

Condominium Program of Fisheries Community (Waste Reduction)

in Jingzi Village of Shandong Province Project

Final Report

Brief Introduction summarizing progress

In 2019, BlueRibbon ocean conservation association (BROCA) applied for a small grant project supported by UNDP/GEF Yellow Sea Large Marine Ecosystem Phase II Project, entitled " Condominium Program of Fisheries Community (Waste Reduction) in Jingzi Village of Shandong Province". The project mainly organized by BROCA and supported by Huayi Social Work Center, Shandong university, Ivy League International School and other institutions. Its purpose is to reduce Marine waste pollution, enhance the Marine environmental protection awareness of community residents and fishermen. At present, the project has been successfully completed and all the project contents have been completed in an orderly manner. I'm going to summarize what we've done in the last few months.

Comments

1. Waste reduction in weight through the environmental protection facilities and garbage recycling enterprises

➤ The strategy for garbage reduction

Garbage reduction is one of the most important goals of our project. The garbage that need to be reduced in Jinghai Community is mainly composed of domestic garbage and fishery waste. In terms of garbage reduction, we adopt the following strategies. First, reduce the amount of garbage generated by the source. Promote less plastic lifestyles and production methods through publicity and education, such as the following actions, 1) symposiums with local resident, watching movies and other publicity events 2) distributing brochures, posters and other educational materials; 3) sending out

environmentally friendly products such as cloth bags and tableware; 4) create artworks and other usable items with marine garbage. Second, make full use of garbage recycling enterprises, mobilize community residents to participate in garbage classification and reduction. Through garbage classification and recycling, reduce the amount of garbage in such treatment methods as incineration and landfill. Improve the garbage recycling efficiency, reduce the impact on the environment.

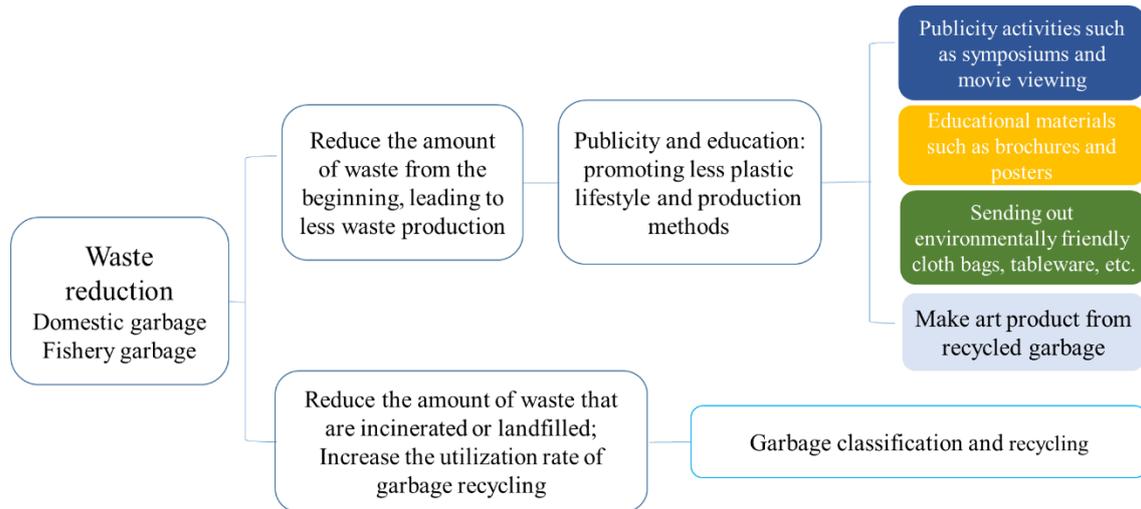


Fig.1 Garbage reduction strategy

In Jinghai community, domestic garbage and fishery garbage are divided into three categories: recyclable garbage, kitchen waste and other garbage. At present, kitchen waste and recyclable waste are respectively recycled in communities by local enterprises in Weihai.

