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INSTITUTE OF TROPICAL AQUACULTURE (AKUATROP)



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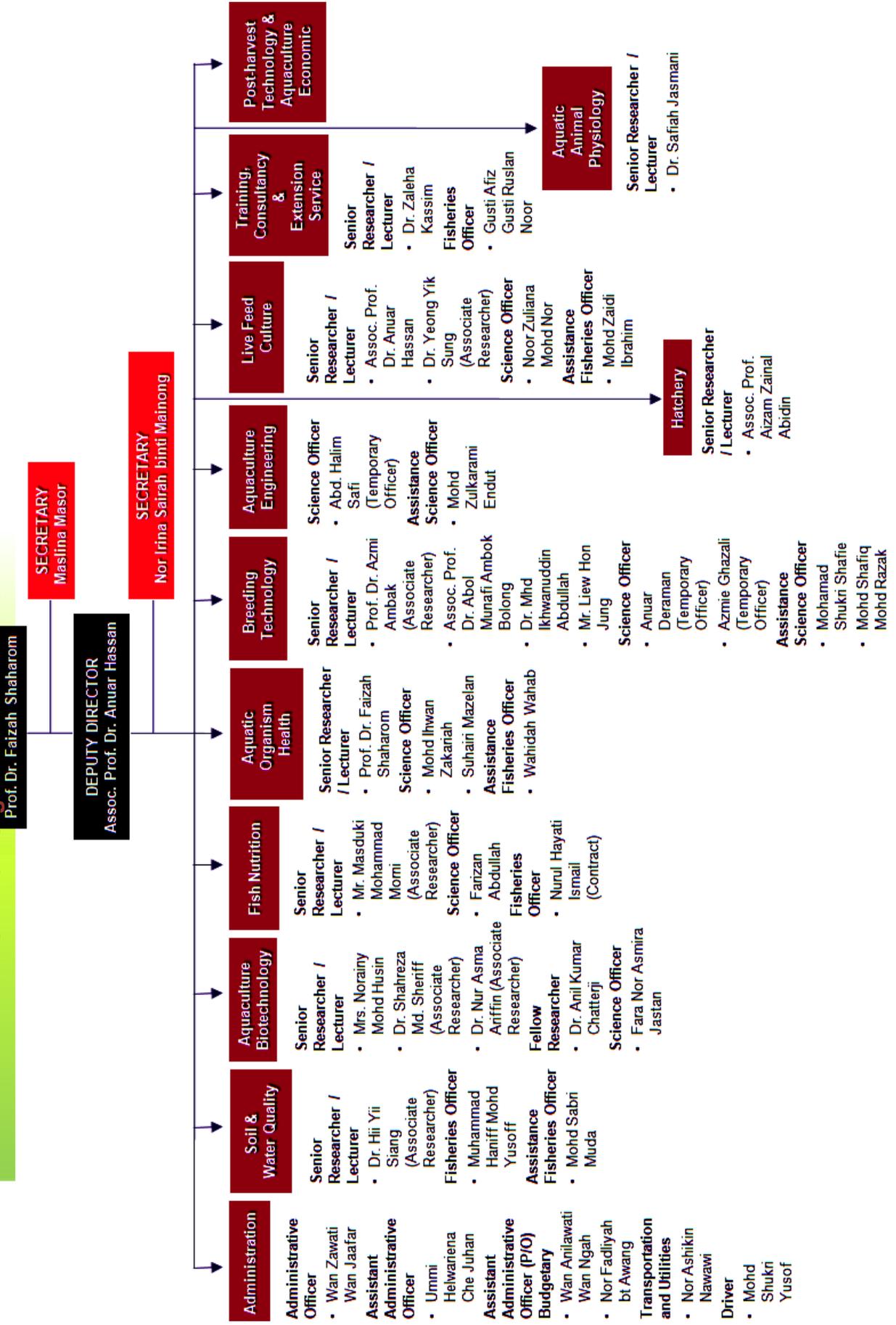
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AKUATROP Organization Structure



Introduction

AKUATROP has grown significantly since its establishment in 2004. In 2010, our staff member is 33 and enrollment of postgraduate students is 78 students. While, our research fund has increased from just RM 520,775 in 2006 to RM 7,436,020.00 in 2010. In this respect, AKUATROP have successfully achieved 100% points for its Key Performance Index (KPI) achievement. Our vision is to place AKUATROP on the centre stage of research excellence in aquaculture in Malaysia, as well as to enhance its existence and reputation internationally. Due to that AKUATROP focused its research more towards the development of optimization of breeding techniques and health management protocol for important cultured fish species.

