



AFRICAN UNION
**INTERAFRICAN BUREAU
FOR ANIMAL RESOURCES**

REPORT OF THE EXPERT CONSULTATION ON ROADMAP FOR ESTABLISHING CENTRES OF EXCELLENCE IN FISHERIES AND AQUACULTURE IN AFRICA



Group Photo: Experts consultation on roadmap for establishing centres of excellence in fisheries and aquaculture in Africa

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EXECUTIVE SUMMARY

The African Union Interafrican Bureau for Animal Resources (AU-IBAR) in collaboration with the NEPAD Planning and Coordinating Agency (NPCA) and Zanzibar, the United Republic of Tanzania with support from the European Union organised Expert Consultation Meeting on a roadmap for Establishing Centres of Excellence in Fisheries and Aquaculture in Africa in order to strengthen the capacity of the continent for improved management and development of its fisheries and aquaculture resources so as to ensure increased sustainable contribution of the sector to food security, poverty alleviation and economic growth. The meeting was held from 27th to 28th of June 2016 in Zanzibar Beach Resort in Zanzibar, United Republic of Tanzania.

The meeting was attended by 39 participants that included representatives from AU Member States, Regional Economic Communities, Regional Fisheries Bodies, Research and academia institutions from and outside the continent, Developmental partners, CSOs and staffs from AUC (AUC-DREA and AU-IBAR). The list of participants is attached as annexed to this report.

The meeting identified and agreed on priority areas, scope of the centres of excellence, institutional frameworks and sustainability as well as the process for the establishment of the Centres of Excellence

I. INTRODUCTION

1.1 Background

The fisheries and aquaculture sector in Africa provides vast opportunities for economic growth, livelihoods and food security on the continent. The continent is adjacent to some of the productive large marine ecosystems in the world's oceans that include the Guinea Current, the Canary Currents, the Agulhas and Somali Currents, the Benguela Currents, the Red and Mediterranean Seas. These marine ecosystems are significant sources of livelihoods and animal protein as well as providing vital micro-nutrients for some 200 million people –about 30% of the continent's population. The continent also has vast networks of rivers and lakes that contribute to socio-economic activities in various countries and regions. Continent-wide, lakes, reservoirs and wetlands important for inland fisheries cover a total of 1 362 000 Km², representing 17 percent of global surface water resources. Relatively high proportion of land is covered with surface waters in East, Central and West Africa. The potential for inland water fisheries on the continent is therefore immense. The significance of inland water fisheries to local populations is shown by the fact that they are particularly important for food security but in most rural areas especially landlocked countries (e.g. Uganda), inland water fisheries are also important for income generation.

The percentage global consumption ratio between fish protein and all animal proteins is estimated at 16.1 % for the world but 17.9 % for the Africa signifying the importance of fish in the diet of Africans. The sector provides a direct source of livelihoods to over 10 million Africans and more than 50 million more are engaged in ancillary activities of the sector as secondary but critical activity in rural areas. Compared to some Asian countries, production from aquaculture remained disappointingly small but is currently increasing in a few countries. The subsector has the potential for enhancing livelihoods in rural communities but the pace for advancement has remained low.

1.2 Rationale

The fisheries and aquaculture sector still has enormous potential to significantly increase its contribution to GDP, food security and poverty alleviation on the continent. The capture fisheries sector in particular is presently characterized by problems of weak management, overfishing (IUU), stagnant or declining fishery production, high poverty loss, habitat destruction and weak professionalism. In perhaps equal measure, the pace of aquaculture development on the country has been slowed by issues of unsustainability practices, weak extension and technical know-how.

