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SUSTAINABLE FISHERIES MANAGEMENT PROJECT (SFMP)

Environmental Mitigation and Monitoring
Annual Report



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THE
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OF RHODE ISLAND
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OF OCEANOGRAPHY



Hen Mpoano

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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

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Cover photo: Mangrove nursery site at Sanwoma (Credit: Hen Mpoano)

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	maurice@crc.uri.edu
Kofi Agbogah	Senior Fisheries Advisor	kagbogah@henmpoano.org
Perfectual Labik	Communications Officer	mary.sfmp@crcuri.org
Mary Afua Asare	Monitoring and Evaluation Officer	mary.sfmp@crcuri.org
Brian Crawford	Project Manager, CRC	brian@uri.edu
Ellis Ekekpi	USAID AOR (acting)	eekekpi@usaid.gov

Kofi.Agbogah
kagbogah@henmpoano.org
Stephen Kankam
skankam@henmpoano.org
Hen Mpoano
38 J. Cross Cole St. Windy Ridge
Takoradi, Ghana
233 312 020 701

Resonance Global
(formerly SSG Advisors)
182 Main Street
Burlington, VT 05401
+1 (802) 735-1162
Thomas Buck
tom@ssg-advisors.com

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

Victoria C. Koomson
cewefia@gmail.com
CEWEFIA
B342 Bronyibima Estate
Elmina, Ghana
233 024 427 8377

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

Lydia Sasu
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>
Resonance Global: <https://resonanceglobal.com/>
SNV: <http://www.snvworld.org/en/countries/ghana>

ACRONYMS

CEWEFIA	Central and Western Region Fishmongers Improvement Association
CBFM	Community Based Fisheries Management
CFR	Code of Federal Regulations
DAA	Development Action Association
EA	Environmental Assessment
ECO	Environmental Compliance Officer
EMMP	Environmental Mitigation and Monitoring Plan
FY	Fiscal Year
GoG	Government of Ghana
HM	Hen Mpoano
IEE	Initial Environmental Evaluation
IPs	Implementing Partners
M&E	Monitoring and Evaluation
SFMP	Sustainable Fisheries Management Project
SNV	Netherlands Development Organization
USAID	United States Agency for International Development

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OVERVIEW

USAID promotes environmentally sound design by requiring that all USAID funded activities undergo an environmental review. This is accomplished through an Initial Environmental Examination (IEE), an Environmental Assessment (EA) or a Request for a Categorical Exclusion, all in accordance with Title 22 of the Code of Federal Regulations Part 216, commonly known as 22 CFR 216 or "Reg 216."

During the FY 2015 of the USAID/Ghana Sustainable Fisheries Management Project (SFMP), an Environmental Monitoring and Mitigation Plan (EMMP) was prepared and approved by USAID. The EMMP complies with 22 CFR 216 and was prepared based on the revised USAID's Ghana Economic Growth Portfolio Initial Environmental Evaluation (IEE) which was already in place for the SFMP.

During the FY 2018 of the SFMP, all USAID environmental requirements laid down in the project Environmental Mitigation and Monitoring Plan (EMMP) were complied with to ensure no significant impact on the environment from activity implementation

REGULAR MONITORING AND INSPECTION

Monitoring protocols detailing out potential adverse impact with mitigation measures were developed for partners for activities with a negative determination with conditions, to track and monitor the progress of these activities.

The two major construction activities that were monitored during the first quarter of the year were; the construction of the DAA fisheries training center and the rehabilitation of the CEWEFIA training center. These activities were completed and the 2 training facilities were inaugurated. Regular visits were made to the sites during the construction phase. The contractors in charge ensured that all the mitigation measures outlined in their contract were complied with. During the visits, the general environmental conditions of these construction sites were good. There was no standing water in and around the site; no lead-based paint was used. The paints were stored properly so as to avoid accidental spills. Empty cans were disposed of in an environmentally safe manner away from areas where contamination of water sources could occur.

SFMP also constructed over 200 improved ovens (*Ahotor*) for beneficiaries (fish smokers) who were selected by SNV, Resonance, DAA and CEWEFIA in the Central, Western, Greater Accra and Volta Regions, to improve their smoking activities and also reduce the health risk associated with the use of the traditional *Chokor* ovens. Partners ensured that those in charge of the construction activities were walked through the potential impact and mitigation measures for the construction activities.

