (CDF) <i>Maharshi Vedic University</i>
May-July 2002 US\$ 2,808	<i>Village education, and the installation of water and biodigester supply</i> Lngeang Village, Kompong Cham Province	Australian Embassy, Phnom Penh Direct Aid Programme (DAP) <i>Maharshi Vedic University</i>

## 5. Problem Analysis

Kai's Village Orphanage is located at Kilometre 86, Highway No.4, Kompong Speu Province (close to the turn-off to Kirirom National Park). This orphanage is currently home to some 43 children, including more than 20 infants under the age of one. Land resources consist of approximately 7 hectares of land (which has been converted to a Mango Orchard) with one section along side a 15 meter stretch of Highway No. 4. The most notable building infrastructure consists of: two residence homes, an open air school for teaching English, a medical centre, a latrine, a cattle barn, a chicken pen, and a water tower. Currently, there is a concrete dining hall being constructed (almost completed). The other major feature on the land is a large newly excavated pond approximately 45m x 35m x 3.5m.

Although there appears to be adequate resources on the orphanage land, the “Society for Orphan Support” which operates the premises, does not appear to have the capacity and adequate staff to use the land efficiently. Problems faced by the orphanage are as follows:

- Due to the isolated location, the orphanage currently faces regular water shortages as there is no central water system. Water is currently being pumped from several open wells to two water towers. There is also a bore hole (near one of the water towers) approximately 10 meters deep, however, it is not enough and needs to be drilled deeper in order to access ground water levels.
- The land is currently being used as an orchard with limited usage for growing vegetables for consumption by the children.
- There are more than 400 mango trees planted on the land, but there is limited success in producing fruit for sale to assist purchasing food for the orphanage and the orchard is infected with a pest/disease.
- There is currently a herd of 13 cattle which were intended for sale to purchase food for the orphanage, yet they are not as productive as they could be due to limited understanding of animal husbandry techniques and difficulty meeting their food requirements.
- There is a chicken pen which is not being used due to fears of bird flu. In addition, there are other opportunities for raising animals, but not yet being taken advantage of.
- There is a large pond in the centre of the land, but as of yet, its not being used to its full potential.

There are more than 43 mouths to be fed on a daily basis and the orphanage staff are currently purchasing most of their food from a local market which is an unsustainable approach to managing the premises given the available land resources. In order to assist the orphanage in improving the efficiency of caring for the children, several steps must be taken to develop its agricultural outputs in a sustainable manner.

One such way to address the problem of sustainability at the orphanage is to develop the 7 hectares of land into an integrated farming system capable of producing enough food on an annual basis, or at least significantly subsidize the costs that orphanage is currently spending on feeding the children. Such an integrated farm would require responsible utilization of available resources on the land, implementing techniques to improve agricultural outputs, and introducing simple, but effective rural technologies that can vastly improve living conditions at the orphanage. The initial period of time for the development of an integrated farm would take at least one year, how ever it is likely if more financial resources are available, a longer period of up to two years would be needed.



## 6. Project Goal

***“To develop an Integrated Farm at Kai’s Village Orphanage in order to sustainably produce enough food for the growing numbers of orphaned children living at the facilities.”***

## 7. Project Objectives

### Short-Term Objectives:

To improve living conditions of the children at Kai’s Village Orphanage by:

1. Improved food security for orphanage children - in terms of quality, quantity and diversity, through improved agriculture techniques, aquaculture and small livestock (chickens) training and supply.
2. Provision of income generation opportunities for the orphanage - through surplus production of fruits (mangos) and livestock (cattle and pigs).
3. Improved water and sanitation - through provision of rain water collectors and completion of a bore well to supply clean drinking water, repair of a drainage trench, and construction of a biodigester unit.

## ***This will result in:***

### **Long-Term Objectives:**

1. Efficient and responsible use of the available land resources at Kai's Village Orphanage.
2. Kai's Village Orphanage staff will have enough hands-on training to be able to manage integrated farm components sustainably.
3. All of the children living at Kai's Village Orphanage will be able to eat 3 nutritious meals a day from food grown on the orphanage land.