The emerging disciplines for rationale and sustainability management of capture fisheries are based on principles of integrated ecosystems management approaches (habitat and biodiversity considerations), user rights, community integration, environmental randomness such as climate changes and other natural disasters etc. In the specific case of the management of large marine ecosystems, the approach being promoted to ensure management of these ecosystems is based on various modules that include productivity, fisheries, pollution and ecosystem health, socio-economics and governance. Admittedly the knowledge-base for these modules is still scanty and also aggravated by staff capacity attrition in various countries of the regions. The inland fisheries, being practised in freshwater ecology, poses management decisions for countries and regions adjacent to these water bodies. The rational management of these water bodies require scientific methods and techniques for their assessment and monitoring, the capacity of which is limited on the continent.

The sustainable commercial development of aquaculture has been a major issue on the African continent. Since its introduction to Africa in the 1940s, aquaculture development has had a disappointing history

due mainly to the inappropriate approaches adopted and pathways followed. There is a need to promote new production systems, for example, cages and tanks previously accompanied with the refinement of existing production systems. There is no gainsaying that productivity and production from fish culture practices could be enhanced by genetic engineering for enhancing growth performance, stock enhancement practices, increasing diversity in culture species etc. This calls for major capacity human and institutional development across the continent in order to fully realize the potential of aquaculture for food security, poverty alleviation and economic growth.

The majority of earlier and present generations of fisheries and aquaculture managers received their training from institutions outside the continent. This was necessitated by the limited number of specialized academics and professional institutions on the continent but also the then numerous existing opportunities for scholarships for overseas institutions. Due mainly to retirements, there is a looming capacity problem in fisheries and aquaculture institutions which would have far-reaching consequences for sustainable fisheries management and responsible development if not giving urgent attention. A clear manifestation of this problem is the observation that a significant number of the fisheries and aquaculture institutions are manned by the Veterinarians. The situation is aggravated by the limited number of specialized institutions for human capacity building in various disciplines of fisheries and aquaculture on the continent. The current vogue in fisheries and aquaculture management advocates for scientific considerations, underpinned by human dimensions, for the sector taking into consideration multi-disciplinary approach.

The Joint Conference of African Ministers for agriculture, rural development, fisheries and aquaculture in May 2014, Addis Ababa, Ethiopian, recognized the relevance of capacity development in the fisheries and aquaculture sector and therefore requested the **'African Union Commission, NPCA and RECs to establish African centres of Excellence for aquaculture, capture fisheries, biodiversity studies and oceanography to enhance capacity for fisheries and aquaculture research.'** The sector is a source of immense potential for employment for skilled workers, including women and youth. This potential is however far from realized due to limited number of dedicated centres for intermediate and middle-level manpower development in the sector. Thus most investors, including fishing vessel owners, fish farm owners, factory managers, work yards, etc., import foreign workers to work on-board fishing vessels, factories, fish farms etc. The industrial fishing sector is, for example, without adequate manpower on the continent as skippers of industrial fishing vessels. The opportunity for such training is limited and has been utilized from expensive overseas vocational schools; such opportunities have become more limited overtime. Thus majority of the industrialized fishing vessels are manned by foreigners. Creating regional technical vocational training centres will significantly absorb Africa's workforce and support the sustainable and rational development of the fisheries and aquaculture sector

The proposed centres of excellence would contribute immensely to the production or supply of critical mass of expertise in the various fields of fisheries and aquaculture that would impact positively on the sustainable management and development of the sector. Research centres would support the provision of the relevant scientific information for implementing evidence-based reforms of the sector. The AFRM has been endorsed in 2015 by the Joint Ministerial Conferences of agriculture, rural development, water and environmental, fisheries and aquaculture as the mechanism for deliver reform in the fisheries and aquaculture sector on the continent. The membership composition of working groups includes experts institutions (from university and research institutions), technical institutions in MS as well as individual experts that could provide support to the established centres of excellences in terms of appropriate curriculum development, operationalizing these centres and institutional development of the centres. Seven working groups are established within the mechanism to mainly provide technical support on policy

formulation and on critical positions to ensure informed responses to emerging challenges. The thematic areas for the working groups are: policy, institutions and governance; MCS; small-scale fisheries; Aquaculture; Trade and marketing; Finance and investment and Human resources development.