The Ankobra CBFM committee also benefited from a dugout canoe to aid their monitoring activities of the closed areas within the Ankobra Riverine area. It was ensured that the contractor was aware of all the environmental issues and potential adverse impact associated with the construction of the dugout boat.

ENVIRONMENTAL MITIGATION AND MONITORING TABLE

Most activities that partners were implementing had no negative determination with conditions. Activities conducted in the FY 2018 that had conditions and required monitoring and /or mitigation plans are included in the table below

Table 1: Activities with negative determination with conditions

Mitigation Measure	Responsible Party	Monitoring Scheme			Estimated cost	Monitoring Log		
		Indicators	Data source/ method	How often		Date	Result	Follow-up
Activity 4.2 Integrated Community Fisheries Management and Resilience Plans for the Ankobra River Estuarine and Mangrove Ecosystem								
<i>4.2.15 Mangrove Forest Restoration efforts within the CBFM plan area</i>								
Section 3.3 Fisheries Extension and Coastal Forests: <ul style="list-style-type: none"> Identify appropriate reforestation techniques MUST be monitored to assure that promoted techniques are appropriate to the specific local context. Evaluation must be conducted with full attention to potential adverse impacts, Promoted species must be endorsed for use by the relevant governmental authority; Promoted/ utilized biologic agents for soil fertility enhancement (if any) must be approved by the cognizant GoG entity and must be used/ promoted in conformity with the directives and restrictions attached to such approval. Use pesticides only in conformity with the provisions of a duly approved PERSUAP specifically designated as covering the activity in question. In the absence of such a PERSUAP, pesticide use is NOT permitted. 	HM	Review and screening of all documents, advocacy materials, and training curricula to ensure they are environmentally sound and follow the points outlined in the mitigation measures	Review and screening of materials	During mangrove establishment period	NA	Oct 2017 to Sept 2018	During nursing of the mangrove seedlings, it was ensured that no chemicals (fertilizers & pesticides) were used. The species nursed were the dominant mangrove species of the area and the preferred species by the community (<i>Rhizophora</i> and <i>Avicenia</i>)	The nursery establishment and replanting activity has been completed. Going forward, there will be monitoring of the replanted sites

Mitigation Measure	Responsible Party	Monitoring Scheme			Estimated cost	Monitoring Log		
		Indicators	Data source/method	How often		Date	Result	Follow-up
<ul style="list-style-type: none"> Seed distribution (if any) and input provision must be consistent with the above requirements. Treated seed must be dyed and seed distribution must be accompanied by education regarding appropriate handling and non-edibility. Demonstration and extension activities may not use/promote genetically modified cultivars. Such support can only be undertaken in conformity with USAID's biosafety procedures and requires an associated amendment to this IEE. Integrate significant stakeholder consultation, including customary users of resources 							<i>Sp)</i>	
4.5.Small wood planked boat construction for the Ankobra riverine communities for the monitoring of the community based fisheries management activities								
<p>IEE Section 3.5 Infrastructure: Agricultural plots and nurseries/6.1 rehabilitation or new facilities less than 1000M2</p> <p>1. During construction, IPs must ensure that contractors:</p> <ul style="list-style-type: none"> Desist from extracting construction materials from waterways or ecologically sensitive areas Identify and implement any feasible measures to increase the probability that forest products like timber are procured from legal, well-managed sources. Minimize the use of heavy machines Construction must be managed so that no standing water on the site persists more than 4 	HM	<p>Contractors should follow the points outlined in the mitigation measures</p> <p>Field reports of physical inspection during and after construction by the Env. Comp. Officer</p>	Field reports during construction	During construction period	NA	October 2017- July 2018	The contractor was taken through the potential effect the construction activity could have on the environment and the mitigation measures outlined to ensure no or minimal	Activity completed successfully

