



**USAID | GHANA**  
FROM THE AMERICAN PEOPLE

# SUSTAINABLE FISHERIES MANAGEMENT PROJECT (SFMP)

## Training on Healthy Fish Handling for Fish Processors



MARCH, 2018

THE  
UNIVERSITY  
OF RHODE ISLAND  
GRADUATE SCHOOL  
OF OCEANOGRAPHY



Development  
Action Association

This publication is available electronically in the following locations:

*The Coastal Resources Center*

[http://www.crc.uri.edu/projects\\_page/ghanasfmp/](http://www.crc.uri.edu/projects_page/ghanasfmp/)

*Ghanalinks.org*

<https://ghanalinks.org/elibrary> search term: SFMP

*USAID Development Clearing House*

<https://dec.usaid.gov/dec/content/search.aspx> search term: Ghana SFMP

**For more information** on the Ghana Sustainable Fisheries Management Project, contact:

USAID/Ghana Sustainable Fisheries Management Project

Coastal Resources Center

Graduate School of Oceanography

University of Rhode Island

220 South Ferry Rd.

Narragansett, RI 02882 USA

Tel: 401-874-6224 Fax: 401-874-6920 Email: [info@crc.uri.edu](mailto:info@crc.uri.edu)

**Citation:** Development Action Association. (2017). Training on Healthy Fish Handling for Fish processors. The USAID/Ghana Sustainable Fisheries Management Project (SFMP). Narragansett, RI: Coastal Resources Center, Graduate School of Oceanography, University of Rhode Island and Development Action Association. GH2014\_ACT130\_DAA. 10 pp.

**Authority/Disclaimer:**

Prepared for USAID/Ghana under Cooperative Agreement (AID-641-A-15-00001), awarded on October 22, 2014 to the University of Rhode Island, and entitled the USAID/Ghana Sustainable Fisheries Management Project (SFMP).

This document is made possible by the support of the American People through the United States Agency for International Development (USAID). The views expressed and opinions contained in this report are those of the SFMP team and are not intended as statements of policy of either USAID or the cooperating organizations. As such, the contents of this report are the sole responsibility of the SFMP team and do not necessarily reflect the views of USAID or the United States Government.

## Detailed Partner Contact Information:

**USAID/Ghana Sustainable Fisheries Management Project (SFMP)**  
**10 Obodai St., Mempeasem, East Legon, Accra, Ghana**

**Telephone: +233 0302 542497 Fax: +233 0302 542498**

Maurice Knight	Chief of Party <a href="mailto:maurice@crc.uri.edu">maurice@crc.uri.edu</a>
Kofi Agbogah	Senior Fisheries Advisor <a href="mailto:kagbogah@henmpoano.org">kagbogah@henmpoano.org</a>
Nii Odenkey Abbey	Communications Officer <a href="mailto:nii.sfmp@crcuri.org">nii.sfmp@crcuri.org</a>
Bakari Nyari	Monitoring and Evaluation Specialist <a href="mailto:hardinyari.sfmp@crcuri.org">hardinyari.sfmp@crcuri.org</a>
Brian Crawford	Project Manager, CRC <a href="mailto:brian@crc.uri.edu">brian@crc.uri.edu</a>
Ellis Ekekpi	USAID AOR (acting) <a href="mailto:eekekpi@usaid.gov">eekekpi@usaid.gov</a>

Kofi.Agbogah  
[kagbogah@henmpoano.org](mailto:kagbogah@henmpoano.org)

Stephen Kankam  
[skankam@henmpoano.org](mailto:skankam@henmpoano.org)  
Hen Mpoano  
38 J. Cross Cole St. Windy Ridge  
Takoradi, Ghana  
233 312 020 701

Andre de Jager  
[adejager@snvworld.org](mailto:adejager@snvworld.org)  
SNV Netherlands Development Organisation  
#161, 10 Maseru Road,  
E. Legon, Accra, Ghana  
233 30 701 2440

Donkris Mevuta  
Kyei Yamoah  
[info@fonghana.org](mailto:info@fonghana.org)  
Friends of the Nation  
Parks and Gardens  
Adiembra-Sekondi, Ghana  
233 312 046 180

Thomas Buck  
[tom@ssg-advisors.com](mailto:tom@ssg-advisors.com)  
SSG Advisors  
182 Main Street  
Burlington, VT 05401  
(802) 735-1162

Victoria C. Koomson  
[cewefia@gmail.com](mailto:cewefia@gmail.com)  
CEWEFIA  
B342 Bronyibima Estate  
Elmina, Ghana  
233 024 427 8377

Lydia Sasu  
[daawomen@daawomen.org](mailto:daawomen@daawomen.org)  
DAA  
Darkuman Junction, Kaneshie Odokor  
Highway  
Accra, Ghana  
233 302 315894