Situation analysis of existing institutions

While African numerous universities, research and training institutions in general animal and environmental sciences, the science curricula of most these institutions are limited in content to produce graduates with specialization in relevant disciplines of fisheries and aquaculture. In the past some of these institutions have contributed to the development of a pool of fisheries and aquaculture specialists on the continent, whilst some have produced quality research works. These include the African Regional Centres of Aquaculture, Nigeria; the Nigerian Institute of Freshwater Fisheries and Research (NIFFR), Nigerian Institute of Oceanography and Marine Research (NIOMR), National Institute of Fishery Research (Angola), Centre de Recherches Halieutiques et Océanologiques du Benin, Fisheries Research Station, Limbe (Cameroon), Risk Assessment Centre, Département Environnement, Parcs Nationaux (Gabon); Aquaculture training centre (LUNAR), Malawi.

In recent years however, there is a noticeable growing number of undergraduate and postgraduate institutions as well as research institutes on the continent that offer courses in fisheries, environmental (oceanographic and biodiversity) studies and aquaculture. These include the Lilongwe University of Agriculture and Natural Resources (LUANAR) (Malawi); the Institute of Marine Biology and Oceanography (Sierra Leone); the Regional Productivity and Biodiversity Centre, Legon, University of Ghana (Ghana); the Regional Centre for Pollution Monitoring (Oweri, Nigeria), Egypt International Aquaculture training centre; le Centre National des Sciences Halieutiques, de Boussoura Conakry (République de Guinée), the Centre for Environment and Information Management System (Department of Surveying and Geo Informatics, University of Lagos, (Nigeria) etc. There have been previous attempts by donor-assisted programmes (e.g. Guinea Current Large Marine Ecosystems –GCLME) to strengthen the capacities of some of the teaching and research institutions in the West and Central African regions as GCLME Regional Activity Centres for fish and fisheries, marine productivity and biodiversity, pollution monitoring, environment and information management systems etc. The support to these centres discontinued with the expiry of the GCLME project. The sustainability of these regional activity centres were undermined partly by absence of linkages with regional economic communities in their respective regions and perhaps limited consultations with member states and other stakeholders in their selections.

The general trend is that support to these training centres has been limited, which has affected the quality of output with implications for sustainable fisheries management and aquaculture development. In view of the multiplicity of challenges facing the sector and the need to adopt a holistic approach in its management and development, the existing curricula and research aspects need to be re-oriented to meet these challenges. These would require a major review to determine gaps based on prevailing challenges such as climate change, capacity development for Total Allowable Catch (TAC) based fisheries, Ecosystem Approach to Fisheries (EAF), Ecosystem Approach to Aquaculture (EAA), Rights Based Fisheries Management (RBFM), establishing Marine Protected Areas (MPA), various culture systems and issues of sustainable, development of management plans for inland fisheries etc.

Besides their limitation in scope, these specialized fisheries and aquaculture institutions are also skewed in terms of regional locations and knowledge of their existence on the continent limited. Based on institutional analyses, established criteria and outcome of stakeholders' consultations, some of the existing 'centres' may be transformed into the proposed centres for the identified disciplines or linkage fostered.

Centres of excellence

The observed increase in the number as well as titles of the centres of excellence from those recommended by the Ministers is necessitated by the realisation that the present challenges confronting the fisheries and aquaculture sector are enormous and multifaceted. The fisheries and aquaculture operations are conducted in marine and freshwater (inland) ecologies. There are huge challenges in capacity for culturing diverse species across the countries and enhancing the growth performance of cultured species. These require specialized disciplines in culture techniques, including genetic improvement techniques, fish species diversity (reducing overreliance on tilapia culture which is prevalence on the continent), and freshwater quality management (limnology) etc. The issue of governance and policy has been identified in the Policy Framework and Reform Strategy for fisheries and aquaculture as key areas for reform to ensure increased sustainable benefits by member states from the sector. This justifies establishing a centre on ocean governance and policy.