## **8. Project Overview**

The project undertakes the following activities:

### **1.) Water Security:**

At least 4 "Rain Water Collector" Units will be constructed at key buildings at the orphanage: the English school, health centre, living quarter buildings, and dining hall. The units will consist of blue PVC tanks (with 1500 litre capacity for 3 tanks, and 2500 litre capacity for the dining room) attached by PVC piping to the rooves of the buildings to collect water during rainfall. To ensure safety for drinking, at each of these buildings, portable clay-pot water filtration units will be installed coupled with hygiene and sanitation training for both the children and orphanage staff.

In addition to Rain Water Collectors, the partially drilled bore hole on the orphanage land will be drilled deeper to access ground water. A electric motorized pump will then be put in place to move water to the water tower already located at the site. The water tower storage tank will then be attached to a central water system and will be able to fill the rain water collector tanks during dry season periods and ensure water security all year round.

Finally, the large pond located in the middle of the property will need to have its water contents secured by completing a protective dyke around the perimeters of the pond by using an excavator tractor to move the earth. Once this is completed, the slopes of the ponds must be stabilized with vegetation to prevent further slumping and erosion. This central pond will be then be used for agricultural purposes, not for human consumption. In addition, the trench excavated to the south of the property be 'repaired' to prevent any further damage to the land and leaching of soil resources.



### **2.) Small Livestock Production:**

Currently there are 13 head of cattle at the orphanage land. The purpose of raising these animals has been to earn money for the orphanage, however, according to the orphanage director, this has not happened as of yet. In order to improve the health and productivity of these cattle, veterinary courses will be taught to responsible orphanage staff so that they obtain a greater understanding of the biology of these animals and improve their husbandry methods. Coupled with animal health training, it is recommended that the current cattle barn be renovated by laying down a cement floor and extending the roof over sections of the barn which will allow for improved collection of manure for use in the planned bio-digester. In addition, it is necessary to improve cattle feed through the spreading of Stylosanthes (a high protein legume) as well as other varieties of browsing vegetation across 2 – 3 hectares of land.

In addition to raising cattle, 10 - 15 head of pigs (including 1 breeding sow) will be introduced to the farm to provide a supplemental source of protein for the children, as well as, for sale to earn income for the orphanage. A proper pen will be constructed with a cement floor, tile roof, and proper drainage which will improve hygiene and decrease odour. One of the other major benefits of introducing pigs is that their manure can be easily collected for methane gas production with a biodigester. The Project Team will train orphanage staff on feeding techniques which will maximise fattening these pigs to ensure they are able to obtain a good price from pig wholesalers.

Finally, near the back of the property is a chicken pen which isn't being used at the moment. A new pen will be constructed to raise chickens using up-to-date technical methods which reduce the risk of the flock contracting bird flu and improve production. If done properly, such a chicken pen with an initial 30 birds should provide a sustainable supplemental source of protein for the orphanage.



### 3.) Vegetable Gardens and Fruit Tree Production

As the 7 hectares of land has been planted with a mango orchard of over 400 trees, particular care must be given to health and productivity of these trees. Currently, the orphanage staff have not been able to obtain a good harvest from these trees due to a disease (or possible infestation) within the majority of the population. Methods in which to tackle this problem must be investigated and applied. It is not recommended that traditional Cambodian methods of silviculture improvement be used as they are not scientifically sound. If necessary, a silviculture consultant may be hired to investigate the problem. The main benefit of improving the health of the orchard would be increased revenue for the orphanage which could be in turn used to improve the lives of the children.

