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SUSTAINABLE FISHERIES MANAGEMENT PROJECT (SFMP)

Demonstration and Sensitization on Use of the Ahotor Oven



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THE
UNIVERSITY
OF RHODE ISLAND
GRADUATE SCHOOL
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Development
Action Association

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Cover photo: Fish Processors learning how to use the Ahotor Oven

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ACRONYMS

CCM	Centre for Coastal Management
CEWEFIA	Central and Western Region Fishmongers Improvement Association
CRC	Coastal Resource Center
CSLP	Coastal Sustainable Landscape Project
DAA	Development Action Association
DFAS	Department of Fisheries and Aquatic Science
DMFS	Department of Marine Fisheries Sciences
DQF	Daasgift Quality Foundation
FtF	Feed the Future
GIFA	Ghana Inshore Fishermen's Association
GIS	Geographic Information System
GNCFC	Ghana National Canoe Fishermen's Council
HM	Hen Mpoano
ICFG	Integrated Coastal and Fisheries Governance
MESTI	Ministry of Environment Science and Technology
MOFAD	Ministry of Fisheries and Aquaculture Development
NDPC	National Development Planning Commission
NGOs	Non-Governmental Organizations
SFMP	Sustainable Fisheries Management Project
SMEs	Small and Medium Enterprises
SNV	Netherlands Development Organization
SSG	SSG Advisors
STWG	Scientific and Technical Working Group
UCC	University of Cape Coast
URI	University of Rhode Island
USAID	United States Agency for International Development
WARFP	West Africa Regional Fisheries Development Program

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EXECUTIVE SUMMARY

Fish processing is major economic activity for women along the coast of Ghana. Fish is processed by drying, frying and smoking. Over 70% of fish harvested is smoked using traditional smokers like the Chorkor oven.

A baseline survey carried out by SFMP indicated that the use of these traditional methods by the fishmongers to process, preserve and store fish is one of the reasons accounting for high post-harvest losses and low profit margins among traders. Additionally, there are health concerns associated with traditional smoking methods, such that continuous exposure to smoke triggers asthma and causes cancer in some cases. The smoked fish also contain PAH levels that are well above those recommended for human health, with the widely used Chorkor oven some 7-10 times the EU standard.

To this effect, SNV and other partners under the SFMP developed the Ahotor smoker, which is a more efficient and improved fish smoker with many other benefits beyond improving health; it saves time, reduces smoke inhalation and increases comfort for fish processors, contributes to a cleaner environment, and ensures a more sustainable use of a diminished energy resource (fuel wood).

To create awareness, promote the use and adoption of the Ahotor oven among fish processors, DAA used an oven constructed by SFMP for a project beneficiary, to demonstrate its use to members of 4 fish processing groups – Boafo, Yena and Osimpam fish processors in Winneba and Tsokomey and Adom Nnsa fish processors association in Apam.

The objectives of this demonstration are to: sensitize fish processors on the Ahotor oven technology and promote the benefits of its use.

The expected outcome of the training is that fish processors will appreciate the use of the oven and increase its adoption.

INTRODUCTION

Focused on to ensure healthy food consumption in addition to socio economic benefit to fish processors. This has made the need for the introduction of modern Ahotor fish processing stove aimed at ensuring the produce of less smoke in fish processing which will go by far way to reduce ophthalmologic and upper respiratory tract disorders among its users, the use less fuel wood in fish processing will reduce cost of production to attain more profit and the reduction of PAH (acidity) on processed fish to promote good health by consumers of the processed fish.

Since the introduction of this technology, the processors are not adopting the new technology. To promote the use of Ahotor stove to fish processors, DAA did demonstration using the Ahotor stove to teach processors the economics, social and health benefits of using Ahotor stove in fish smoking Business at Warabeba with Boafo Yenam and Osimpam fish processors association on 2nd and 15th of May, 2018 in Winneba, Tsokomey Fish processors on the 13th of August, 2018 and Adom Nnsa Fish processors Association in Apam on the 14th of August, 2018.

The demonstration was attended by 153 processors (15 males, 138 females)

OBJECTIVES

- To sensitize fish processors at Warabeba Community on the ahotor oven technology
- To educate the fish processors on the benefits of using the oven fish smoking
- To discuss the price of the oven and the financing options available.

TRAINING METHODOLOGY

The training facilitator introduced the Ahotor oven to the fish processors and showed them the various functions of the components of the oven that makes it a better smoker than the Chorkor. These components are the metal grate, the combustion chamber, the secondary air inlet and the fat collector.



Figure 1: Fish processors at Warabeba learning how to use Ahotor Oven for smoking fish



Figure 2: Fish processor washing her hands under running water

DEMONSTRATION WITH AHOTOR STOVE

The Ahotor stove was used to smoke fish by some selected processors to ascertain its efficiency and its low fuel consumption level. The processors were also thought on how to hygienically process and store fish: washing hands with soap under running water, using potable water to wash fish before arranging on trays for smoking and storing fish in a well-ventilated room devoid of rodents and insects.