Another major issue in African fisheries and aquaculture is the dwindling capacity of middle-level manpower. This category of supporting staff are very crucial for extension activities in post-harvest technology, net mending, marine engineering, sea farer ship etc. the lack of or inadequate training institutions for this category is having devastating effects on employment creation and with all its social effects. In most cases, the university curricula do not provide for the development of this important category of workers that are critical as support staff to the fisheries and aquaculture sector. In few cases the academic institutions provide professional courses at certificate and diploma levels but experience dictates that the priority in these institutions are heavily biased in favour of academic qualifications and, when run together concurrently with academic courses within the same institutions, professional courses are very often marginalized and looked down upon. Thus support to the professional training courses is often minimal as compared to the academic departments. It is therefore critical that regional technical vocational centres be established in each of the five regions to cater for youth and women with the goal of not only increasing employment in the sector by strengthening professionalism but also enhancing productivity in the sector. These challenges mainly revolve around capacity in specialized disciplines in the various aquatic ecologies or ecosystems, species diversity.

Management decisions and policies in the fisheries and aquaculture sector in the five regions of the continent needs to be supported by scientific evidences and these evidences should be generated by dedicated research institutes and their interpretation by a competent fisheries and aquaculture managers. A more tangible solution to the problems of capacity in the various regions is the establishment of African centres of excellence. This is reasonable done by the identification of appropriate institutions and strengthening their capacities in the required disciplines.

1.3 Objectives

The principal objective for establishing dedicated centres of excellence in the sector in order to strengthen the capacity of the continent for improved management and development of its fisheries and aquaculture resources to ensure increased sustainable contribution to food security, poverty alleviation and economic growth.

The specific objectives of the meeting were: (i) to agree on the scope and priority areas to be covered by the Centres of Excellence, (ii) to discuss the institutional framework and sustainability mechanism, and (iii) to propose a roadmap for the establishment of centre of excellence.

1.4 Participants

The meeting was attended by 39 participants including **Member States** (Cameroon, Chad, Nigeria, Uganda, United Republic of Tanzania and Zimbabwe); **Regional Economic Communities** (Southern African Development Community (SADC), East African Community (EAC), Common Market for Eastern and Southern Africa (COMESA), and Inter-Governmental Authority for Development (IGAD)); **Regional Fisheries Bodies** Lake Tanganyika Authority (LTA)); University and Research Centres (ARAC, Nigeria; Benha University, Egypt; University of Sierra Leone; Lagos State University; LUANAR, Malawi; University of Ghana; Institute of Marine Science, Zanzibar; University of Dar es Salaam (Tanzania); University of Portsmouth (United Kingdom) Water Research Institute, Ghana; United Nations University, Iceland; **Developmental partners** (FAO; WorldFish (Egypt); SmartFish Project, **Journalists** (CRTV, Yaoundé Cameroon; TV3, Accra Ghana; Journaliste au service (Société et Economie Abidjan, Ivory Coast) as well as AUC-DREA and AU-IBAR staff members.

2. OPENING SESSION

The opening ceremony was marked by four statements from the representatives of SADC, AU-IBAR and Minister of Agriculture, Natural Resources, Livestock and Fisheries, Zanzibar, United Republic of Tanzania:

Dr Motseki Hlatshwayo, on behalf of the SADC Executive Secretary provided remarks. He thanked the United Republic of Tanzania particularly Zanzibar for hosting such an important event. He acknowledged the importance of fisheries and aquaculture within the SADC region and for Zanzibar in particular, thus prioritised for developing the member states economy. He appreciated Tanzania and Zanzibar efforts for domesticating SADC Protocol on Fisheries and contributing towards continental efforts in sustainable management of fisheries resources. He thanked AU-IBAR for organising this meeting and providing continental leadership on fisheries and aquaculture. He recognised the establishment of the centre of excellence as an important tool in driving fisheries development in SADC region and continent wide. Lastly, he welcomed all the delegates to the SADC region especially to the beautiful South West Indian Ocean Island of Zanzibar.