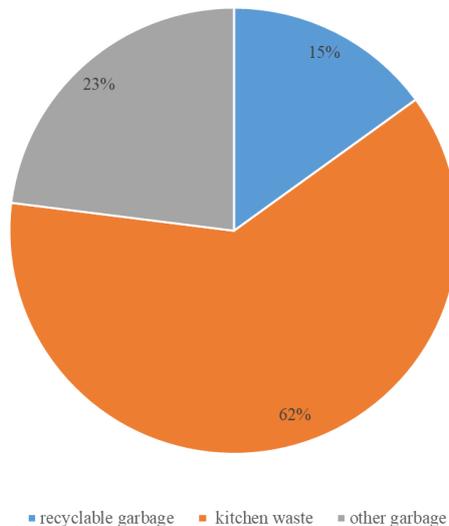


Fig.2 Weight proportion of all kinds of garbage



Fig.3 Waste reduction through the environmental protection facilities and garbage recycling enterprises

➤ Kitchen waste reduction in weight through the environmental protection facilities

Kitchen waste is the category with the highest proportion of weight. Mingliu Kitchen Waste Disposal Company donated the right to use a kitchen waste disposal equipment to our project. The installation was completed and operational in September. We saved the cost of the equipment we had planned to buy. So with that money, we did the following: 1) Round tables were held with all stakeholders to ensure orderly sorting and local participation; 2) Construction of equipment room; 3) Printed propaganda products 4) Garbage transfer and garbage classification training and other labor costs.



Fig.4 Visit garbage recycling enterprises

At present, we collect kitchen waste in fixed places in the community every day, and the community volunteers put the waste into waste treatment equipment. It's been nearly two month since the first recycling of kitchen waste on Oct. 1. We counted seven weeks of data up to November 18. During this period, we have recycled and treated 3373.27kg of kitchen waste. In order to improve the enthusiasm of residents to participate in, we give some prizes according to the number of times. Through statistics, we found that the amount of kitchen waste increased significantly in the third week, while the number of participants did not change significantly. Because, initially, we weighed every time someone dropped kitchen waste, and the residents thought we would give prizes based on weight. So they collect a lot of kitchen waste. This is not in line with our goal of reducing waste, so we weigh the total kitchen waste we collect every day. The accuracy rate of garbage classification was 82% in the first week, and the accuracy rate was more than 97 % after the second week. The resident participation rate was 42%. (The participation rate is the number of households that have participated divided by the total

number of households.)

