

Resolutions of the Stakeholders' Workshop on Tilapia Aquaculture in Tanzania and the Way Forward, Held at Mazsons Hotel, Zanzibar, 5th -7th October, 2016 (The Zanzibar Aquaculture Resolution)

RECOGNISING, that Tanzania's inland and marine waters contain diverse and valuable resources, including fisheries; that a significant part of the Tanzanian society is located close to the major water bodies; that the social, economic and cultural development of these people are extremely dependent on the continued productivity of activities, including fisheries; that sustainable fisheries including capture fisheries and aquaculture present an opportunity to capitalize on, producing food surplus and thus export a myriad of products to the region and the international market; that the national industrialisation agenda has placed the fisheries sector development high in the agenda so as to meet expectations of our cherished Tanzania Development Vision 2025:

WHEREAS, Tanzania can produce over 700,000 metric tons of fish annually, but irresponsible fishing and environmental degradation have resulted in unimpressive annual catches of about 400,000 MT mainly from Lake Victoria, causing a national deficit of about 400,000 MT of fish and poor per capita fish consumption (8 kg/person/year) compared to the global average (17.2 kg/person/year);

WHEREAS, aquaculture that is currently growing at an average annual rate of 8.8% worldwide and 11.7% in Africa, constitute the fastest growing animal protein source and that has an enormous potential in eliminating the fish deficit, meeting future demands for alternative incomes, eliminating hunger and reducing poverty if good farming practices that make use of the ecosystem services and goods in a sustainable way are used;

WHEREAS, both the Government of the United Republic of Tanzania and the Revolutionary Government of Zanzibar have made several initiatives to facilitate aquaculture development under respective Ministries responsible for aquaculture including enacting relevant Acts, Policies, Laws, Regulations and Strategies;

WHEREAS, the pace of aquaculture development in Tanzania is still characterised by low levels of production and the most recent Fisheries Policy of 2015 has been formulated with an overarching objective of promoting a rapid and sustainable, private sector led and market - driven aquaculture development in Tanzania;

WHEREAS, the Fisheries Policy of 2015 emphasises the need to, among others, address aquaculture development bottlenecks including availability of quality seed and feeds, insufficient pool of qualified aquaculture professionals including entrepreneurs so as to effectively exploit her aquaculture potential;

WHEREAS, our society look upon the close collaboration and cooperation of the government, the private sector, including NGOs and the intelligentsia to overcome the aquaculture development bottlenecks for proper aquaculture development for food security, poverty alleviation and economic development;

WHEREAS, in the regions of the world where aquaculture has significantly grown, the Government provides budgetary support and enabling environment including demand-driven research, aquaculture infrastructures, subsidized aquaculture inputs; the industry is strongly mainstreamed into national development plans; commercial/market driven; intimately part of food security objective; operating under strong water and land rights; operates in clearly demarcated zones; enjoys sufficient pool of qualified aquaculture professionals as investors/managers;

WHEREAS, the national education, research and development institutions dealing with aquaculture (hereafter known as ERD institutions) including the University of Dar es Salaam (UDSM; Department of Aquatic Sciences and Fisheries Technology (DASFT) and Institute of Marine Sciences, IMS), Sokoine University of Agriculture (SUA; Department of Animal, Aquaculture & Range Sciences, DAARS), Tanzania Fisheries Research Institute (TAFIRI) and Fisheries Education and Training Agency (FETA) are committed to facilitating the implementation of the Fisheries Policy (2015) vision, mission and objectives with the view to realising the national industrialisation agenda so as to meet expectations of our cherished Tanzania Development Vision 2025;

WHEREAS, to facilitate communication and promote a close collaboration and cooperation between aquaculture intelligentsia-governance – private sector, the heads of DASF, IMS, DAARS and TAFIRI participating in the *“Stakeholders’ Workshop on Tilapia Aquaculture in Tanzania and the Way Forward”* have unanimously agreed to establish institutional (including aquaculture farmer clusters) and member based network namely the Tanzania Aquaculture Network (hereafter known as TAQ-Network), whose mandate shall be to facilitate and promote commercial aquaculture development through:

