

ASIAN INSTITUTE OF TECHNOLOGY AQUA-CENTRE

SSNS Training Course 3: **Aquaponics**

Cultivating opportunities for income generation, food security and climate-change resilience through aquaponics

Background

Aquaponics is an integrated multi-trophic system that combination of aquaculture and hydroponics. Aquaponics is growing around the world and the technology is



becoming increasingly popular. Its role for food security would be particularly relevant because the global population now exceeds 7.2 billion and is growing rapidly. Aquaponics is an exciting new direction in growing pure, clean food in a more sustainable way. The system results in a symbiosis between fish,



microorganisms and plants, and encourages sustainable use of water and nutrients, including their recycling, while at the same time the nutrients for the plants are supplied from a sustainable, cost-effective and non-chemical source.

Currently, aquaponics is a small but emerging business sector that attracts more and more capital. Aquaponic is suitable for use in urban as well as rural areas with availability of limited land. This training course has been designed to provide technical and business knowledge about aquaponic and it is our conviction that this technology has the potential to play a significant role in food production in the future.

Learning outcome

- Enhanced knowledge about aquaponic
- Opportunity to manipulate and engineer symbiotic relationships
- Develop small scale Aquaponic system
- Ability to develop a business plan

Training period: 1 week

Training fee: 885 Euro /participant (Exclusive of living and travel costs)

Lectures – 6 hours (3+3) – Classroom

1. Current trends and organic food supply chain
2. learned about the environmental, operational, and socio-economic effects of aquaponics
3. Different aquaponic system
4. Planning and management of aquaponic system; water quality, plant quality, fish quality and quality slandered.

Practical – 15 hours (3+3+3+3+3) – Lab and field

- 1 Aquaponic greenhouse tour in AARM, AIT– NFT, Media based system
- 2 Identify each component (AIT Aquaponics systems)
- 3 Preparation of different media for micro-organism
- 4 Preparation of fish stock
 - a. Preparation optimum condition water for fish
 - b. Adjust water flow and water quality measurements
- 5 Plant Maintenance
 - a. Identify the suitable plant for each system,
 - b. Identify the nutrient deficiency through plant (observation)
 - c. Pest identification under microscope
 - d. Preparation of organic pest solutions
 - e. Preparation of vermiculture
- 6 **Field visit-** “Aquaponic Thailand” farm, Samutprakarn – Vertical aquaponic

Final report including design the aquaponic system/business plan: by each participant – max. 5 pages

Presentation of results by the group of students (Seminar Room)

- 1 Techniques and lessons learned
- 2 Wrap-up by Instructor (1 hour)

Feedback and evaluation by students (MSc and PhD) / participants

Resource persons: Dr Ram C. Bhujel and Anusha