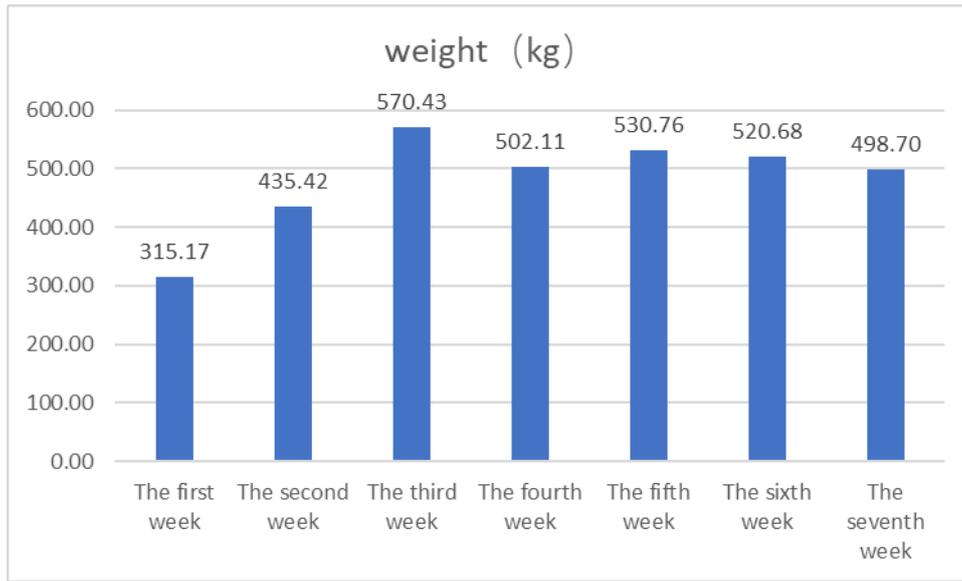


Fig.5 Weight of kitchen waste recycling in 7 weeks

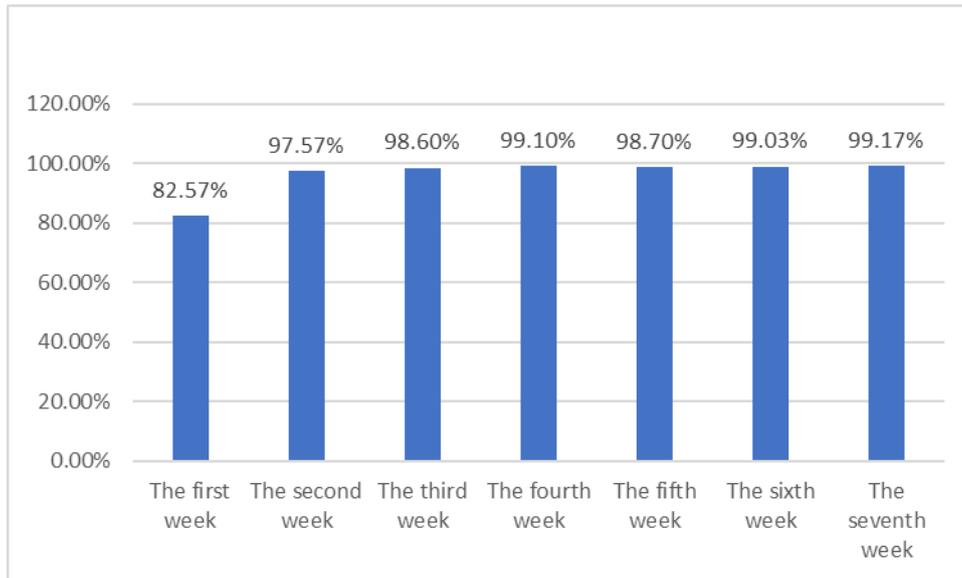


Fig.6 The classification accuracy of kitchen waste in 7 weeks

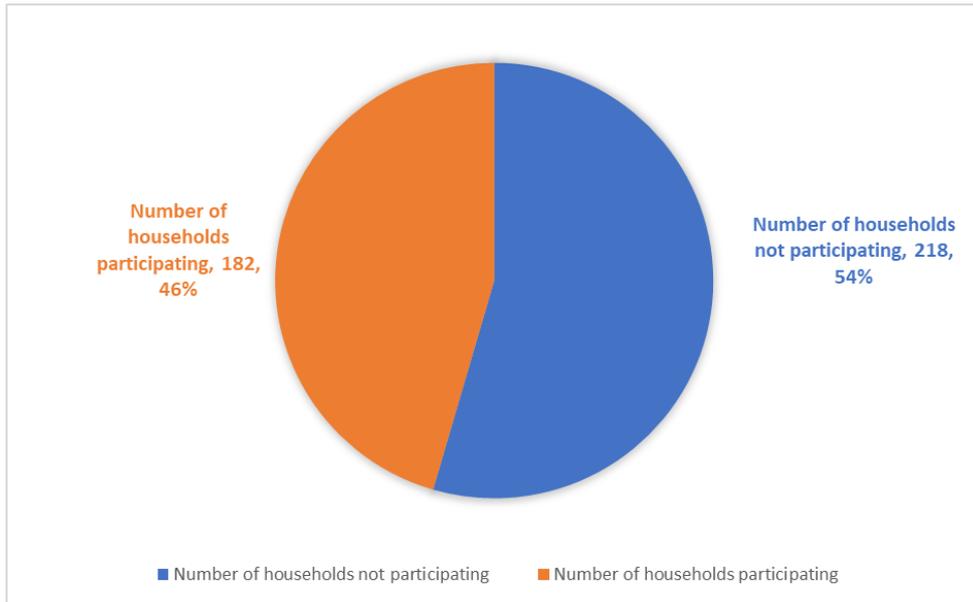


Fig.7 The number of households involved in the classification of kitchen waste (The total number of households is 400)



