

Carpe Diem Travel Limited



...journeys that capture the soul of the country...

Final Report  
on the  
Carpe Diem/Epic Arts  
"Old2Nu"  
Project



# 1. INTRODUCTION

Carpe Diem Travel is a social enterprise tour operator, a pro-poor initiative that provides direct and tangible benefits to the destinations they visit.

Created in 2001 by two ex-business people who were undertaking voluntary work in Cambodia, the company provides interesting, fun and educational trips in South East Asia with an emphasis on cultural interaction. Minimising the negative impacts of tourism is at the centre of its philosophy, and in addition all its profits are re-invested into benefiting local people and projects.

Cambodia is still Carpe Diem's most popular destination, and one with which its owners have an ongoing personal relationship. As with many developing countries, litter has become a major issue – especially plastic bags. Cheap and non-biodegradable, plastic bags can cause death to livestock (through choking) and health hazards to humans (by clogging waterways and drains). Poor education in environmental awareness, lack of incentives from local government and a rapidly expanding population could soon result in the problems encountered in countries like Bangladesh and India, where plastic bags have blocked drains and sewers and caused extensive flooding.

Carpe Diem has for some time been seeking a way of initiating a program to reduce the problem, and has recently undertaken research into recycling options. Their aim was to find a low-cost, low-technology solution that could achieve a number of objectives:

- Motivate local people to collect plastic bags from the streets and fields
- Convert the collected bags into something that had a value and could be sold
- Create jobs for local underprivileged people
- Raise awareness of the importance of not littering

Further research found that it was possible with a minimum of effort and no technology to convert the bags into a form of "wool", which can be knitted or crocheted in much the same way as regular yarn.

The use of plastic bags in this way has the potential to create a sustainable income for a group of local people without high investment in technology, equipment or capacity building.

## 2. PROJECT OUTLINE

As a social enterprise, Carpe Diem works closely with NGOs in the countries it visits and for this project linked with a partner organisation, Epic Arts/Cambodia (EA/C) ([www.epicarts.org.uk/cambodia](http://www.epicarts.org.uk/cambodia)), who was well placed to implement this project. EA/C promotes integration of people of all abilities through utilising the arts as a form of expression, empowerment, education and employment. EA/C achieves its aims through facilitating workshops, creating and touring performances locally and internationally, raising awareness of the rights and needs of the disabled community and employing an integrated team. Based in the provincial town of Kampot, EA/C also currently runs a lively café with workshop space, and has begun construction on an arts centre due to open mid 2008.

Epic Arts already teaches art and craft skills to members of the disabled community (a Carpe Diem volunteer recently visited them to provide some knitting training) and also assists in livelihood development by selling handicrafts produced by them. This means that EA/C was a perfect vehicle for implementing this micro-enterprise project that would provide both economic and environmental benefits for the local people.

The outline of the project was as follows:

- Develop and implement a process for collecting and cleaning bags and creating "wool". This would include an incentive for local people to clear the fields and waterways around their houses.
- Train local deaf and disabled people in the making of the products. This group of society is often stigmatised, and increasing their skills will generate both economic benefit for their families and raise their status in their communities.
- Create and develop designs for products that would have appeal to the Western market. This could include knitting, crochet and macramé of the wool.

The output would be sold in the EA/C Café and also in a high profile shop in Phnom Penh (Cambodia's capital city) that promotes locally-made products to a Western clientele.

The project was implemented by a Carpe Diem volunteer in co-operation with Epic Arts staff, and overseen by the Carpe Diem Cambodia Country representative.

Keen to integrate this project into their current product development and micro-enterprise programmes, EA/C had the services of an English volunteer who can implement and manage the instigation of the project. Developing efficient and cheap methods of producing "wool" and the training of members of the local disabled community in creating products were vital steps in achieving the aims of the project.

In conjunction with this, Carpe Diem had volunteer services offered by a New-York based product designer/manager with extensive experience with a wide range of household names, and spent one month in Kampot without charge, designing products that are appealing to Western tastes and arranging displays in prominent locations.