- a) Promoting, encouraging and supporting the study of aquaculture and related sciences, aquaculture technological development and their dissemination and to create public awareness and understanding of aquaculture for its development in Tanzania;
- d) Holding periodic meetings (conferences, workshops, seminars) to facilitate exchange of information and experiences on all subjects and techniques related to aquaculture;
- e) Encouraging the teaching and training of aquaculture in accredited institutions; and
- f) Encouraging private industry and government agencies to support aquaculture education, research and development.

WHEREAS, the WorldFish mission and vision are to reduce poverty and hunger by improving fisheries and aquaculture and to be the research partner of choice for delivering fisheries and aquaculture solutions in developing countries including Tanzania;

WHEREAS, the WorldFish has, among others, successfully facilitated the global effort to improve productivity of the farmed fish including tilapia that is currently among the global major source of human food; the developed knowledge and technology to improve farmed tilapia is currently benefiting some African countries including Egypt, Ghana, Zambia and Malawi;

WHEREAS, Tanzania is a global hotspot for wild genetic biodiversity of tilapia therefore priority need to be given to the most economically viable species with biodiversity concerns taken into consideration;

WHEREAS, development partners including the Swedish International Development Agency (Sida) and international research partners including the Swedish University of Agricultural Sciences (SLU), Bangor University (BU), and Earlham Institute (EI)-Norwich Research Park have expressed willingness to contribute meaningfully to the course of aquaculture development in Tanzania including establishing a national breeding program for tilapia to support local food security;

THEREFORE, we the Heads of DASF, IMS, DAARS and TAFIRI participating in the *“Stakeholders’ Workshop on Tilapia Aquaculture in Tanzania and the Way Forward”* hereby resolve and recommend that the Government of Tanzania give emphasis to sustainable aquaculture development by developing semi-autonomous National Aquaculture Development Centre (hereafter be known as NADC) at Kingolwira, in the premise of the Kingolwira Aquaculture Centre, with marine sub-centre at Pangani, in the premise of UDSM-IMS Mariculture Centre; that NADC development and activities be overseen by the International Scientific Board (hereafter known as the Board) with NADC day to day activities managed by a Secretariat (hereafter known as the Secretariat) and a Coordinator; that NADC should closely work with universities, research and training institutes, private sector and government agencies in Tanzania; that NADC also maintain a strong linkages with foreign research and academic institutions and international agencies; that facilities of the NADC shall be open to members of the ERD institutions and TAQ-Network as per agreed terms and conditions; that to facilitate the development of the NADC, the Heads unanimously agreed that:

- Heads of the NADC founding institutions, namely the Government of Tanzania (Departments of Aquaculture URT and Revolutionary Government of Zanzibar), DASF, IMS, DAARS, TAFIRI, FETA, WorldFish, SLU, BU and EI or their representatives and the Director of Training, Research and Extension (Ministry of

Agriculture Livestock and Fisheries) and Director General of COSTECH or their representatives shall constitute part of the Board; and

- The IMS-UDSM be the interim Secretariat with Dr. Matern S.P. Mtolera, the Coordinator.
- The Secretariat will implement research, training, information dissemination, and technology verification and commercialization activities to promote sustainable aquaculture in Tanzania and promote the organizational and financial stability of NADC as approved by the Board

Recommends further that:

- The mandate of the NADC is to spearhead the development of the entire aquaculture value chain in collaboration with the private sector;
- The NADC roles and objectives shall be to generate science-based aquaculture technologies and information appropriate for overcoming challenges across the aquaculture value chain; verify, demonstrate, and transfer viable technologies and best aquaculture management practices; develop and strengthen capacities of the aquaculture sector; promote interaction between scientific community including students and farmers at field level; accommodate the TAQ-Network activities with the view to promote collaborations with national, regional and international institutions; accommodate the Tanzania fish germplasm bank; provide a national quarantine facility for infected and or imported fish and fish health facilities;