Fig.8 Separate and recycle kitchen waste

- Recyclable waste reduction in weight through the environmental protection facilities

In terms of recyclable waste, we work with Weihai Yueneng Environmental Protection Technology Company to collect it in the community every other week. According to the amount and weight of garbage collected, Yueneng give residents different subsidies. So far, Yueneng has collected recyclable garbage in the community twice, on November 1st and November 15th. They mainly recycle metal, plastic, paper, glass and fabric. We counted the weight of garbage collected twice. The total amount of garbage collected in the first time was 87.8kg, with a total of 31 households participating. The second time was 195.4kg, with a total of 45 households participating. Residents' participation in recyclable waste recycling was 14 percent.

The project aims to provide a communication channel between residents and recycling companies. Through this model, we organize and encourage residents to participate in recycling. Residents can collect and separate garbage, which will be uniformly recycled by enterprises, and eventually all kinds of garbage will be recycled through corresponding terminal treatment plants.

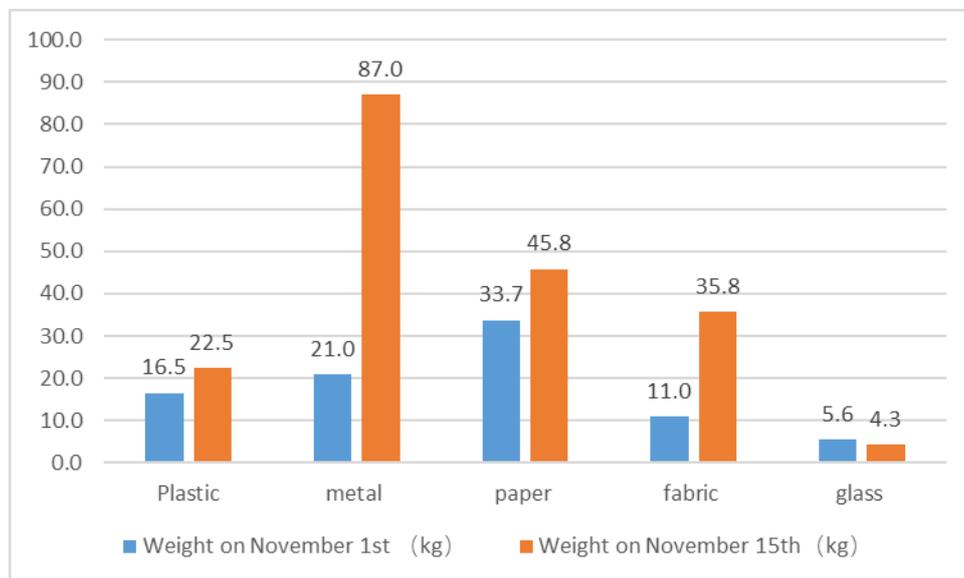


Fig.9 The weight of all kinds of recyclable waste that we have recycled

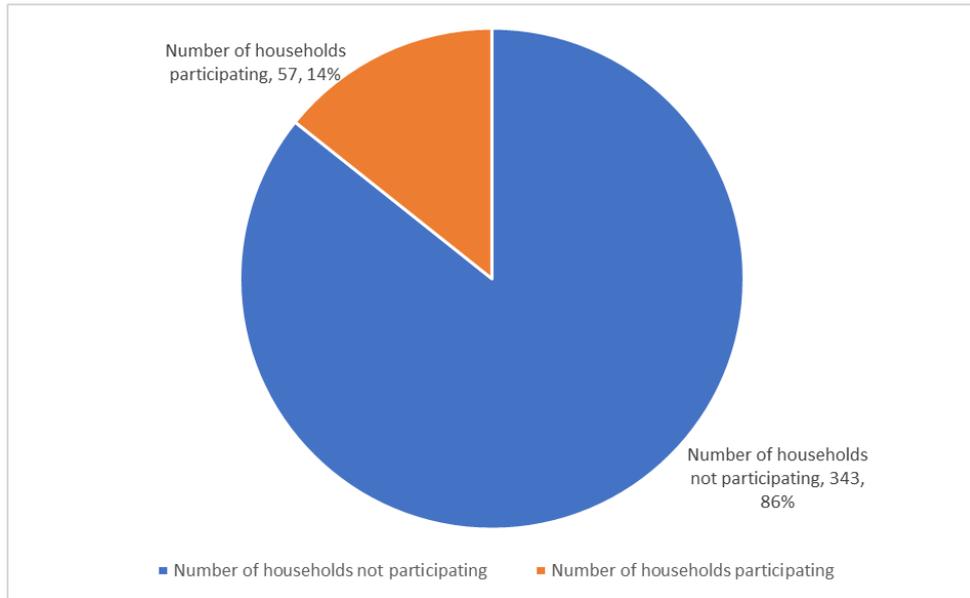


Fig.10 Residents' participation in recyclable waste

分类处理流程

玻金塑纸	玻金塑纸投放点	专业企业专车运输	回收处理
旧织物	旧物回收点	专业企业专车运输	回收处理
有害垃圾	有害垃圾投放点	专业企业专车运输	回收处理
其它垃圾	其它垃圾投放点	专业企业专车运输	焚烧发电与卫生填埋
厨余垃圾	厨余垃圾投放点	专业企业专车运输	回收处理
大件垃圾	大件垃圾投放点	专业企业专车运输	回收处理

□ 活动时间：2019年11月15日（周五）
9:30-11:00 14:00-15:30

□ 活动地点：靖海社区党群服务中心西侧

□ 活动内容：
回收旧衣服、矿泉水瓶、纸类等，活动日当天现场称重，直接返现（也可以积分形式存在“绿色生活”账户内）。凡是参与居民均可赠予提袋一个，赠完为止。
各类回收价格如下：
纸类：0.4元/斤 织物：0.15元/斤 金属：0.2元/斤 塑料：0.15元/斤
矿泉水瓶类0.04元/个
※注意事项：小家电类在家自己分解完，才能回收。

环翠生活垃圾 分类投放指引

垃圾分类 人人有责

生活垃圾分类投放设施