The project therefore had a number of key benefits that met (and exceeded) the requirements for the award:

- Minimising environmental impact/promoting environmental conservation. This project has direct benefits to the environment by reducing the most pervasive type of litter.
- Promoting equality/reducing poverty. This project has provided skills training and a means of income for some of the poorest and most stigmatised members of Cambodian society.
- Increasing intercultural understanding. The project benefits both sides. Local people have gained an understanding of the product designs that appeal to Western people and were able to "brainstorm" their ideas with a foreign expert. The foreign volunteers were working at ground level, in a rural area, training local people and gained a greater understanding and appreciation of the culture.
- Increasing environmental knowledge. The distribution of educational material in the area has increased awareness of the problems caused by littering within rural village communities.

### 3. PROJECT PHASES

The project was implemented in a number of phases:

3.1 Researched the most efficient methods of creating the “wool” from collected bags and undertaken a costing exercise for yarn production.

- Rinse the bags slightly to get rid of obvious dirt so that the bags are visually clean.
- Cut the bags:
  - Cut intact bags in horizontal strips. Place in one bucket. These will be used for making the plarn (plastic bag yarn)
  - The residual parts (handles and the bottom strip, plus torn or small parts of bags) should be placed in a separate bucket. These will be used for making stuffing material (see below in design section).
- Soak the bags in a cleaning mixture, made from:
  - 1 Parts Washing Detergent
  - 7 Parts Tepid WaterThis measurement can clean 15/16 plastic bags
- Soak for at least 24 hours
- Remove bags from water, and rinse in clean cold water.
- Pat dry and leave to dry naturally.



Cost of cleaning the plastic bags, excluding labour:

Equipment	Cost (USD)
Dix Dishwashing Detergent (900 ml) (variable cost)	0.50
Bucket (fixed cost)	0.40
Water (n/a)	n/a
Scissors (x1) (fixed cost)	0.15
<b>Total</b>	1.05

Assuming 1 part of detergent = 150 ml and 1 part can clean 16 plastic bags  
One bottle of detergent will provide 6 parts of detergent and can clean 96 plastic bags ready for use.

Initial cost of cleaning 96 bags :                    \$1.05

After setup, cost of cleaning 96 bags:        \$0.50

**Cost of Producing One Ball of Wool:**

Assuming 20-22 plastic bags when joined constitutes a ball of yarn

$$96 / 22 = 4.36$$

$$0.50 / 4.36 = 0.11$$

Therefore material cost of producing one ball of yarn after initial setup costs was originally calculated at \$0.11, plus the cost of bag collection.



3.2 Discussed and agreed upon the process for collecting bags. Initially the aim was to encourage collection of litter in the countryside and villages around Kampot, where Epic Arts is based. With other recycled products in Cambodia (water bottles and drink cans) it has historically been established that financial compensation to collectors is the greatest motivation. The level of the compensation was set at 100 Khmer Riel (KHR) – approximately \$0.02 – per 3 bags. This was calculated to be sufficient to motivate collection, but lower than the cost of new plastic bags.

Initially people who attended the centre were provided training on the reason for bag collection, kited out with plastic gloves, and given guidance as to the places they should be aiming to clear. In particular, around the town, and along the riverfront – a popular strolling place for locals and tourists, and for farmers to graze their livestock – were highlighted as those areas most in need of attention.

The following weeks established that the price set was correct – the people were sufficiently motivated to collect bags, and were returning with obviously used and discarded items rather than new ones. In addition, interest had been generated by what they were doing (plastic bag collectors anywhere in Cambodia being an unfamiliar sight) and more people had approached the centre asking if they too could collect bags.

Bags were delivered to the centre at the end of a day, were evaluated for quality sufficient to make plarn, and payment was made. "Sufficient quality" was determined as being intact bags.



It became apparent that damaged or partial bags were not being collected, because they had no value. To encourage ALL material to be collected, whether it could be made into plarn or not, it was therefore decided that these items would also be compensated – at 50% of the value of intact bags – and a use would be found for them later in the project. This again proved sufficient incentive, and damaged and partial bags began to be brought to the centre.