Dr Simplicie Nouala, Chief Animal Production Officer on behalf of the Director AU-IBAR thanked the United Republic of Tanzania and Government of Zanzibar for graciously accepting to host AU-IBAR meetings and the participants for attending these important events. He introduced the AU-IBAR as a specialized technical agency under the Department of Rural Economy and Agriculture of the African Union Commission. The 2014 Joint Ministerial Conferences in Addis Ababa, Ethiopia charged African Union to facilitate the establishment of Centres of Excellence in Fisheries and aquaculture to enhance capacity building in the sector for its sustained development. Thus the purpose of the meeting was to share experiences, lessons and knowledge on appropriate mechanism or roadmap for establishing African centres of excellence in fisheries and aquaculture. The establishment of the centres is anchored to the continental Policy Framework and Reform Strategy for Fisheries and Aquaculture.

The Principal Secretary, Dr Juma Ali thanked the organisers for identifying Zanzibar as a host for this important meeting. He noted that this platform would encourage sharing of information and ideas with other countries on their fisheries and aquaculture activities and encourage participants not to leave Zanzibar without exploring the beautiful town, nature reserves and spices. He introduced the Hon. Minister of Agriculture, Natural Resources, Livestock and Fisheries, Zanzibar, Dr Hamad Rashid Mohammed to provide his welcoming remarks and officially open the meeting.

The Hon. Minister of Agriculture, Natural Resources, Livestock and Fisheries, Zanzibar, Dr Hamad Rashid Mohammed congratulated the African Union for spearheading the development of the Policy Framework and Reform Strategy for Fisheries and Aquaculture in Africa and their proactive leadership in the implementation of the Fisheries Governance and the Fish Trade Projects in Africa. He acknowledged that the objectives of this meeting are geared towards strengthening the capacity of the continent for improved management and development of its fisheries and aquaculture resources to ensure increased sustainable contribution to food security, poverty alleviation and economic growth. Thus it is critical for the African Governments to sustain the momentum and build on the efforts and positive development of the AU-IBAR and NPCA in order for the African fisheries sector to contribute effectively to the socio-economic development and improve the welfare and living standards of our people while taking into consideration environmental concerns. He thanked the African Union, fellow colleagues in the Ministry for their great effort in realising this meeting and participants present in the meeting. He alluded that Zanzibar have just entered into Fisheries Access Agreement with foreign fishing vessels and have registered 84 fishing vessels of which none is African. The Minister encouraged African Union member states to get involved in exploiting their own resources and benefit from their natural resources. He declared the meeting open.

2.1 Adoption of the Agenda

AU-IBAR presented the Agenda. It was adopted without amendments.

3. TECHNICAL SESSION

Facilitated by AU-IBAR, the meeting was informed by invited presentations, plenary discussions and group work sessions. The following presentations were invited:

Background and objectives of the meeting by Dr Mohamed Seisay, Senior Fisheries Officer of AU-IBAR

Dr Mohamed Seisay commenced with stating that the majority of earlier and present generations of fisheries and aquaculture managers received their training from overseas institutions, necessitated mainly due to (i) limited number of specialized academics and professional institutions on the continent (ii) the then existing opportunities for scholarships for overseas training (iii) variety of reasons, e.g. retirements and attrition, there is a looming capacity problem in fisheries and aquaculture institutions with far-reaching consequences for sustainable fisheries management and responsible development (iv) need for relevant curricula for capacity development at all levels.