① 玻金塑纸

玻璃 金属 塑料 纸类

② 旧织物

衣物 床上用品

③ 有害垃圾

电池 灯管

④ 其它垃圾

已污染的包装材料 已污染的纸巾

⑤ 大件垃圾

沙发 衣柜

⑥ 厨余垃圾

剩菜剩饭 果皮

◆ 鼓励但不强制居民进行厨余垃圾分类

威海市睿能环保科技有限公司



Fig.11 Poster on waste sorting and recycling activities

2. Waste reduction and plastic waste management in Jingzi village focusing on art product from Marine debris.

The word "garbage" is often associated with dirty, smelly, pathogenic, rotten and other negative associations in our daily life. However, what we tend to overlook is that these "wastes" are actually made by our own hands. Plastic waste has become one of the threats to Marine biodiversity. Is garbage really useless? What else can we do? In order to inspire the public to think about garbage, we encourage people to reduce the use of disposable plastic products, so as to reduce marine waste and return marine life to a pure ocean.

From July 8th to 12th, we recruited 21 students in the Jinghai community to create art with marine garbage. Before that, we organized Jinghai community students to clean marine garbage near the community, and sorted, washed and dried the garbage picked up. The main collected garbage are fishing nets, foam, floating and household garbage and so on. By picking up rubbish, we can know the real situation of Marine rubbish,

and let the students take action to protect the environment.



Fig.12 Making art out of Marine garbage

We invited Li yi, an artist who has been concerned about Marine environment protection for many years, to talk about the current situation of Marine garbage and its relationship with marine life, marine ecosystem and human beings. To guide the students to make art with the rubbish. There are three themes in the activity: "ghost fishing", "turtle confusion" and "marine litter recycling". In this activity, students made 19 pieces of art, and each child participated in making at least one work, with 100% participation.



