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# SUSTAINABLE FISHERIES MANAGEMENT PROJECT (SFMP)

## Training in Hygienic Fish Handling, Business Skills and Fire Safety at DFTC-Kokrobite



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**Cover photo:** Group Picture of Participants from the Business Skill Training. (Credit: Development Action Association)

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## **ACRONYMS**

DAA	Development Action Association
DFTC	DAA Fisheries Training Centre
FAO	Food and Agriculture Organization
MOFA	Ministry of Food and Agriculture
MSME	Micro, small and medium sized enterprises
LEAP	Livelihood Empowerment Against Poverty
SFMP	Sustainable Fisheries Management Project

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## **EXECUTIVE SUMMARY**

Businesses along the fish value chain are the main livelihood of most people living along the coast in Ghana and the Volta Lake. These businesses are faced with challenges that need to be addressed to enable them to increase their incomes and improve livelihoods.

In line with this, the DAA Fisheries Training Centre organized a two-day capacity building workshop to address some of these challenges for one hundred (100) fish processors from eleven (11) Communities in the Greater Accra and Central regions of Ghana. These communities are Old Ningo, Ahwiam, Chorkor, Tsokomey, Bortianor, Oshiyie, Kokrobite, Nyanyaanor, Apam, Winneba, and Mumford.

The workshop was in three sessions. The first session took place on the 11<sup>th</sup> and 12<sup>th</sup> December 2018, the second on 13<sup>th</sup> and 14<sup>th</sup> December 2018 and the third was on 18<sup>th</sup> and 19<sup>th</sup> December 2018.

Most of the participants could not read or write, so the training methodology used questions and answers, demonstrations and discussions. The training selected beneficiaries who had never attended any training at the DFTC and made up of 10% youth.

At the end of the workshop participants pledged to share the knowledge they had acquired with their counterparts who were not able to attend especially on the importance of the closed season.

Finally, they pleaded that DAA staff should visit them frequently to help address individual challenges in their processing businesses.

## **1. BACKGROUND**

The objective of USAID/SFMP is to support the efforts of the government of Ghana to rebuild marine fish stocks and catches through the adoption of responsible fishing practices. Improving the efficiencies in the post-harvest value is critical to the sustainable management of fisheries.

The businesses along the fish value chain in Ghana are confronted with many challenges such as microbial and chemical contamination from catch, through to processing, storage, marketing and consumption.

One way to achieve this objective is to build the capacity of processors who are mainly women on hygienic fish processing and marketing.

It is in this vein that DFTC organized a two-day training program for one hundred (100) fish processors, especially the youth in business skills, hygienic fish handling and how to combat fire at processing sites and homes. The participants were all females.

### **1.1 Objectives**

The objectives of the training were:

- To help beneficiaries acquire knowledge in hygienic fish processing and marketing.
- To help participants acquire skills in book keeping, profit and loss analysis.
- Introduce beneficiaries to the Ahotor oven technologies and benefits.
- Introduce clientele to the Class 1 Recognition Scheme and its importance in fish marketing.

### **1.2 Outcome**

It was expected that, at the end of the training, participants will be able to:

- Adopt hygienic methods in processing fish for sale.
- Be aware of the benefits of the class one certification and aspire to get certified.
- Aspire to keep business records and cultivate a savings culture.

## **2. OPENING**

The workshop was opened by Mrs. Lydia Sasu, Executive Director of Development Action Association. (DAA) after a brief prayer by one of the participants, she expressed her gratitude to all for responding to the invitation to learn. And was happy that most of the processors were young people, she advised the youth to take up the challenge facing their aging parents and adopt modern hygienic fish processing practices to enable them access better markets.

The training was attended by one hundred participants who were all females, from twelve communities in Greater Accra and Central regions in Ghana. These communities were Apam, Winneba, Mumford and Nyanyaator in the Central region. Old Ningo, Ahwiam, Chorkor, Tsokomey, Bortianor, Oshiyie, and Kokrobite in the Greater Accra region. The youngest being eighteen and oldest being seventy-five years old. The training targeted processors who had never benefited from this type of training and comprised 30% youth.

