

REPORT ON SCOPING TRIP TO LIBERIA IN REGARDS TO THE AQUA CULTURE PROJECT

My major goals during the scoping trip for the Aqua Culture Project at CARI were:

1. To collect data for the environmental assessment. For example, photos of the water source, the new pond site, size of planned ponds etc.
2. To explore the financial processes at CARI to find out how they work, as we will likely be paying invoices.
3. To take specs on what kind of equipment CARI want for their Aqua Culture lab and try to see if we can get them in Ghana.
4. Possibly do professional Development workshop for CARI staff and University of Cuttinton Students.

Meeting with USAID Mission – Economic Development Division

Our first meeting was at the Liberia USAID Mission with the Economic Development Division.

Present at the meeting were Dr. Anthony Chan – the Director of the division and four other staff including Dr. Maurice Otugu, Head of the Economic growth, Agriculture and Food Security. The discussion at the meeting focused on our purpose for the trip and the issue of corruption in Liberia. They did told us that one of the biggest challenge they are facing in getting things done in Liberia is the high level of corruption. BHEARD was advised to strictly monitor the Aqua Culture Project to prevent corrupt practices.

Dr. Chan also touched base with us on the issue of Dans Johnson and concluded that it's BHEARD's duty to handle the issue of Dans not USAID, he just needed some clarifications and the where about of Dans Johnson.

First Meeting at CARI

Presence at the meeting were:

- The Acting Deputy Director – Dr. Quaqua S. Mulbah
- Administrator – Paulette Finley
- HR – Vanessa T Kum
- IT leader – Feeman K. Blakwi
- Director of Research – Dr. Nyko Jomah
- Deputy director for Research – Dr. Kokoe
- Head of Finance Office – Jude Nagbe
- The Aqua culture team and the livestock team.

Focus Questions for the meeting:

- Is there a strategic/research plan for the aqua culture project?
- What facilities are already available?
- What are the other donors doing?
- Is there a work plan?

There are no strategic plans for the Aqua Culture project- only the 15 year strategic plan for CARI.

No working labs for the fish and the feed. The feed ingredients are weighed in their office and dried on a Tennis court.

Aims and Challenges:

Aims: CARI aims at taking Aqua Culture to a commercial level – fingerlings production and brood stock production

Five Major areas were identified by CARI

1. **Research Ponds** :- CARI has identified the need for 6 new research ponds of 200m². The estimated cost for the ponds will be \$15,000-\$20,000. They will fence around the pond to prevent encroaching. CARI is provide BHEARD with a site plan of the pond area, a map of the locations of the 6 ponds, pipes, reservoirs, channels as well as the topography of the location. They already have a civil engineer (Sando Johnson) who is tasked to do the job.
2. **Feed Production**:- CARI want to be producing their own fish feed using local Agricultural waste. BHEARD scholar Mandela Hinnah has developed a feed formulation which they are working on for this project. CARI plan to grow some of their own feed ingredients. E.g. corn, soy bean, cow peas. The challenges they are facing for the feed production is a lab space and grinding and pelleting machine. We asked them to arrange with LADA to place one of the new grinding and pelleting machines at CARI. We went to LADA office and discussed this request with them and they agreed.
3. **Fingerlings and Brood Stock Production**:- CARI hope to be producing fingerlings and brood stock for local farmers, hence the need for good working research ponds. To sustain the fingerling and brood stock production, they will be selling fingerlings and brood stock to the local farmers at an affordable price. Not to make profit, but something to keep it running.
4. **Training-Internal and External** :- Part of CARI's plans is to train it's staff and the local farmers. The areas identified for the training include:
 - Biosafety and Environmental Management
 - Fish Pond Management Good Practices
 - Proximate Analysis (send one expert to Ghana)
 - Data collection and report writing
 - Lab Safety and Good Practices
 - Professional Ethics

- Fish for Nutrition
- Proposal Writing and Sourcing Research Funds
- And the last but not the least the Training of Trainers which will be done in collaboration with LADA.

5. Laboratory : - CARI also plans to have a good dual purpose working lab for the Aqua culture and other departments too. We asked them to first get two buildings ready that will be use for the labs. One to be use as feed lab and the other one for the fish lab. CARI Director General has taken over that job.

Challenges:- Some of the challenges CARI identified includes the following:

- Infrastructure –physical labs,
- IT-no workable website – They have already developed a good website but yet to pay for it and start using it. According to Karen, there was a discussion already that BHEARD will pay for the website up to \$2,000.
- Information transfer to the local farmers
- No functional Research ponds
- Fish feed – they are testing the new feed formulation by Mandela one of the BHEARD scholars. He is using local Agricultural waste for the feed formulation which was a laudable effort and they are getting good results of about 4g of fish within 5-6 months.