3.3 Identified one member of the disabled community and two members of the deaf community who were already highly skilled in knitting and crocheting. These made up the core team. Prior to the arrival of the product design volunteer, they undertook some practice knitting with the plarn, replicating existing items made of wool, to get used to the feel of it and see what types of design worked with the texture.



3.4 The product designer arrived at the end of October and was very well-prepared, having already undertaken extensive research into potential products and the type of designs that would appeal to a western market.

A number of different sizes of crochet hooks and knitting needles had been donated by Carpe Diem clients, brought from New York by the designer and purchased in Bangkok, and initial experimentation was undertaken with these. After a very short time, it became apparent that crochet was much better suited to the texture of the plarn, using between a 3.5 to 6.5 mm crochet hook. Further testing was therefore undertaken along this line, using variations on a "coil" design.

The designer had sourced a number of patterns for coil pots, both with and without lids. These were given to the team, who were initially skeptical in both their abilities and the suitability and ability of "plastic bags" to make such an item. Incredibly, within a couple of days they were starting to produce reasonable prototypes – much to their amazement and delight. These can be seen below.



Two different programs began to develop from this point:

- A series of workshops were held with other deaf and disabled people in the community. Initially this was to provide information on the project and illustrate how it could teach them new skills and provide them with opportunities for income. Those who were interested were invited back and given training from the existing crocheters. Further sessions, using specific techniques and working to specified designs, resulted in a small group who had the ability and interest to continue with the project.



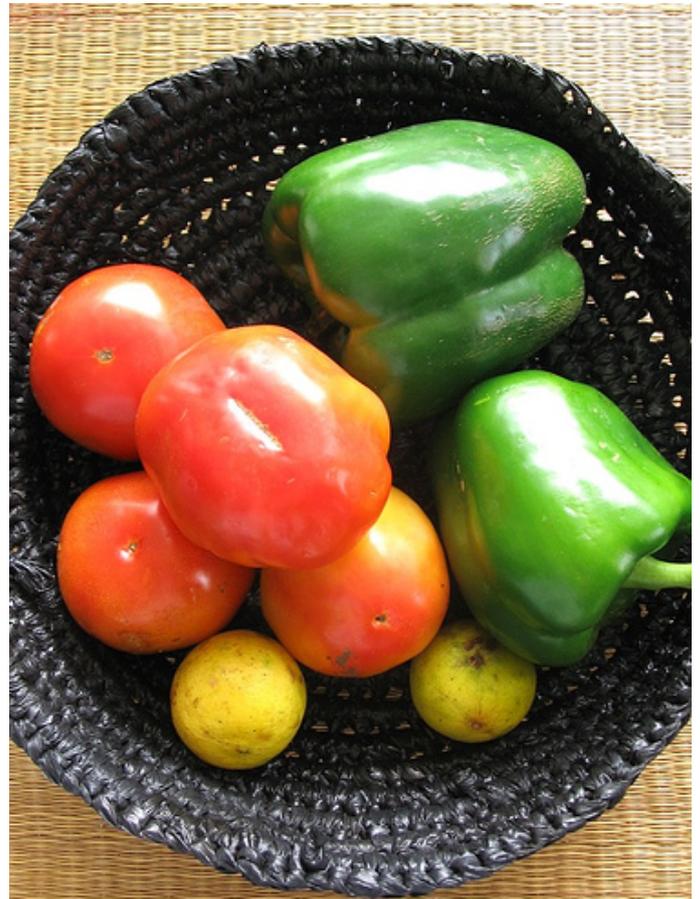
During this time, a skilled translator was in attendance to assist with accurate interpretation of technical terms and provide backup to the Khmer project manager. The project manager proved to be very self-motivated, translating basic patterns into Khmer in order for the trainees to be able to go home and practice what they had learned.

The translator, who lives in Kampot, became very enthusiastic about the project and offered to continue to visit and provide free-of-charge translation where needed – volunteering is not generally a concept familiar to Cambodians.