Mitigation Measure	Responsible Party	Monitoring Scheme			Estimated cost	Monitoring Log		
		Indicators	Data source/ method	How often		Date	Result	Follow-up
<p>days;</p> <ul style="list-style-type: none"> Prevent dumping of hazardous materials. Burn waste materials that are not reusable/readily recyclable, do not contain heavy metals and are flammable Concentrate noisiest types of work into as short a period as possible, and during least disruptive times of the day. Take measures to keep dust to a minimum Bore hole to be dug for domestic use should be tested for arsenic, coliform, nitrates and nitrites. <p>2. No lead-based paint shall be used. When lead-free paint is used, it will be stored properly so as to avoid accidental spills or consumption by children; empty cans will be disposed of in an environmentally safe manner away from areas where contamination of water sources might occur; and the empty cans will be broken or punctured so that they cannot be reused as drinking or food containers.</p> <p>3. Waste handling equipment and infrastructure. USAID intervention must result in the facilities' possessing adequate provision for handling the wastes they may generate; including human wastes.</p> <p>4. In terms of safety and health risks;</p> <ul style="list-style-type: none"> The contractor that will be responsible for the rehabilitation works will be required to have a Health & Safety Plan. The contractor will train the construction staff on the Health & Safety Plan. The contractor will be required to provide 						<p>impact.</p> <p>Follow-up during construction period</p>		

Mitigation Measure	Responsible Party	Monitoring Scheme			Estimated cost	Monitoring Log		
		Indicators	Data source/method	How often		Date	Result	Follow-up
<p>training on proper use of equipment.</p> <ul style="list-style-type: none"> The contractor will provide personal safety equipment to all workers (i.e. hard hats, goggles, steel-toed boots, gloves, dust masks). The contractor will provide firefighting equipment/measures. The contractor will ensure proper storage of building materials. The contractor provides medical services (access to a first aid kit). <p>Prevent access to site at all times by unauthorized persons</p>								
Activity 4.5 Central and Western Region Fishing Community Livelihood Development Value Chain and Post-harvest Improvements								
<i>Activity 4.5.4 Fisheries value chain improvements and livelihoods in Apam and Winneba, Central Region</i>								
<p>IEE Section 3.5 Infrastructure: Agricultural plots and nurseries/6.1 rehabilitation or new facilities less than 1000M2.</p> <p>1. Site Selection</p> <ul style="list-style-type: none"> Average slope of less than 5% and is not heavily forested, in an otherwise undisturbed local ecosystem, or in a protected area. The site is not within 30m of a permanent or seasonal stream or water body <p>2. Construction</p>	SNV	Field reports during and after construction by the Environmental Compliance Officer.	Regular field visits during construction period	During construction activities		29/11 to 1/12/18	Monitored oven construction at Dzemeni; all 5 ovens were built to specifications except 1 that had to be reconstructed to meet specifications	

Mitigation Measure	Responsible Party	Monitoring Scheme			Estimated cost	Monitoring Log		
		Indicators	Data source/ method	How often		Date	Result	Follow-up
<ul style="list-style-type: none"> IPs must desist from extracting fill, sand or gravel from waterways or ecologically sensitive areas IPs must identify and implement any feasible measures to increase the probability that forest products like timber are procured from legal, well-managed sources. Construction must be managed so that no standing water on the site more than 4 days; <p>3. Refurbishments of drying shed and the training on use and maintenance of the smoking ovens</p> <ul style="list-style-type: none"> IP shall create awareness among users on the environmental damage of unsustainable use of grown woodlots Provide personal safety equipment to all workers (i.e. hard hats, goggles, steel-toed boots, gloves, dust masks). <p>4. Safety and health • The contractor will:</p> <ul style="list-style-type: none"> Be required to have a Health and Safety Plan. Be required to train the construction staff on the Health and Safety Plan. Provide training on proper use of equipment. Provide personal safety equipment to all workers (i.e. hard hats, goggles, steel-toed boots, gloves, dust masks). Provide firefighting equipment/measures. Provide medical services (access to a first aid kit). 					<p>4-8/12/18</p> <p>7 to 16/12/18</p> <p>12/6/18 to 14/6/18</p>	<p>Oven construction inspection at Elmina; 6 new double units and 2 retrofitted double units were constructed. Dimensions of fat collectors had to be changed due to retrofitted ovens</p> <p>Inspection of oven construction in the Volta region (Keta and Hohoe). Ovens were constructed to environmental specifications</p> <p>Monitoring of oven construction at Biriwa.</p>		

Mitigation Measure	Responsible Party	Monitoring Scheme			Estimated cost	Monitoring Log		
		Indicators	Data source/ method	How often		Date	Result	Follow-up
						19-21/6/18	The location of one of the ovens had to be changed due to poor sanitary conditions of the area. Monitoring of oven construction at Keta for Class 1 scheme. All ovens were constructed to environmental specification	
						1/8/2018	Inspection of 2 double unit ovens in Swedru. All the ovens were constructed at already cleared bush, not a forested area.	