Fig.13 Make art works

The following work is called "turtle with no place to hide". The main materials are foam, fishing net, rope, etc. It shows the turtle that has strayed into the fishing net. We don't have detailed data on the number of rare and endangered species such as turtles and whales that are mistakenly caught, but it happens frequently. The work warns us of the

effects of fishing on Marine life.

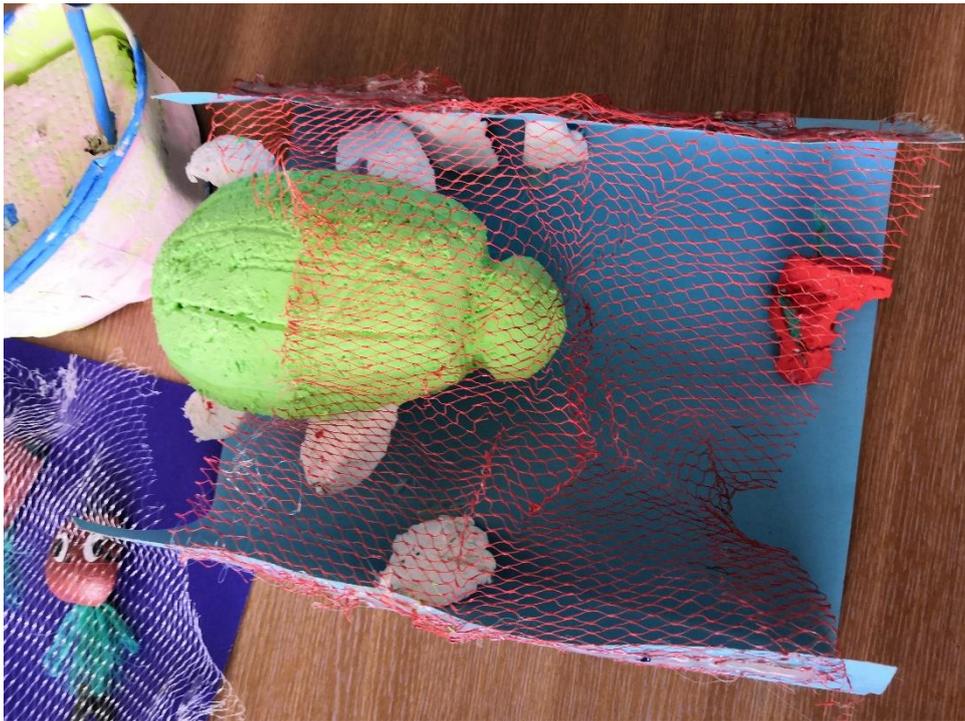


Fig.14 "turtle with no place to hide"

The theme of the following work is "Marine garbage recycling", which is an imagination of a better future. The young author hopes to collect Marine garbage in the top box and process it through intermediate devices, so as to finally produce products that can be used by us.



Fig.15 “Equipment for eating garbage”

After the art was completed, we organized the students to exhibit their works on the beach near Jinghai community, and encouraged each student to introduce the original meaning of their works to at least five people. Students use their works to express their thoughts and convey to the public the urgency and importance of improving plastic pollution in the ocean.





Fig.16 Exhibition artwork

3. Training and communication and use of app for dynamic monitoring of garbage reduction

We set up a data application (app) for garbage quantity reducing dynamic monitoring in October. In addition, offline residents' training has been carried out on October 1-14, and volunteers' use training has been carried out on October 29. It has been in trial operation for one month in November. Residents can submit the daily amount of recycled kitchen waste and the paper, clothes, plastics, fishing nets and fishing gear that are regularly collected through this app. We collect statistics based on the amount of waste we recycle, and give awards in the community. Data from volunteers cleaning beaches can also be aggregated through the app.



Fig.17 Offline app use training

4. Benefits of partnership with recycling companies and cooperation with Korean partners

In order to promote the communication and cooperation between China and South Korea in ecological protection, to enhance regional sustainable cooperation based on management of ecosystem, BROCA visited the Korean NGO in May and signed a MOU with the Korea-China Economic and Cultural Exchange Center. On September 24th, we invited the consultant of Korea-China Economic and Cultural Exchange Center to participate in the round table conference on garbage classification and recycling in Weihai. Through exchanges with South Korea, we have shared the difficulties and experience gained in Marine garbage management. In the process of the project, we communicated with Korean ngos about the treatment of Marine waste through meetings, voice and email, which provided experience for the project. About this project, we have published an article on the activities and significance of this project in the English magazine *Marine Litter News* sponsored by OSEAN.