The current realities reveal that there is limited number of specialized institutions for human capacity building. The current fisheries management practices are without multi-disciplinary approach such as biology, environment, human consideration, and socio-economics in order to ensure increased productivity and sustainability. Specialized training in fields such on, e.g. policy issues, ocean and inland water governance, socio-economics, science, etc. are critical for sustainable exploitation and benefits. In the area of aquaculture development, capacity in important fields like genetic improvement, diversification of cultured species and systems, environmental management etc. still pose some challenges. Crucially capacity development for reform in the sector must not be limited to senior managers; vocational training for middle-level manpower development is crucial to enhancing productivity and employment

The Joint Conference of African Ministers for agriculture, rural development, fisheries and aquaculture in May 2014, Addis Ababa, Ethiopian, recognized challenges faced by the sector and requested the **'African Union to establish African centres of Excellence for aquaculture, capture fisheries, biodiversity**

studies and oceanography to enhance capacity for fisheries and aquaculture research.’

Thus AU-IBAR organized this stakeholder consultative meeting with the principal objective for establishing dedicated centres of excellence in the sector in order to strengthen the capacity of the continent for improved management and development of its fisheries and aquaculture resources to ensure increased sustainable contribution to food security, poverty alleviation and economic growth

The specific objectives of the meeting were to:

- i. agree on the scope and priority areas to be covered by the Centres of Excellence,
- ii. discuss the institutional framework and sustainability mechanism,
- iii. propose a roadmap for the establishment of centre of excellence.

Dr Daud Kassam on Africa Centre of Excellence in Aquaculture and Fisheries Science (AquaFish), Lilongwe University of Agriculture and Natural Resources (LUANAR)

World Bank (WB) has embarked on the project which is called Africa Centre of Excellence (ACE II) whose aim is to strengthen selected Eastern and Southern Africa higher education institutions to deliver quality postgraduate education and build collaborative research capacity in the regional priority areas clustered as follows: Industry, Agriculture, Health, Education and Applied Statistics. Following a call for proposals released by WB, Lilongwe University of Agriculture and Natural Resources (LUANAR) in Malawi, submitted its application which was amongst the 109 proposals submitted from the 10 countries in the region. LUANAR’s proposal was meant to host the Africa Centre of Excellence in Aquaculture and Fisheries Science (AquaFish) whose main objective is **“to foster innovation and entrepreneurship in the production of high skilled fit-for-purpose critical mass of agricultural scientists for improved aquaculture and fisheries management in order to enhance food, nutrition and economic security in Eastern and Southern Africa”**. Specifically, the AquaFish intends to achieve the following, a) train critical mass of MSc and PhD graduates who are competent to create innovations that will revolutionize the aquaculture and fisheries sector in Africa, b) enhance capacity of the centre of excellence to attract national and regional students and train world class scientists that are relevant to industrial and development needs in the aquaculture and fisheries sector in Africa, c) Improve innovations/ technologies for increasing fish production, value addition and marketing, through partnerships. Having gone through rigorous evaluation process which constituted both technical, Onsite and leadership levels, AquaFish has been officially approved amongst the 24 final centres, with AquaFish to be funded up to **\$6 million**. The project is in line with, and will significantly drive the Comprehensive Africa Agriculture Development Programme (CAADP), the Science Technology and Innovation Strategy for Africa (STISA), Sustainable Development Goals, and the Malawi Growth and Development Strategy, just to mention a few development frameworks, to increase human capacity development for aquaculture and fisheries sector growth for improved fish per capita consumption in the region. The centre will employ innovative, entrepreneurial and multidisciplinary approaches to training, research and outreach on production, value addition and fisheries management, through strategic partnerships. The main outcomes of the centre will include: (i) enhanced capacity to produce graduates that are relevant to industrial needs in aquaculture and fisheries sector in the region, (ii) fit-for-purpose proactive graduates (338 MSc and 84 PhD, with at least 20% being non-Malawians but Africans) and (iii) strengthened partnerships in the production of quality graduate students in the aquaculture and fisheries value chain, relevant for economic development. AquaFish centre builds on LUANAR’s track record of serving as a regional training centre in aquaculture and fisheries science for Africa, as evidenced by hosting the AU-Aquaculture Working Group, NEPAD SanBio Fish Node, Afri fish Net. Therefore LUANAR sees itself as potential AU Centre of Excellency in aquaculture and fisheries in region being championed by AU-IBAR.