Mitigation Measure	Responsible Party	Monitoring Scheme			Estimated cost	Monitoring Log		
		Indicators	Data source/method	How often		Date	Result	Follow-up
Activity 4.5.14: Construction of DAA fisheries training center								
<p>IEE Section 3.5 Infrastructure: Agricultural plots and nurseries/6.1 rehabilitation or new facilities less than 1000M2</p> <p>5. During construction, IPs must ensure that contractors:</p> <ul style="list-style-type: none"> • Desist from extracting fill, sand or gravel from waterways or ecologically sensitive areas • Identify and implement any feasible measures to increase the probability that forest products like timber are procured from legal, well-managed sources. • Minimize the use of heavy machines • Construction must be managed so that no standing water on the site persists more than 4 days; • Prevent dumping of hazardous materials. Burn waste materials that are not reusable/readily recyclable, do not contain heavy metals and are flammable • Concentrate noisiest types of work into as short a period as possible, and during least disruptive times of the day. Take measures to keep dust to a minimum • Bore hole to be dug for domestic use should be tested for arsenic, coliform, nitrates and nitrites. <p>6. No lead-based paint shall be used. When lead-free paint is used, it will be stored properly so as to avoid accidental spills or consumption by children;</p>	ECO, SNV, DAA	<p>Completed review and screening form to ensure that the construction activity is environmentally sound and follow the points outlined in the mitigation measures in the IEE/EMMP</p> <p>Field reports of physical inspection during and after construction by the Env. Comp. Officer</p>	<p>Environmental and monitoring forms for the construction of the DAA Fisheries Training Center</p> <p>Field Reports during construction</p>	Monthly visits during construction work	NA	Oct 2017-April 2018	<p>The contractor was taken through the USAID Environmental procedures and the monitoring protocol developed to ensure the construction activities do not have significant impact on the environment.</p> <p>Waste was managed well and no pool of water was spotted on the site.</p> <p>Area was well fenced to prevent intrusion of people and animals</p>	Activity completed successfully

Mitigation Measure	Responsible Party	Monitoring Scheme			Estimated cost	Monitoring Log		
		Indicators	Data source/method	How often		Date	Result	Follow-up
<p>empty cans will be disposed of in an environmentally safe manner away from areas where contamination of water sources might occur; and the empty cans will be broken or punctured so that they cannot be reused as drinking or food containers.</p> <p>7. Waste handling equipment and infrastructure. USAID intervention must result in the facilities' possessing adequate provision for handling the wastes they may generate; including human wastes.</p> <p>8. In terms of safety and health risks;</p> <ul style="list-style-type: none"> • The contractor that will be responsible for the rehabilitation works will be required to have a Health & Safety Plan. • The contractor will train the construction staff on the Health & Safety Plan. • The contractor will be required to provide training on proper use of equipment. • The contractor will provide personal safety equipment to all workers (i.e. hard hats, goggles, steel-toed boots, gloves, dust masks). • The contractor will provide firefighting equipment/measures. • The contractor will ensure proper storage of building materials. • The contractor provides medical services (access to a first aid kit). • Prevent access to site at all times by unauthorized persons 								
<i>Activity 4.5.20: Rehabilitation of the CEWEFIA fisheries training center</i>								