Figure 3: Fish processors at Warabeba arranging Trays of fish on Ahotor Oven for smoking

ECONOMIC SOCIAL AND HEALTH BENEFIT OF AHOTOR STOVE

The facilitator shared some of the social and health benefits of the Ahotor oven as;

- uses less fuelwood, this helps to conserve the environment
- emits less smoke, more comfort for the smoker
- leaves less smoke deposits on the fish (Low PAH)



Figure 4: Fish processors descaling fish before smoking on Ahotor Oven



Figure 5: Madam Comfort Oklikah, cleaning the Fat collector on Ahotor Oven before using for smoking fish



Figure 6: Madam Charity Gakor, setting fire in the Ahotor Oven for smoking fish



Figure 7: Madam Charity and Esi using Ahotor Oven for smoking fish



Figure 8: Fish processors displaying fish smoked with Ahotor Oven



Figure 9: Boafo Yenam Fish processors so excited about how fast and nice the Ahotor Oven smokes

CONCLUSION

The demonstration of Ahotor Stove with Boafo Yenam fish processor Association at Warabeba, was fruitful. The fish processors were happy with the new technology and the financing arrangements available.

ANNEXES

Annex 1: Ahotor Oven Price and Payment Plan

OVEN SPECIFICATION AND COSTS								
COST OF STOVE BASE	GHC	COST OF TRAY & HOOD	GHC	TOTAL COST	@ 30% SUBSIDY (GHC)	20% CASH COLLATERAL	MONTHLY RPMT (GHC)	DAILY RPMT (GHC)
		30 Trays	1,125.00	2,735.00	1,915.00	383.00	359.06	17.95
		20 Trays	720.00	2,330.00	1,630.00	326.00	305.63	15.28
Double Unit	1,610.00	10 Trays	395.00	2,005.00	1,400.00	280.00	262.50	13.13
	(\$400)	No Tray	-	1,610.00	1,130.00	226.00	211.88	10.59
		20 Trays	720.00	1,545.00	1,080.00	216.00	202.50	10.13
Single Unit	825.00	10 Trays	395.00	1,220.00	855.00	171.00	160.31	8.02
		No Tray	-	825.00	580.00	116.00	108.75	5.44
		20 Trays	720.00	1,945.00	1,360.00	272.00	255.00	12.75
Retrofitting	1,225.00	10 Trays	395.00	1,620.00	1,135.00	227.00	212.81	10.64
Double Unit	(\$300)	No Tray	-	1,225.00	860.00	172.00	161.25	8.06
Retrofitting		10 Trays	395.00	1,005.00	700.00	140.00	131.25	6.56
Single Unit	610.00	No Tray	-	610.00	430.00	86.00	80.63	4.03

Annex 2: Processors ready to Adopt Ahotor Oven

After the use Ahotor Stove, participants were more contented with Stove and about 16 of them wrote their names for adoption of the Ahotor stove.

Annex 3: Photo Gallery



Figure 10: Demonstration with Boafo ye na fish processors group. Venue: Warabeba-Winneba, Date: 2nd May, 2018



Figure 11: Ahoter stove community demonstration with Osimpam fish processors group. Venue: Winneba, Date: 15th May, 2018



Figure 12: Fish processors at Winneba learning how to use Ahoter Oven for fish smoking



Figure 13: Mr. Baiden, District Fisheries Commissioner of Effutu Assembly after observing how effective Ahotor smokes advising that, each processor should switch from Chokor to Ahotor



Figure 14: Ahotor stove community demonstration with Tsokomey fish processors group. Venue: Tsokomey Interim DFTC. Date: 13th August, 2018



Figure 15: Ahotor Oven is being used to smoked fish at Tsokomey by some Processors.



Figure 16: Some fish processors at Tsokomey, displaying Salmon with Ahotor Oven



Figure 17: Cross section of participants from Tsokomey being sensitized on the usage of Ahotor Oven



Figure 18: Ahotor stove community demonstration with Adom nnsa fish processors group. Venue: Apam. Date: 14th August, 2018



Figure 19: Madam Ellen Tetteh a fish processor from Apam arranging fire wood into grate in the combustion chamber of the Ahotor Oven.



Figure 20: Ibrahim Nassam Community Liaison person of Apam, teaching processors how set fire on the Ahotor Oven



Figure 21: Adom Nnsa fish processor group learning the importance of the fat collector on the Ahotor Oven and how to clean after processing



Figure 22: Section of participants learning the function of the Grate in the Ahotor Oven



Figure 23: Fish processors at Apam Adom Nnsa using Ahotor Oven to smoke Red fish