It is now striving to be recognized as one of the 21 centers of excellence in the world. To accomplish the above objectives, AKUATROP is promoting international collaborative research with research institutions in Asia, Europe and Canada and inviting international scientists and researchers every year to come to AKUATROP to share their expertise via technology and knowledge transfer via seminars and workshops.

New AKUATROP Laboratory and Office Complex

AKUATROP will be blessed with a combined administrative and laboratory complex within the UMT campus and will be completed by June 2011. The new 3 storey building has 45 rooms hosting fully equipped research laboratories, administrative, auditorium, seminar and rooms for lecture section.



New administrative and laboratory building for AKUATROP and INOS.

Facilities

The institute operates a research core facility which houses 23 laboratories under 7 sections:

1. **Feed and Nutrition:** The nutritional laboratory complex hosts a few laboratories which could run analytical chemistry including proximate analysis of different samples. The equipments include Kjeldahl apparatus, digester, fiber extractor, micro feed balances, etc.
2. **Aquaculture biotechnology:** The complex covers the basic molecular biology instruments for various researches such as ordinary and real time PCR, gel documentation system, etc. The animal cell culture laboratory is also associated with the institute.
3. **Planktonology:** The various applications in the field of planktonology covering the cell count, viability tests, mass culturing, etc. are handled here. Stock cultures of commercially important planktons are maintained in the institute year round. Laminar flow, autoclave, incubating shakers, glassware for mass cultures (20 l), etc. in aesthetic conditions is available. MOTIC camera installed compound microscopes are available for live viewing of the movements and damage studies of cells.

4. **Aquatic animal physiology:** This laboratory has been established recently to fulfill the need of physiological studies in aquatic animals. The lab is specialized for studying physiological systems such as osmoregulation, reproduction and growth in crustaceans, control in ovarian maturation, effects of nutrition on growth and ovarian maturation, osmoregulation in freshwater and marine aquatic animals.
5. **Aquaculture engineering:** Aquaculture engineering section is involved actively in modeling and development of nano filters, incubators for the developing embryos of fish, etc.
6. **Fish disease:** This section specializes in research and diagnosis of diseases caused by bacteria, parasites in fishes, mollusks and other emerging diseases. The section also comprises:

Histology laboratory: well equipped for histology, staining, microscopes such as table top scanning electron microscope for ultra structures, etc.

Bacteriology laboratory: laminar flow and other microbiological instruments for aesthetic culture of microorganisms, maintenance of stock of potential pathogens, probiotic microbes, etc. are involved.

Virology laboratory: a laboratory for virology will be set up soon for several research activities.

Parasitology laboratory: microscopes for the viewing, stains for their identification and characterization, etc. are available.

7. **Hatchery:** A marine and freshwater hatchery system enough to supply the aquaculture experiments are well fitted with the building complex.



AKUATROP future research laboratories under finishing process and furniture installments.



View of new AKUATROP general office.



Lecturer or Fellow Researcher office room.



Room for postgraduate students.

AKUATROP already has some *state-of-the-art* equipments such as TM-100 Table Top (SEM), Eclipse 80i Advanced Research Microscope, Double Beam UV VIS Spectrophotometer, High Performance Liquid Chromatography (HPLC) and Measuring Microscope which will be placed at the new building to support a very high impact research in order to boost its image as a Center of Excellence in Aquaculture.



TM-1000 Tabletop Microscope (SEM)



Measuring Microscope



Eclipse 80i Advanced Research Microscope



Carl Zeiss Compound Microscope fitted with Digital Camera.



Double Beam UV VIS Spectrophotometer



High Performance Liquid Chromatography (HPLC)

A temporary marine hatchery is being built that will eventually make way for a brand new marine hatchery at the old marine hatchery site by the end of 2011. In the meantime all research activities related to culture aspects will be conducted at the temporary hatchery.



Temporary Marine Hatchery for AKUATROP.