Mitigation Measure	Responsible Party	Monitoring Scheme			Estimated cost	Monitoring Log		
		Indicators	Data source/method	How often		Date	Result	Follow-up
<p>IEE Section 3.5 Infrastructure: Agricultural plots and nurseries/6.1 rehabilitation or new facilities less than 1000M2</p> <ul style="list-style-type: none"> • During construction, IPs must ensure that contractors: • Desist from extracting fill, sand or gravel from waterways or ecologically sensitive areas • Identify and implement any feasible measures to increase the probability that forest products like timber are procured from legal, well-managed sources. • Minimize the use of heavy machines • Construction must be managed so that no standing water on the site persists more than 4 days; • Prevent dumping of hazardous materials. Burn waste materials that are not reusable/readily recyclable, do not contain heavy metals and are flammable • Concentrate noisiest types of work into as short a period as possible, and during least disruptive times of the day. Take measures to keep dust to a minimum • Bore hole to be dug for domestic use should be tested for arsenic, coliform, nitrates and nitrites. • No lead-based paint shall be used. When lead-free paint is used, it will be stored properly so as to avoid accidental spills or consumption by children; empty cans will be disposed of in an environmentally safe manner away from areas where contamination of water sources 	ECO, CEWEFIA	<p>Completed review and screening form to ensure that the construction activity is environmentally sound and follow the points outlined in the mitigation measures in the IEE/EMMP</p> <p>Field reports of physical inspection during and after construction by the Env. Comp. Officer</p>	<p>Environmental and monitoring forms for the construction of the CEWEFIA Fisheries Training Center</p> <p>Field Reports during and immediately following construction</p>	During construction activities	NA	Oct 2017 – April 2018	Continuous monitoring to ensure that the contractor followed all the mitigation measures that was associated with the rehabilitation activity	Activity completed successfully

Mitigation Measure	Responsible Party	Monitoring Scheme			Estimated cost	Monitoring Log		
		Indicators	Data source/method	How often		Date	Result	Follow-up
<p>might occur; and the empty cans will be broken or punctured so that they cannot be reused as drinking or food containers.</p> <ul style="list-style-type: none"> Waste handling equipment and infrastructure. USAID intervention must result in the facilities' possessing adequate provision for handling the wastes they may generate; including human wastes. In terms of safety and health risks; The contractor that will be responsible for the rehabilitation works will be required to have a Health & Safety Plan. The contractor will train the construction staff on the Health & Safety Plan. The contractor will be required to provide training on proper use of equipment. The contractor will provide personal safety equipment to all workers (i.e. hard hats, goggles, steel-toed boots, gloves, dust masks). The contractor will provide firefighting equipment/measures. The contractor will ensure proper storage of building materials. The contractor provides medical services (access to a first aid kit). <p>Prevent access to site at all times by unauthorized persons</p>								
Activity 4.5.6: Fisheries value chain improvements and livelihoods								

Mitigation Measure	Responsible Party	Monitoring Scheme			Estimated cost	Monitoring Log		
		Indicators	Data source/method	How often		Date	Result	Follow-up
<p>IEE Section 3.5 Infrastructure: Agricultural plots and nurseries/6.1 rehabilitation or new facilities less than 1000M2.</p> <p>1. Site Selection</p> <ul style="list-style-type: none"> Average slope of less than 5% and is not heavily forested, in an otherwise undisturbed local ecosystem, or in a protected area. The site is not within 30m of a permanent or seasonal stream or water body <p>2. Construction</p> <ul style="list-style-type: none"> IPs must desist from extracting fill, sand or gravel from waterways or ecologically sensitive areas IPs must identify and implement any feasible measures to increase the probability that forest products like timber are procured from legal, well-managed sources. Construction must be managed so that no standing water on the site more than 4 days; <p>3. Refurbishments of drying shed and the training on use and maintenance of the smoking ovens</p> <ul style="list-style-type: none"> IP shall create awareness among users on the environmental damage of unsustainable use of grown woodlots <p>4. Safety and health</p> <ul style="list-style-type: none"> The contractor will: <ul style="list-style-type: none"> Be required to have a Health and Safety Plan. Be required to train the construction staff on the Health and Safety Plan. Provide training on proper use of equipment. Provide personal safety equipment to all workers (i.e. hard hats, goggles, steel-toed boots, gloves, dust masks). 	Resonance	Field reports during and after construction by the Environmental Compliance Officer.	Regular field visits during construction period	During construction activities	NA	<p>Teshie &Nungua 14/08/2018</p> <p>Teshie, Nungua, Kpone & Tema 5/09/18</p> <p>La- 7/09/18</p> <p>Tema &Nungua 12/09/18</p>	<p>All 95 ovens were constructed within the 5% slope range and none within 30m of any water body.</p> <p>2 sites in Nungua were close to an open drain, this was rejected by the compliance officer and the beneficiaries were told to find alternative sites.</p> <p>The artisans are currently extracting clay from a less biologically sensitive area and in a</p>	<p>The stove building companies had a health and safety plan and practice the standards, such as supplying safety gears and first aid kits for artisans.</p> <p>2 ovens at Kpone has been completed</p>