Key Constraints

- Research Labs – fish lab and feed prep lab
- Research Ponds
- Pelleting Machine for the feed preparation – We had talked with LADA who is bringing 4 pelleting machines to Liberia to fix one at CARI.

The New Pond site

The new pond site was located close to a natural lake that according to CARI does not get dried even in the dry season. There is a high land road between the proposed site for the new pond and the lake. By the topography of the site for the new ponds, it doesn't look easy to let water into the pond by gravity as we understood by the concept note. We raised this issue to them and they said they will use water pipes to bring water from the lake to the ponds. We took the water and soil samples to be tested at MSU.

Research Plan

Value Proposition:

- Training of fish farmers
- Provision of extension service to the local farmers
- Breeding fingerlings and brook stock and sell to farmers at a reasonable and affordable price
- Developing feed from local Agriculture waste

Overlap Areas:

- Feed Analysis
- Water Analysis
- Pathogen Detection
- Pond and Soil analysis

Key Resources:

1. Equipment

- Feed processing machine,
- Nets,
- Pond cleaning equipment

2. Lab Equipment

- Spring balance
- Pond quality maintenance equipment
- Reagents and consumables

Key Partners

- Fish Farmers (Bong, Lofa, Nimba, Monserado)
- Ministry of Agric
- Cuttington University
- NAFA

Cost Structure

1. Ponds = \$20,000
2. Fish Production- nets, fingerlings, shipping tanks = \$6,750
3. Seeds and inputs – NPK, urea, seeds \$470

4. Labs – Analytical balance, gross balance, standard chemistry apparatuses, air filter, water purification apparatus, pH meter, colorimer, Microscope, dissecting scope, Freezer, refrigerator, Safety equipment, solvent cabinet, reagents and consumables = \$20,100
5. Starter fish feed \$ 650

TOTAL = \$47,970

Other costs

Training of Trainers (TOT), 35 max for a week - \$5,000

General Training – 100 Max - one day = \$5,000

Proximate Analysis training in Ghana – 1 person for 3 months = \$2,000

Work Plan

Work plan to begin in May

- Major activities in the work plan include
 1. Purchasing and delivery of lab equipment
 2. Setting up of the fish lab and the Feed processing lab
 3. Lab equipment usage and safety training
 4. Feed production
 5. Training of fish farmers

6. Purchasing and stocking of ponds
7. Proximate analysis
8. Production and sales

Professional Development Workshop

- There was a one day professional development workshop for the Cuttington University students and some of the CARI staff
- Major focus areas were:
 1. Corruption
 2. Effective Communication
 3. Mind Sets
 4. Study Skills
 5. Planning Your career

Budget for the workshop

- TnT \$ 100
- Snacks and water \$200
- Generator fuel \$ 50

TOTAL = \$350

Other Meetings of Importance

Meeting with Marcus – The newly appointed Director General of CARI

Due to other presidential meetings and appointments, the CARI director was not present at our meeting at CARI so we met with him discuss the proceeds of our meeting with CARI staff during his absence and asked what his priorities will be after taking office. He told us that his priorities will be **enhancing man power** and **renovating research facilities**. This means building the research labs and training the staff will be his top priorities.

Meeting with the Director General of National Fisheries and Aqua Culture Authority (NaFAA) Dr. Emma Metieh Glassio

The major duties of this office are

- Manage the Fisheries resources
- Get grants and funding for research.

We asked them if they could collaborate with the Aqua Culture Dept at CARI and she agreed, emphasizing that CARI and any institution that deals in aqua culture and fishery are all under NaFAA. Some of the **major challenges** she raised were:

- Lack of research data
- Lack of funds to conduct scientific research
- Stock assessment
- Man power – research scientists

The BHEARD Scholars at the NaFAA:- We also seize the opportunity to meet with the BHEARD scholars working at NaFAA.

They are:

- Austin - Studied in Ghana– Director of Research
- Alex – Studied in Kenya- Head of Policy and Planning
- Nathaniel- Studied in Kenya- Senior Research Officer

Meeting with Chief of Party of LADA – Dr. William Van Campen

We met with the COP of LADA to discuss Aqua culture project that BHEARD is undertaking at CARI. The purpose was to inform LADA of what is going on at CARI so there is no duplication of same project. We also seize the opportunity to ask LADA to collaborate with CARI for a successful Aqua culture project. We asked LADA to place one of their newly ordered grinding and pelleting machine at CARI which they agreed. It was emphasized that CARI must train people on how to use the pelleting machine before they begin to use it.

Follow up meeting with Dr. Chan and his team - USAID Liberia Mission

- There was a follow up meeting with Dr. Chan just to give a feedback on our trip to CARI.