Fig.18 Foreign exchange and cooperation



Fig.19 The report was published in Marine Litter News

Problems & Challenges

During the implementation of the project, we found that only by starting from the needs of community residents and seeking the internal connection between Marine protection and residents' needs, can we fully mobilize residents' enthusiasm and ensure the sustainability of the project. The main problem we want to solve in this project is to

take the fishing community as an example to reduce the amount of garbage as much as possible and reduce the pollution of garbage to the marine environment. During the course of our program, many fishermen did make some changes in their behavior through education and incentives. For example, the habit of sorting garbage is gradually forming. Sorting kitchen waste every day. Recyclables such as fishing nets are also gradually collected consciously, rather than discarded at will. However, the problem is that residents' participation in garbage classification and recycling is not high enough. The participation rate of kitchen waste is 46% and that of recyclable waste is 14%. One reason is that not enough has been done to mobilise residents' internal dynamism. Although we set up the condominium committee, so that many residents can make their own decisions, the motivation of residents to reduce the amount of garbage is still insufficient. If this project can continue, this is what we want to focus on improving.

Conclusion

Through this program, we set up a platform to promote regional cooperation and exchanges between Chinese and South Korean non-governmental Marine public welfare organizations. Learn and share experiences and difficulties in Marine waste management. The communication will give us a lot of benefits in the future in Marine garbage management.

We established an effective management system for marine debris in fishing village community docks, to reduce the import quantity of runaway garbage into the sea, to improve the level of recycling resources utilization efficiency. During the project period, directly reduce about 4000 kg of waste (kitchen waste, recyclables and waste used in art production). At present, we have sorted the garbage in the community, including kitchen waste, recyclables and other garbage. Kitchen waste is processed into recyclable feed additives and biodiesel by waste treatment equipment. Recyclables, including fishing nets and other fishery wastes, are collected by Yueneng on a regular basis. Different kinds of garbage are recycled in different ways. We have established

good communication between the recycling enterprises and the residents of the community.

We built platforms for public participation in Marine conservation, strengthen public education and project publicity, and raise the environmental awareness of local residents and students. Through the formation of community condominium committees, community residents can share their opinions, such as voting on the time and place of garbage collection. At the same time, we also held various activities such as watching movies on the theme of marine protection, making works of art out of marine garbage, and round-table conference on marine protection, providing a platform for residents to participate in marine protection.

Annex Summary Activity Target vs. Progress

[What did you plan to do this quarter? What did you actually do]

Activity	Planned [What had you planned to do for each activity in the reporting period?]	Actual [What did you actually do for each activity in the reporting period?]	Notes [Add any relevant notes]
1	Inception Meeting	The Project Inception meeting was held on 17th May at Ivy League International School in Weihai. The meeting reviewed the background, relevance, project objectives, actions and anticipated results of the inception the meeting. A management committee for waste reduction in fishing communities was set up consisting of representatives from the government, NGOs, schools, community residents and fishermen, etc.	The meeting has also defined the goal of the project, which is to effectively resolve the contradiction between local marine resources environmental protection and community development, to make local villagers to participate deeply in activities of decision-making, to transfer themselves from being managed to managers of environment around them, and enhance the exchange and cooperation of ecological and environmental protection between China and South Korea and interregional sustainable cooperation in ecosystem-based management.
2	Baseline survey and public awareness survey of garbage in Jinghai community	Carry out in-depth investigations into Marine waste pollution and community awareness of environmental protection. Six volunteers conducted a survey of garbage status and public awareness in Jinghai community on 24th May, 11 th September and 14 th October.	To investigate and evaluate the types, sources, classification, pollution and recycling of garbage in Jinghai community. At the same time, the residents' awareness of garbage management and environmental protection was investigated through visits and questionnaires. Most residents believe that environmental pollution is closely related to their lives, but the overall awareness of environmental protection is not high, the understanding of garbage classification and treatment is relatively one-