Mitigation Measure	Responsible Party	Monitoring Scheme			Estimated cost	Monitoring Log		
		Indicators	Data source/method	How often		Date	Result	Follow-up
- Provide firefighting equipment/measures. Provide medical services (access to a first aid kit).						Tema - 17/08/2018	sustainable manner.	
						Kpong- 20/08/2018	Wood for making trays is sourced from registered wood shops. There was no standing water	
						Nungua- 22/08/2018		
						La- 14/09/2018	2 of the sites were near a big open drain. The client was asked to find an alternative site	
						Nungua 13&20/09/18	The contractor made sure that all materials used came	A new site was selected in Nungua that meet the site selection criteria

Mitigation Measure	Responsible Party	Monitoring Scheme			Estimated cost	Monitoring Log		
		Indicators	Data source/ method	How often		Date	Result	Follow-up
							from an approved site in the community All the mitigation measures were adhered to. All safety and health measures were taken care of.	and have been approved by the Environmental Compliance Officer.
<p>IEE Section 3.5 Infrastructure: Agricultural plots and nurseries/6.1 rehabilitation or new facilities less than 1000M2.</p> <p>5. Site Selection</p> <ul style="list-style-type: none"> Average slope of less than 5% and is not heavily forested, in an otherwise undisturbed local ecosystem, or in a protected area. The site is not within 30m of a permanent or seasonal stream or water body <p>6. Construction</p> <ul style="list-style-type: none"> IPs must desist from extracting fill, sand or gravel from waterways or ecologically sensitive areas 	CEWEFIA	Field reports during and after construction by the Environmental Compliance Officer.	Regular field visits during construction period	During construction activities	NA	24th August 2018 15 TH September 2018	IP made sure that the construction materials such as wood and sand for the out fitting of CEWEFIA processing shed were obtained from an approved site.	Follow up visit was done to verify the source of the materials used and also to ensure that safety gadgets were used.

Mitigation Measure	Responsible Party	Monitoring Scheme			Estimated cost	Monitoring Log		
		Indicators	Data source/ method	How often		Date	Result	Follow-up
<ul style="list-style-type: none"> IPs must identify and implement any feasible measures to increase the probability that forest products like timber are procured from legal, well-managed sources. Construction must be managed so that no standing water on the site more than 4 days; <p>7. Refurbishments of drying shed and the training on use and maintenance of the smoking ovens</p> <ul style="list-style-type: none"> IP shall create awareness among users on the environmental damage of unsustainable use of grown woodlots <p>8. Safety and health</p> <ul style="list-style-type: none"> The contractor will: <ul style="list-style-type: none"> - Be required to have a Health and Safety Plan. - Be required to train the construction staff on the Health and Safety Plan. - Provide training on proper use of equipment. - Provide personal safety equipment to all workers (i.e. hard hats, goggles, steel-toed boots, gloves, dust masks). - Provide firefighting equipment/measures. <p>Provide medical services (access to a first aid kit).</p>						<p>IP monitored to make sure that wood used was from legal well-managed source during the construction of the Ahotor Ovens</p> <p>Awareness was created on the need to change from the improved smoking stoves to protect the forest since the oven is an energy efficient stove</p> <p>The contractor had Health and Safety plan</p>		

Mitigation Measure	Responsible Party	Monitoring Scheme			Estimated cost	Monitoring Log		
		Indicators	Data source/ method	How often		Date	Result	Follow-up
						<p>The M&E Officer trained the Ahotor Oven contractor on Health and Safety Plan.</p> <p>Training was provided on proper use of equipment.</p> <p>The contractor provided personal safety equipment to all workers (i.e. helmets, goggles, steel-toed boots, gloves, dust masks). Provided firefighting equipment/ measures. Provided medical services (access to a first aid kit).</p>		

APPENDIX: PICTURES FROM MONITORING ACTIVITIES



Figure 1: DAA fisheries training center at Tsokomey in the Greater Accra Region



Figure 2: CEWEFIA Fisheries Training Center at Elmina in the Central Region



Figure 3: Mangrove nursery establishment and replanting site at Ankobra



Figure 4: Wood planked small scale boat for the Ankobra CBFM Committee