Deemed that NADC will bring a number of benefits to the development of aquaculture in Tanzania including:

- a) Coordination of research initiatives and dissemination of their outputs for a more wider and effective dissemination of innovations in aquaculture;
- b) Centre for periodic analysis for identifying aquaculture needs; gaps and approaches for improving growth rate, diseases resistance, feeding efficiency and market acceptability of cultured species;
- c) Promote focused research and multidisciplinary collaboration on jointly agreed goals, objectives and developed measures/ metrics to quantify progress towards desired outcomes and make follow ups to evaluate progress;
- d) Become an aquaculture seed reference point;
- e) National focal points for soliciting national, regional and international support.
- f) Facilitate acquisition of state of the art analytical equipment and facilities. With such equipment and facilities pooled, NADC and its TAQ-Network will attract some of the most talented and highly qualified personnel in Tanzania and elsewhere for addressing aquaculture/mariculture bottlenecks.
- g) Facilitate establishment of a platform for information sharing between the governance, aquaculture researchers and entrepreneurs;

- h) Facilitate development of aquaculture farmer based associations/ clusters/ networks of small scale fish farmers to improve accessibility to technologies for genetic improvement, feed formulation, farm health management etc; facilitate accessibility to services, attaining bargaining power.
- i) Organize periodic forums involving policy makers/resource managers, natural and social science researchers, entrepreneurs, and development partners to foster national and regional cooperation, ensure informed policy making machinery, and promote development of world class entrepreneurs.

Also recommended the following regarding the role of the Government, private sector, academia, international organisations such as WorldFish, regional and international research partners, including SLU, BU and EI, towards achieving the roles of NADC:

Academia in Tanzania, including DASF, IMS, DAARS, TAFIRI, FETA:

- Align individual institutional research agenda to NADC strategic plan, goals and objectives with research adopting a multidisciplinary research approach to holistically address aquaculture development bottlenecks;
- Ensure aquaculture training programmes to also include social science disciplines e.g. business administration;
- Aquaculture training programmes also re-tool researchers/extension agents to rise up to the needs of aqua-entrepreneurs;

Aquaculture private sector in Tanzania:

- Participate in multidisciplinary NADC research and training activities;
- Contribute to funding the NADC activities;

Regional and international collaboration:

- Strengthen North-South and South-South collaboration between developed and developing aquaculture countries through education, research, training and quality-data sharing programmes;

Government:

- Creation of enabling environment including:
 - Removal of import duty/subsidy on key aquaculture inputs;
 - Encourage the allocation of adequate budget for aquaculture development;
 - Facilitate zonation and provision of necessary aquaculture infrastructure;

- Strengthen enforcement mechanisms and capacity in order to address destructive aquaculture practices prohibited by the laws and regulations;
- harmonize related aquaculture legislations in conformity with existing international and regional conventions and agreements;
- Promote financial support to fish farmers through provision of easy access to financial loans;

WorldFish:

- Contribute towards enabling Tanzania to successfully transform its aquaculture through facilitating the development, adoption and delivery of relevant fisheries and aquaculture solutions including improvement of farmed tilapia starting with the most farmed species namely Nile tilapia.

International research and training partners including SLU, Bangor University, Earlham Institute:

- Contribute towards enabling Tanzania to successfully transform its aquaculture through research, training and public engagement.

Tanzania Commission for Science and Technology (COSTECH)

- Set aside funding for the development NADC

Signed 7th October, 2016 on behalf of the following aquaculture stakeholders

Dr Rashid Tamatamah, Department of Aquatic Sciences and Fisheries Technology, University of Dar es Salaam;

Dr Yohana W. Shaghude, Institute of Marine Sciences, University of Dar es Salaam;

Prof Nazael A. Madalla, Department of Animal, Aquaculture & Range Sciences, Sokoine University of Agriculture; and

Dr Semvua I. Mzighani, Tanzania Fisheries Research Institute.