### For additional information on partner activities:

CRC/URI: <http://www.crc.uri.edu>  
CEWEFIA: <http://cewefia.weebly.com/>  
DAA: <http://womenthrive.org/development-action-association-daa>  
Friends of the Nation: <http://www.fonghana.org>  
Hen Mpoano: <http://www.henmpoano.org>  
SNV: <http://www.snvworld.org/en/countries/ghana>  
SSG Advisors: <http://ssg-advisors.com/>

## **ACRONYMS**

DAA	Development Action Association
DFTC	DAA Fisheries Training Centre
FC	Fisheries Commission
SFMP	Sustainable Fisheries Management Project
USAID	United States Agency for International Development
IUU	Illegal Unregulated and Unreported

# TABLE OF CONTENTS

## CONTENTS

ACRONYMS.....	iii
TABLE OF CONTENTS.....	iv
LIST OF FIGURES .....	iv
EXECUTIVE SUMMARY .....	1
SECTION 1 BACKGROUND.....	2
1.1 Workshop Objectives .....	2
1.2 Expected outcomes.....	2
SECTION 2 OPENING/ORIENTATION .....	2
2.1 Training.....	2
2.1.1 Fishermen.....	2
2.1.2 Fishmongers.....	3
SECTION 3 CONCLUSION .....	5

## LIST OF FIGURES

Figure 1 Mr. Manu of FC taking fishermen through Hygienic Fish Handling at sea.....	3
Figure 2 A picture of fish processors waiting while smoking fish on Ahotor oven used for the Hygienic Fish Handling demonstration. ....	4
Figure 3 Fish processors being given lesson on Hygienic Fish Handling- The benefits of HFH by Emelia Nortey, Center Manager. ....	5

## **EXECUTIVE SUMMARY**

Hygienic Fish Handling Training was conducted for (30) thirty fishermen and thirty (30) Fishmongers on 21<sup>st</sup> and 22<sup>nd</sup> March 2017 at the interim Fisheries Training Centre at Tsokomey in the Ga South Municipal Assembly of the Greater Accra Region. The objectives of this workshop was to help fishers

- To identify critical points in post-harvest handling of fish that leads to spoilage.
- To improve fish quality to satisfy consumers.
- To improve fish quality to increase profit.
- To avoid unnecessary spoilage of fish after harvest and through the value chain of fish handling.

The sixty participants were from Kokrobite, Nyanyanor, Oshiyie, Chorkor, Bortianor and Tsokomey. All participants are small scale enterprises.

The workshop was facilitated by Mr. Samuel Duodo Manu, Head of the Post-Harvest Unit of Fisheries Commission.

### **Topics treated included:**

- Key issues associated with fish handling.
- Freshness assessment.
- Personal hygiene of food handlers.
- Hand washing.
- Food safety hazards in fishery products.
- Fish handling processing methods.
- Packaging and marketing of fish.
- Objectives of hygienic fish handling.
- Smoking fish with improved fish smoking oven (Ahotor).

The training was very interactive. The facilitator used pictures and real issues in fish handling as well as practical sessions which the fishers carried out and presented in plenary sessions. At the end of the workshop the fishermen pleaded that Fisheries Commission should speed up the formation of the Fisheries Watch Dog Committees at the landing beaches. Fishermen pleaded that the Fisheries Minister should give the committees authority note to arrest fishermen who engage in IUU fishing. Fishermen from Nyanyanor promised to visit the Minister's office for an official letter to arrest IUU practitioners. Fishmongers were happy with the result of smoking fish with the Ahotor oven but were of the view that the cost was rather on the high side and pleaded for a reduction in price to make it accessible to many. Fisher folks accepted the need to go through health screening every year with all their helpers. They were of the view that DFTC staff should invite the public health staff of the Ghana Health Service to come and screen them at the Centre.

Fishers were assured that DFTC staff would visit their processing sites to monitor their activities and ensure that best practices would be their hallmark.

## **SECTION 1      BACKGROUND**

Fish is one of the protein foods of great economic advantage but can deteriorate if not handled properly. Fishers along the fisheries value chain tend to lose a lot of income through poor post-harvest handling of fish. Availability of fish ensures food security in communities and homes.

### **1.1      Workshop Objectives**

- To identify critical points in post-harvest handling of fish that leads to spoilage.
- To improve fish processing quality to satisfy consumers.
- To avoid unnecessary spoilage of fish after harvest and through the value chain of fish handling.
- To improve fish quality to increase profit.

### **1.2      Expected outcomes**

- That fishermen would adhere to fisheries laws and regulations in their business.
- That fishermen would ensure best practices in their fishing business.
- That fish processors would handle fish in a hygienic manner.
- That all fishers would go through health screening with their employees/workers every year.
- That there would be a drastic reduction of post-harvest losses in fish along the value chain.

## **SECTION 2      OPENING/ORIENTATION**

The workshop was opened with a word of prayer, and preliminary introduction of participants and facilitator by Emelia Nortey.

Mr. Samuel Duodo-Manu oriented participants on the importance of avoiding or reducing post-harvest losses of fish along the value chain. He spoke about post-harvest losses and how it affects household income which can lead to collapse of livelihood which will result in poverty.