The processors were put into three groups. The first group had their training on the 11<sup>th</sup> and 12<sup>th</sup> of December, the second on the 13<sup>th</sup> and 14<sup>th</sup> of December and the final was on the 18<sup>th</sup> and 19<sup>th</sup> December 2018. It was imperative to include the younger fish processors in the training and teach them modern practices as majority of the fish processors are aging





**Figure 1. The Executive Director of DAA, welcoming participants to the workshop**

Age categories were as follows:

AGE RANGE	NUMBER OF PEOPLE
18-----30 Years	30
31-----40	40
41-----50	20
51-----60	3
61-----and above	7

The above shows that we had at least 30% of participants being youthful which is far above our objective of attracting 10% youth into the training. Training method was participatory, questions and answers, practical exercises and presentations as well as discussions were used, since most processors were illiterates.

Topics discussed included the following:

- What a business is.
- Book-keeping.
- Proper hand washing.
- Fish processing and preservation methods.
- Ahotor Oven usage.
- Class one Certification.
- Closed season, as a management measure.
- Costing, profit and loss, savings in Fisheries business.

## 2.1 Orientation

The workshop was scheduled for two days, and began with self-introductions by the participants. Ground rules were then set to guide all participants during the workshop. These were:

- All mobile phones should be put on silent.
- Everyone should respect each other's responses to questions asked.
- There should be less movement in the classroom.
- Anybody who wants to respond to a question must raise her hand and only talk when called.
- All waste must be deposited in the litter bin provided.

Participants were then asked to state their expectation of the workshop. Some of which were:

- To learn new techniques in smoking fish.
- To learn how to use the new Ahotor oven to process fish.
- To understand why the Chorkor oven is being discarded
- Acquire new knowledge to improve their fisheries business

### 3. DAY ONE

#### 3.1 What Is A Business?

Participants were asked to explain what a business is. Almost all present gave different answers but mainly those that involved buying and selling . The facilitator Nii Okaija, explained that business could also be services that we offer people and get paid for. Processors also mentioned businesses that can be found in their communities.

The facilitator went on to explain the importance of having a business name, to enable clients easily locate the business. He went on to explain that registering a business can be done in a day at the District /Municipal /Metropolitan Assembly.

According to him, persons who are in the food business are required to go through annual health examination, at the Department of Environmental Health. The department of Rural Enterprise will also require information on the location, business name, contact person etc. before a certificate would be given.

#### 3.2 Book Keeping /Costing/Profit And Loss Analysis

Nii Okaija explained book keeping as the art of keeping records on all expenses incurred in whatever business we as well as do the sales/income made, to enable a processor determine her profit. Every business man should keep records of total cost of production as well as total revenue to determine profit or loss.

He explained that one does not need to be able to read and write, that individual can develop symbols to represent a cost or revenue that they want to write down.

Participants were put into groups of ten to develop their symbols and cost a fish processing venture.

All groups elected a secretary to present their work in a plenary which was discussed by all present.



**Figure 2. A facilitator Nii Okaija taking participants through session on Business Management**

During the discussions, the participants realized that do not set aside some of their income for maintenance/replacement of their stove and equipment such as smoking trays, baskets, knives, etc. Much as they paid daily, weekly, monthly or yearly wages to their helpers, all

agreed that they do not normally pay themselves any wages because they own the business. After much deliberation, it was unanimously agreed that paying themselves wages would help avoid unnecessary purchases and be able to save money for the future.

### **3.3 Hygienic Fish Handling**

#### **3.3.1 Effective hand washing**

Proper hand washing is the first step in hygienic processing of fish. The trainees were asked to demonstrate proper hand washing. None of them was able to demonstrate the ten steps in good hand washing. This session was facilitated by Madam Emelia Nortey who demonstrated the process after which all one hundred participants took turns to practice.

Processors were asked when it was important to wash hands. They gave the following responses:

- After visiting the toilet
- Before meals
- After changing a child's diaper
- After shaking hands with a lot of people
- Before you start processing
- When you return from the market.
- Any time your hands are dirty.



**Figure 3. A fish processor from Winneba demonstrating effective hand washing during hygienic fish handling training**

#### **3.3.2 Fish processing methods.**

The participants were asked to name the various methods of preserving fish. Some of fish preservation methods mentioned are as follows.

