

**MY EXPERIENCE OF STUDYING AT THE ASIAN INSTITUTE OF TECHNOLOGY (AIT), BANGKOK,
THAILAND FROM JANUARY 2009.**

By

**Anthony Dadu from Tanzania
(At present M Sc. student at AIT, Thailand)**

<http://www.serd.ait.ac.th/aarm/>



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Learning practical, hands on skills to manage broodstock and produce fry and fingerlings. Women make the best hatchery technicians and managers?

Keywords: Aquaculture, training, fish farming, research, Thailand, Tanzania

1. Background

I am Anthony Dadu from Tanzania serving for my government as an extension officer (Senior Fisheries Officer). I have the opportunity to study at AIT, along with other five Tanzanian colleagues, under a government scholarship scheme. It is my pleasure to share my experience of post-graduate study in Asia. I was enrolled in January 2009 for **an M. Sc. in Aquaculture program** at the Asian Institute of Technology (AIT) which is situated 42 km north of Bangkok. The institute was established in 1959 as an international postgraduate institution with a mission to develop highly qualified and committed professionals to accelerate sustainable development of the region and beyond. It has three schools i.e. School of Environment, Resources and Development (SERD), School of Engineering and Technology (SET) and School of Management (SOM). Aquaculture and Aquatic Resources Management (AARM) is a field of study within the SERD and is responsible for improving regional institutional capacity in aquaculture, aquatic resources management and related fields through innovative approaches which integrate education, research and outreach.

I had the opportunity of taking courses such as Aquaculture and Aquatic Resource Systems, Aquatic Seed Production, Coastal and Inland Aquaculture, Aquaculture Nutrition and Feed Technology, Aquatic Animal Health Management, Analytical Techniques in Aquaculture, Aquaculture Engineering and Water Quality Management, Aquaculture Planning and Management, and a few others.

2. Experience of Multi-cultural Environment



Fig. 1 Trip to Surat Thani (on 19th Feb 2009, left) and Chanthaburi (29th Oct 2009 (right)

Being a student at AIT I experienced multicultural environment where students from different countries meet and study together. We are five students from Tanzania-East Africa learning together with seven students from Thailand and another seven from Vietnam (Fig. 1). We also have four students from Laos, three from Cambodia, two from Sri Lanka, and one from the US as well. The number of students varies each year depending upon the availability of scholarships. Apart from learning in the classroom, I have a good opportunity **of learning from classmates who have very good experience of fish farming in their countries**, especially Asia. This has contributed a lot to broaden my knowledge as well as skills while working with them in groups in the field of Aquaculture and Aquatic Resources Management.

3. Teaching methods

I felt that the teaching method at AIT is very unique, where by all courses conducted in the classroom are very interactive between the lecturers and students. Every student has to participate fully in the classroom by **sharing**

ideas, experience and knowledge. This makes learning process much easier and understandable to all students. We get not only the theoretical knowledge but also the skills. Each theory class is **followed by lab or field practical work either in hatchery, laboratory, fish farms or field trips** to various parts of Thailand.

4. Practice in the hatchery

AIT has its own model tilapia hatchery **run as a commercial unit!!** where tilapia eggs are incubated under artificial conditions on a regular basis throughout the year to supply to the farmers. The hatchery also has various other components like fish holding tanks, breeding tanks, experimental tanks, and recirculating systems where occasionally other fish species are also bred. During practical sessions on fish breeding we seine netted the fish, learned how to select the good brood fish for spawning, to identify males and females and so on. In the hatchery I and my classmates had a chance **to learn and practice by our hands** to assess reproductive conditions of various fish species such as tilapia, silver carp, cat fish, common carp, silver barb, Rohu, Gourami and others. We catheterized all female fish and assessed stages of egg development, whereby male fish we pressed on their belly and assess sperm quality, worked out the fecundity and gonadosomatic index for each fish species. This exercise helped me to understand very clearly the importance of fecundity in different fish species. This has been **my first hands-on experience which will help me to breed different fish species** if I get the responsibility in the future.