			sided, that their actions have little relationship with environmental change.
3	Film screening and Marine conservation seminars	On 7 th June, BROCA together with Weihai Huayi Social Work Center, Sunjiayuan Street Jinghai community and Lihai community, held Blue Cinema watching and salon sharing activities. A total of 25 people participated, including 4 volunteers and 21 community residents.	Through this activity, the community residents can fully understand the current situation of Marine waste pollution, understand how plastic affects Marine life, and even how plastic step by step onto our dinner table, ourselves and future generations have an impact. At the end of the activity, residents were encouraged to reduce plastic and abide by the principle of zero waste (5R: refuse, reduce, reuse, recycle, rot), paving the way for the later stages of garbage classification and recycling, garbage reduction and other work in the community.
4	Foreign Exchange	We visited Korean Marine waste ngo at the end of May and invited the consultant of Korea-China Economic and Cultural Exchange Center to participate in the round table meeting of garbage classification conference on September 24th.	Through exchanges with South Korea, we have Shared the difficulties and experience gained in Marine garbage management. In the process of the project, we communicated with Korean ngos about the treatment of Marine waste through meetings, voice and email, which provided experience for the project. About this project, we have published an article on the activities and significance of this project in the English language magazine focusing on Marine garbage created by Korean NGO.
5	Training and communication and use of app for dynamic monitoring of garbage reduction	We set up a data application (app) for garbage quantity reducing dynamic monitoring in October. In addition, offline residents' training has been carried out on October 1-14, and volunteers' use training has been carried out on October 29. It has been in trial operation for one month in November.	Residents can submit the daily amount of recycled kitchen waste and the paper, clothes, plastics, fishing nets and fishing gear that are regularly collected through this app. We collect statistics based on the amount of waste we recycle, and give awards in the community. Data from volunteers cleaning beaches can also be aggregated through the app.
6	environmental protection facilities	Mingliu Kitchen Waste Disposal Company donated the right to use a kitchen waste disposal equipment to our project. The installation	We saved the cost of the equipment we had planned to buy. So with that money, we did the following:1. Round tables were held with all stakeholders to ensure orderly sorting and local participation 2. Construction of equipment

		was completed and operational in September.	room3.printed propaganda products4.garbage transfer and garbage classification training and other labor costs.
7	Marine garbage management lecture training	We held a round table of Marine garbage on July 7 and September 22 in the community. The topics of the two exchanges were respectively "Marine garbage around us" and "Marine microplastics".	The two meetings make full use of the villagers' leisure time and convey ideas to the villagers through the villagers. To make more people in the community understand the current situation and hazards of Marine garbage, and reduce Marine garbage spontaneously.
8	Making art from Marine debris	From July 8th to 12th, we cooperated with Jinghai community to make art with Marine garbage.	We first picked up garbage on the beach near Jinghai community, and then sorted, cleaned and dried the garbage. Under the guidance of the artist, community students make art from Marine garbage.
9	Organize local residents and students visit garbage recycling enterprises	On 3 rd June, 27 th September, 8 th June, 28 th October, we organized community residents to visit the disposal of kitchen waste.	Through visiting and understanding the process of garbage disposal, the villagers learned about the environmental pollution caused by garbage incineration and landfill. At the same time, by visiting the current community waste disposal methods, they can know the kitchen waste is recyclable in the community.
10	coastal waste removal	Organize community residents, college volunteers and Ivy International School to clean the beach near Jinghai community .	To improve the environment, guide the public to pay attention to Marine garbage, and create a caring atmosphere for the ocean through beach cleaning activities. Through the model of "teacher-driven students and student-influenced parents", the garbage reduction and Marine environmental awareness of residents in Jinghai communities will be enhanced, and the coordinated development of ecological construction and improvement of delicate communities and people's livelihood will be promoted, so as to build a demonstration village of Marine ecological civilization.