- Icing.
- Smoking.

- Sun drying.
- Frying.
- Fermenting, as well a combination of two or three of the methods mentioned above.

The facilitator emphasized the importance of personal and environmental hygiene in fish processing, such as:

- Wearing of appropriate clothing during processing. This was demonstrated and explained to participants. According to the facilitator, completely covering one's hair prevents processors from scratching and touching fish at the same time which may contaminate the fish.
- Nails should be kept short to avoid dirt accumulating in nails.
- No wearing of jewelries, ear rings, rings, bracelets etc. during processing.
- Wearing of protective clothing etc. aprons, overcoat, head tie.
- Wearing of Appropriate foot wear.
- Less talking during processing since this could lead to bacteria infestation of food.
- No chewing of gum, sticks, sponges.
- No spitting.
- No eating.

#### ICING OF FISH

Processors were asked what in their opinion caused spoilage of fish. Their responses were as follows.

- Heat/sun.
- If kept too long at sea.
- If not iced.
- If not processed early.
- If gills and gut are not removed.

Processors were asked how fish can be kept fresh; their answers were:

- Fresh fish should be sold fast.
- Should be iced early.
- Should be processed early.

According to the facilitator, icing is one of the ways in which fish harvested is cooled down quickly to avoid spoilage. It should be done at sea to ensure freshness at landing. This processing method was discussed and demonstrated to processors. Processors had their turn of icing fish. During the icing process, some of the participants were of the view that money was being wasted on too much ice. The next day when the iced fish was opened for inspection, participants agreed it was using more ice was worth it. The facilitator explained that fish preserved this way can stay fresh for at least two weeks. Those who sell fresh fish agreed that it was better to keep fish on ice and just display one, for customers to see the type of fish being sold, instead of displaying all the fish on the tray exposed to the heat from the sun.





**Figure 4. Participants demonstrating good icing practice during hygienic fish handling training**

## 4. DAY TWO

### 4.1 Ahotor Oven Usage

Madam Emelia asked participants those who had heard, seen or used the Ahotor oven to show by raising their hands. Out of one hundred processors, fifteen had used Ahotor oven in smoking fish, thirty had seen but never used one, and fifty-five had never seen one before.

According to the facilitator since the 1960s, fish has been smoked on round metal barrel or round mud stoves which were seen to be uncomfortable to use, so FAO and Food Research Institute came up with the Chorkor oven which was more fuel efficient and easy to use. With time the construction of the Chorkor oven was compromised resulting in the use of still too much fuelwood and very high smoke emissions that affected the health of the processor as well as the consumer.

She explained to the participants, it was for this reason that the Ahotor oven was developed by the SFMP through its implementing partner SNV. She elaborated on the differences between the Ahotor and Chorkor ovens as:

- The Ahotor has a combustion chamber that allows fuel wood to burn completely thus using less fuel wood and allows for even distribution of heat within the oven.
- The Ahotor has a fat collector that acts as a receptor for the fluids that drains from the fish during smoking. Wood ash is spread on the fat collector to soak fluid from fish, which results in easy cleaning of fat collector and also prevent further combustion that will leave smoke deposits on the fish.
- the Ahotor emits less smoke, therefore one can sit around in the kitchen during processing and cook without the risk of smoke inhalation.



**Figure 5. Using an Ahotor stove**

The participants who had used Ahotor oven before testified that fish smoked with Ahotor looks more beautiful than that of the Chorkor. Processors took turns in using the Ahotor oven at the DFTC to smoke fish.





**Figure 6. Facilitator explaining the importance of Grate in the Ahotor Oven**



**Figure 7. Facilitator explaining the benefits of Fat-collector and spreading Wood Ash on Fat collector to absorb fluids from fish during smoking**





**Figure 8. Processors washing fish in potable water before smoking**



**Figure 9. Processors arranging fish on Tray for smoking**



**Figure 10. Processors observing fish smoked with Ahotor Oven**

#### **4.1.1 Class one certification**

The facilitator introduced the processors to the Class 1 Recognition Scheme. According to the scheme has been instituted to promote the production and trade of quality in Ghana. To qualify for the scheme, a processing facility will be audited on basic food safety protocols such as:

- The processing facility should be fenced to prevent entry by pests and household animals.
- The facility should have a place of convenience.
- The facility should have access to potable water with hand washing facility.
- The facility should have a raised cemented platform to receive fish.
- The facility should have an Ahotor oven.
- The facility should have demarcated area for storing fish.
- Packaging materials used should be clean.
- The facility should not be near a refuse dump or a gutter etc.