He informed participants that the training would be very interactive and as practical as possible. There would be group task and plenary sessions. He pleaded with participants to have keen interest in the workshop and learn new ideas to improve their livelihood.

All thirty women fish mongers reported for the training with three other women who were not invited, this represented 110%; whilst only fourteen (14) out of the thirty (30) fishermen invited attended the workshop, representing 47%. The reason for low attendance of the fishermen was that the workshop coincided with the burial of a fellow fisherman.

### **2.1 Training**

Mr. Samuel Duodo Manu Head of the Post-Harvest Unit of Fisheries Commission facilitated the two-day workshop.

The first day was for fishmongers whilst the second day was for fishermen.

#### **2.1.1 Fishermen**

After going through the fisheries laws and regulations, key issues discussed with fishermen was how to maintain quality of fish from capture to shore. It came to light that methods used to catch fish can affect the quality. Some of the methods of fishing were:



- Set/gill nets.
- Long lining.
- Seining and trawling.

#### Handling on the boat:

It came to light that the length of time the nets are in the water affects fish quality. The shorter the time of harvest, the better the quality of fish. It is better to fish at night when it is cooler. Fishing trips should be kept short i.e. about 4.00 hours to land fish fresh.

Fish should be placed in covered boxes to prevent trampling on it. There should be enough crew to handle fish carefully and quickly on the boat. Fishermen were advised to go to sea with ice. Over fishing/too much fish in a boat affects quality. There was a practical demonstration on how to ice fish effectively by facilitator as well as fishermen. Fishermen took turns to demonstrate how to wash hands effectively after a demonstration by the facilitator. They were advised on the importance of going through health screening annually with their crew on the boat.



**Figure 1 Mr. Manu of FC taking fishermen through Hygienic Fish Handling at sea.**

#### **2.1.2 Fishmongers**

Topics treated with fish processors included

- Key issues associated with fish handling.
- Freshness assessment.
- Personal hygiene of food handlers.
- Hand washing.
- Food safety hazards in fishing products.
- Fish handling and processing methods (icing, smoking, salting, drying, etc.).
- Packaging and marketing of fish products.
- Smoking fish with improved fish smoking stoves (Ahotor oven).

Participants were sensitized by Mr. Manu on the importance of hygiene in fish handling to avoid contamination during processing.



Wearing of overcoats and hair tie by women processors was emphasized to ensure neat outfits during processing. There was a lot of practical demonstrations on how to handle fish as soon as it is purchased from landing beach till its processed in one way or the other. Practical demonstration of hand washing preferably under running water was practiced in turns by all participants. Women were helped in a participatory way to assess freshness of fish before purchasing. Different methods of preserving fish were discussed after which there was a practical demonstration on how to ice fresh fish in an ice box. Participants took turns in icing fresh fish. They were assured that when fish is well iced it can stay fresh for 14 days. Packaging and marketing of fresh fish was an area of concern during the discussion because participants agreed that most often smoked fish especially is contaminated with germs due to the way it is packaged and sold in our markets. There was a lengthy discussion on how processed fish could be packaged and displayed for sale in our open markets. One school of thought was to sell processed fish in glass or transparent box to avoid dust and house flies contaminating it.

The climax of the workshop was when the newly built Ahotor oven was used to smoke fish prepared by participants. The components of the oven were explained as well as the difference between the Ahotor and Chorkor ovens. The importance of the fat collector was explained and the fact that it helps to reduce the amount of smoke deposit on the fish thereby reducing the level of PAH in the fish, Fat and water draining from fish during smoking too does get into the fire to emit more smoke.



**Figure 2 A picture of fish processors waiting while smoking fish on Ahotor oven used for the Hygienic Fish Handling demonstration.**



**Figure 3 Fish processors being given lesson on Hygienic Fish Handling- The benefits of HFH by Emelia Nortey, Center Manager.**

### **SECTION 3 CONCLUSION**

The forty-seven participants appreciated the exposure that they were given in a trade that they have been operating for years.

The fishermen were of the view they should be invited more often to such training programs because they did not know that activities such as catching too much fish to fill their boats rather lead to compromising the freshness of the fish. Also that fish landed at the beaches should be under shade to avoid early deterioration. They agreed to start going to sea with ice. Another area of concern of the fishermen was the use of Unapproved, Unregulated and Unreported fishing practices. They condemned it and asked that the law must be enforced by authorities and that chief fishermen of the various landing beaches should be held responsible and prosecuted if they allow such fish to be landed and sold at their beaches.

Fishmongers were happy with the result of the Ahotor oven when used to smoke fish. Less fuel wood was used and less smoke was emitted from the oven whilst smoking. One could even sit by the oven whilst processing without in hailing smoke. They however pleaded that the cost of acquiring the oven was rather on the high side and that authorities should reduce or subsidize the price to enable them acquire one.

Visits would be made to processing sites to ensure that expected outcomes of the training are achieved.