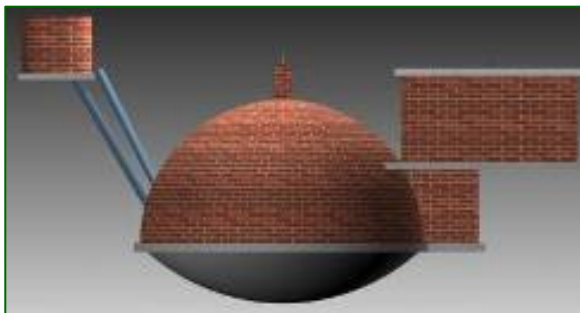
The mango trees themselves are planted in rows spaced at approximately 5 meters from each other. The spaces between these rows of fruit trees would be ideally converted to gardens which could grow enough vegetables to provide a sustainable supplemental source of nutrients for the children. 5 garden rows measuring up to 20 meters long would need to be ploughed by a tractor and converted to garden space near the large pond in the center of the property. The location is necessary to ensure water security through drip irrigation for growing vegetables during the dry season. In addition, it would most likely be necessary to build proper fencing around these gardens to ensure the cattle (and other possible livestock) don't invade the vegetables being grown. Also, fertilizer created from manure collection and composting would be needed to ensure soil productivity. Vegetable varieties could be decided upon during the development of the gardens.



### 4.) Biodigester

This rural household technology has a variety of uses, but primarily it is used as a means to capture methane gas from biodegrading livestock manure which is then used for cooking fuel. The benefits of this device are numerous, including: health and nutrition, sanitation, forest conservation, and agriculture.

A "Farmer's Friend" biodigester will be constructed next to the newly constructed pig pen (approximately 60 meters away from the new dining hall). Manure collected from the pigs and cows will then be fed into the plant to begin producing methane gas which will be used by the orphanage as a sustainable supplemental source of cooking fuel. It may not be possible to completely replace the use of propane for cooking due to the large numbers of children to feed, but it will significantly reduce the amount used. The slurry output (left over manure) is a nutrient rich natural fertilizer which then be used for the vegetable gardens.



## 5.) Aquaculture (Fish Ponds)

In addition to providing a water source for agricultural production, the central pond measuring 45 m x 35 m x 2.5 m, will also be developed into an aquaculture pond capable of harvesting 1000 head of fish. Due to the size of the pond and its dual purpose, this will need to be coordinated carefully to ensure water resources are not overextended, as well as to ensure the health of the vegetable gardens and fish. Orphanage staff will be trained on techniques needed to properly develop and maintain this pond. The fish could then be sustainably harvested as a supplemental source of protein for the orphanage children.



## 6.) Training

To compliment all of the above activities the CRDT Project Team will provide detailed training to relevant orphanage staff, including 2 farm hands which will be selected by Kai's Village. The Project Team will also arrange for 2 study tours at the "Sunshine House" Orphanage and the farm at RDI Cambodia. In addition, when possible the Project Team will arrange for other CRDT Staff and development professionals to visit the orphanage and provide training or input.

## 9. Project Strategy

CRDT's main strategy to implement this project is by having 2 CRDT Staff members residing at the Kai's Village Orphanage for extended periods of time. By living at the orphanage, CRDT will be able to work closely with the orphanage staff to pilot a range of activities and develop a sense of trust. In addition, technology and innovations that CRDT will introduce to the orphanage staff are simple and easily understood. This allows for greater dissemination of information as well as adaptation by the beneficiaries themselves.

## 10. 2007- 2008 Budget

Below is a brief outline of the budget required to implement Kai's Village Sustainable Farm Project in 2007 – 2008. Please find the detailed budget excel sheet attached.

<b>Total Project Budget (USD)</b>	<b>29,421</b>	<b>100%</b>
<b>Budget Secured (USD)</b>	<b>21,875</b>	<b>74%</b>
<b>Budget Unsecured (Requested)</b>	<b>7,546</b>	<b>26%</b>
<b>Staff Cost</b>	<b>10,860</b>	<b>37%</b>
<b>Implementation Cost</b>	<b>16,380</b>	<b>56%</b>
<b>Communication, Administration</b>	<b>780</b>	<b>3%</b>
<b>Contingency Cost</b>	<b>1,401</b>	<b>5%</b>

No.	Item	Total
A	Staff Costs	10,860
B	Biodigester Construction	460
C	Chicken Culture	1,171
D	Pig Culture	3,140
E	Cattle Raising	1,069
F	Fish Culture	1,083
G	Water Supply	4,780
H	Vegetable	3,117
I	Rice-straw Mushroom Growing	150
J	Training	450
K	Transport	960
L	Communication/Administration	780
M	Contingency	1,401
Total (USD)		\$29,421

Submitted By:



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