The facilitator intimated that signing up to the scheme will enable processes to sell in supermarkets and hotels and advised the participants to aspire to have their facilities audited. Participants who have the Ahotor oven explained it's the benefits to their colleagues. They however complained that the recognition process was too expensive. They were therefore advised to prepare towards it.

#### **4.2 Savings**

There was an extensive discussion on the importance of savings among processors. Some were of the view that savings was not critical especially if you don't have a surplus income. Others said once you can invest your money in the fishing business to earn more income, you don't need to save. Processors however agreed that savings is setting aside part of one's income for emergencies like maintenance of equipment, expanding business, paying school

fees, in time of ill health etc. All the processors said they had a way of saving towards such costs.

The following are some of the places where processors keep their savings.

**Table 1. Places where processors keep their savings**

PLACES WHERE MONEY IS KEPT	NUMBER OF PEOPLE INVOLVED
BANK	30
MOBILE MONEY	30
MONEY BOX	40
UNDER PILLOW	18
INSIDE CLOTHING	20
UNDER CARPET	20
DAILY SUSU	50
UNDER STORED PANS	10
IN CHILDREN'S SHOES	10



**Figure 11. Participant from Bortiano, illustrating how to develop a savings culture**  
 Participants were advised to save with credible banks so they can access credit when necessary.





**Figure 12. Participants doing group work and discussion**

### **4.3 Closed Season**

Mrs. Lydia Sasu, Executive Director of Development Action Association (DAA) facilitated this session. Aunty Lydia asked processors why they do not agree with MoFAD on the planned close season.

Some of their reasons are as follows:

- The sea has never been closed before.
- They are not paid workers.
- The proposed time of closure is the time for bumper harvest /festivals.
- Fishing is their livelihood.

The Executive Director explained extensively the essence of the closed season. According to her, fishes spawn around August, so they need not be disturbed that is why most fish harvested at this time have a lot of eggs in it. If we consume the mother fish with their babies, then very soon fish stocks would be depleted. When asked if fish catches are the same today as it was ten years ago, the participants said no.

Aunty Lydia shared with the group the successes of the closed season implemented on the Densu Estuary to revamp oyster stocks and how after five months of closure, more and bigger oysters are harvested to the joy of all.

One of the participants added that ‘we need to close because she learnt from a different platform that herrings get pregnant in May/June. They come to the shore to lay their eggs and follow the fingerlings until they enter the sea and that fishes depend on the weather to spawn.

At the end of the training, all the participants agreed that the close season is in their interest, and so everyone should talk to their husbands, brother and relatives in the fishing industry to embrace it.

She also advised all to think about alternative livelihoods to generate some income during the closed season.



**Figure 13. Executive Director interacting with Participants on need for a Closed Season for fishing in Ghana**

## 5. CONCLUSION

In closing processors were asked to say the most important knowledge that they had acquired in the two days; some of the responses are as follows.

- Observing personal and environmental hygiene during processing.
- Costing, Book-keeping and profit and loss analysis.
- Self-remuneration to reduce unnecessary buying.
- Health benefits of Ahotor oven.
- Effective hand washing.
- Benefits of proper icing.

Processors were then asked to state how they intend to use the knowledge acquired.

Responses are as follows:

- Use it to improve my fish processing business.
- Share knowledge acquired with those who could not attend the workshop.
- Put into practice knowledge gained.
- Open a bank account and start savings.

All processors present at the two-day workshop pleaded that we should pay them periodic visits so that their individual challenges at their processing site can be addressed.



Figure 14. Cross section of participants





**Figure 15. Participants with their children. Nursing mothers are also welcome to participate in training at the DFTC.**



**Figure 16. Cross section of participants**