A special breeding program was included in the aquatic seed production course in which we were given a task **of harvesting tilapia eggs every week as if we were the staff of the hatchery.** We harvested tilapia eggs weekly for whole semester and incubated the eggs by ourselves (Fig 2). By doing work in the pond and hatchery **we acquire the skills required for the running of a commercial tilapia hatchery.**



Fig. 2 Egg collection from the mouth of Nile tilapia brooders (left) and Egg incubation at the AIT hatchery (right)

5. Practice in Fish Nutrition

Fish nutrition is the key knowledge in aquaculture development. One of the major constraints of enhancing fish production is feed cost, however reducing feed cost depends on efficient utilization of nutrients, therefore knowledge of nutrients utilization by aquatic organisms is important for the sustainability of aquaculture development. We learned how to select locally available ingredients (raw materials), their preservation and preparation methods, feed formulation, pelletizing and, analyzing nutrient contents. More importantly, **we conducted a feeding trial as a part of a course** comparing the feeds we prepared in groups. We took the full responsibility of conducting the trial; fed our fish everyday in rotation, harvested fish, and finally analyzed the data and presented in the class to share amongst us Sincerely, I appreciate and am grateful to study my Master of Science in Aquaculture at AIT. The abundant knowledge and skills in Fish Nutrition has given me (i.e.

Tanzanian students) a great confidence that it will be adequate to provide a good service to fish farmers in our own countries. With our Tanzanian friends we hope to use knowledge and skills that we learned will be helpful for the promotion of aquaculture in our country.



Fig. 3 Manual Mixing of Feed ingredients ready to make pellets as part of nutrition course

6. Field trip

Several field trips were organized during semesters for us as parts of courses were very eye-opening and learning from the real field we had opportunities to observe actual farm situation and practices, and also learn present problems and future challenges of Aquaculture development in Thailand. On 15th October, 2009 we visited Nam Sai Farm <http://www.tilapiathai.com/> also see very nice video <http://video.google.com/videoplay?docid=5229367506401476079#> and Manit Farm to visit Nile tilapia hatcheries/farms (Fig. 4, left), similarly on 20th October we visited another private farm to see hybrid catfish seed production (Fig 4, right). On 29th October, 2009 we visited Chantha Buri to see a Private hatchery for grouper seed production and His Majesty the King freshwater prawns Project, Similarly on the same day we visited another farm for freshwater macrobranchium production and many more. It was a very good experience to see different culture systems after learning in the classroom. Many challenges facing aquaculture farming were observed and we understood much better during field trips where we had an opportunity to compare the theory learnt in the class and the actual situation on the farms (both local and commercial farmers). We also had opportunities of asking questions to fish farmers at the pond side, this session was very important for us as we were able to get first hand information and understand the problems faced by the farmers.



Fig. 4 Nile tilapia at Manit Farm on 15th October 2009- farmer explaining production at his farm and Fish farmer with students and Lecturer (on 20th October 2009) (right)

7. Research Experience

During my thesis research, on-campus I should say I am taking a great advantage of the extensive facilities such as tanks, ponds and hatchery and laboratories. Lecturers here always encourage students to select research topics relevant to our own careers and countries. This has given us a good direction towards identifying very relevant and real world problems and helping us find practical solutions that can be implemented at local level. The experiment trial for my thesis was another good experience in raising Nile tilapia in fertilized fish ponds for three whole months (Fig 5). I felt I was the manager of my research project; I did everything myself. Sometimes we helped each other amongst our colleagues. I had my pond. I stocked my fish and fed them myself. I had a DO meter and other equipment. I measured the dissolved oxygen (DO), temperature, pH and other parameters. I collected water/sediment samples and analyzed myself anytime I like. The Lab is open 24 hours per day. Students here have complete freedom anytime they can go and work in the lab and field. No security problem, no worry about anything. People from over 40 countries live and work in perfect harmony.



Fig. 5 Installation of Cages for experiment trial at AIT facility (left) and experimental fish harvest at the end of the trial and other colleagues helping me.

8. Recommendation

We need this type of education as a strong foundation for the development of aquaculture in Africa where learning is mostly by doing. It is the best method of knowledge acquisition and skill development. More cooperation between Africa and Asia could help accelerate the pace of aquaculture development in Africa.

Many thanks to Anthony for the article and also Dr R. Bhujel of AIT

Videos from 3 SARNISSA African Partners Study tour to Thailand , Bangladesh and Nepal (including time at AIT) can be viewed at: <http://www.sarnissa.org/tiki-index.php?page=Video%20links>

For those further interested in courses and training at AIT please contact: *Coordinator:*

[Dr. Wenresti G. Gallardo](mailto:gallardo@ait.ac.th)

Tel: (662) 524-5452

Fax: (662) 524-6200

Email: gallardo@ait.ac.th