- Designs began to be refined, concentrating on consistent good quality, attractiveness and colour. Variations in design began to evolve – it was found that crocheting the bags around rope produced a sturdy and structured design, whereas free-form crochet produced more soft and flexible models. As the plastic bags are of course of many different colours, it was not viable to try and produce a single colour item – but instead, by combining different shades or selecting complementary colours, both interesting and stylish results were obtained.

The following are the actual final products, made entirely from recycled plastic bags that were collected from the streets and fields around Kampot. Apart from the rope core used in some designs, there are no additional materials or processes involved. The outcome has achieved (and indeed surpassed) our aims – fashionable, useful items that would not just be a “conscience purchase” but stand in their own right as attractive, functional items.





3.5 With designs completed, artisans skilled and an efficient collecting and plarn-making process established, the final stage was to agree on pricing and display the product for sale. Pricing was based loosely on the number of balls of plarn required for an item, its complexity and the amount of time taken – but also involved consultation with the crocheters as to how much they thought was a good sum for their efforts.

A display shelf was made at the front of the Epic Arts Café and the artisans were invited to select the pieces they would most like to sell.



(About the chickens: this is what the incomplete/damaged bags were used for! The children who visit the centre wanted some craft activities of their own, and this the result)

In order for the project to be self-sustaining, it was also necessary to establish a workable solution for the reclaiming of the costs incurred in the collection of the bags and making of the plarn. It was agreed that Epic Arts café staff members, and any other members of the deaf and disabled community who used the centre and would like to earn a small amount of money, would clean bags and make plarn – it does not require any skill, and can be undertaken in spare moments.

It was agreed that crocheters would be given all the plarn that had been made during the project start-up phase, as the initial labour costs and bag collecting fees were included in the project. This would enable them to make a reasonable number of products which could then be sold. They could then buy balls of plarn for future items from those who had made them.

In order for this to be workable, it was necessary for a fixed ball size to be agreed upon – this was set at a circumference of 25cm – and a fixed price per ball –

Cleaning materials	0.11
Bags	0.19
Labour	0.25
TOTAL	0.55

On a “pass back” basis every time a ball of plarn is sold, the maker receives their \$0.25 and the rest is put into a pot for payment of bag collectors and purchase of cleaning materials.

## 4. THE FUTURE

Although the project has more than achieved its objectives – discarded plastic bags are being collected from the streets and countryside around Kampot and made into beautiful and functional items for sale by members of the deaf and disabled community – it has the potential to go so much further. Interest in the output has been significant and it is hoped that soon it will catch the eye of overseas retailers.

Additional crocheters (those who attended the workshops) are continuing to practice at home and regularly visit the centre to learn new techniques. As demand increases they can be gradually given more work.

The structure of the process for collecting the bags and making the plarn has now been refined to such a degree, and the skill and confidence of the crocheters in making high quality, stylish items has increased to such a level, that it is quite viable for additional centres to be established elsewhere in the country – or indeed, other countries where Carpe Diem Travel is operating now or in the future - should demand dictate.

It would be beneficial to no-one to collect huge quantities of bags, to make vast quantities of plarn, to crochet store rooms full of finished items, without sufficient buyers. But, when the demand comes – and we are confident that it will – a small team of some of the most stigmatised people in the country knows exactly what they are doing, believes in what they are doing, and can make it happen.

We would like to extend our heartfelt thanks to Ecoclub for making this project possible, and to its members for voting for us. If you would like to see this project continue to grow, please tell anyone you know who may know someone that knows someone that would like to sell fabulous products, help local people to fulfill their potential and clean up the countryside at the same time to contact Debbie Watkins at [mail@carpe-diem-travel.com](mailto:mail@carpe-diem-travel.com) for detailed photographs, samples and pricing.

## 5. PROJECT EXPENDITURE (US Dollars)

Project materials – crochet hooks, knitting needles, buckets, etc.	\$231.07
Crochet instructors – payment for time spent and transport	\$67.50
Communication phone + email	\$10.00
Accommodation& transport designer	\$265.00
Translator	\$120.00
Project Manager	\$570.00
Crochet staff – payment and transport for workshops	\$59.75
Cleaning and making yarn	\$54.22
<b>TOTAL</b>	<b>\$1,377.54</b>