Dr (Mrs) Ebinimi Joe-Ansa on African Regional Aquaculture Centre, African Regional Aquaculture Centre (ARAC), Aluu, Port Harcourt, Nigeria

African Regional Aquaculture Centre (ARAC) originated as a result of recommendations of the Aquaculture Planning Regional Workshop held in Accra, Ghana in 1975. ARAC was established as the Aquaculture Centre in Africa to provide research and training in aquaculture using a multi-disciplinary approach and became fully operational in 1980. The Centre has two research stations, the freshwater fish research station located at Aluu near Port Harcourt and a brackish water research station at Buguma, both located in Rivers State, Nigeria.

ARAC offers both short and long term training programmes to provide skills and build capacities across the aquaculture value chain. The curriculum for short term training includes training in fingerling production, feed formulation and production, oyster farming, freshwater prawn farming, fish smoking, packaging and value addition, pond design and construction, aquaculture business plan development, integrated agro – aquaculture, aquaculture enterprise management training. Over 5000 farmers have been trained since inception of ARAC. Other activities at ARAC include research and exchange visits, excursions, on farm pond demonstration practical training, vocational and skills training, women and youth empowerment training programmes, and annual training of about 150 undergraduate students from various higher institutions on three to six months Industrial Attachment.

For the long term training, ARAC is affiliated to the Rivers State University of Science and Technology for the Post graduate diploma and Master of Science degree in Aquaculture. Over 200 seasoned senior aquaculturists from 25 Member States and Haiti were trained at ARAC since its inception in 1980. Today some of the ARAC graduands occupy leadership positions in their countries for the further development of Aquaculture in Africa. Scientists at the Centre have worked on nutrition and culture requirements of freshwater and brackish water fin and shell fish species. Extension manuals have also been produced and scientific papers published in journals and as conference proceedings. Consultancy services are also provided to public and private institutions as well as individuals.

Facilities at the Centre include – administrative block with offices, laboratories, training hall, conference room, library, sick bay. Also the Centre has over 100 ponds of varying sizes and structures, laboratories for research, feed-mill, staff quarters, a community primary school sited in the Centre. Other facilities include pig houses for pig cum tilapia integration, snailry, and crop production units. Partners (old and new) include Japanese Government through JICA, EEC, Niger Delta Development Commission (NDDC), Market Development in the Niger Delta (MADE) funded by DFID, ITOCA, CTA, etc. The Scientists at the Centre have been trained under TCDC arrangements in China, and have also won Fellowships including NUFFIC fellowship of the Netherlands Fellowship Programme as well as African Women in Agricultural Research and Development (AWARD) Fellowships.

Challenges in ARAC include brain drain, poor funding, lack of electricity, lack of accommodation for visiting scientists and students, lack of laboratory equipment.

Dr George Wiafe on Experience and lesson sharing from West Africa Regional Marine Centres and centre for Monitoring for Environment and Security in Africa (MESA), University of Ghana

The presentation was based on two marine centres which were set up in West Africa to co-ordinate marine programmes. The first centre, Marine Productivity and Biodiversity Centre (MPBC), based in the University of Ghana was established through a Memorandum of Understanding with the Guinea Current

Large Marine Ecosystem (GCLME) Project in 2005 to co-ordinate assessment and evaluation of marine productivity with regards to the carrying capacity for living marine resources in the GCLME. This was to formalize the involvement of the University of Ghana in supporting similar efforts during the pilot phase project from 1994 to 1999. The basis for the establishment of the Centre was that, predictions on present and future availability of living marine resources for economic and food security, will depend on knowledge of productivity patterns. The Centre carried out monitoring of plankton using Continuous Plankton Recorders which were deployed for the first time in Africa, thus making the MPBC the only centre on the continent with capacity to carry out such regional assessment. After completion of the GCLME Project, the Marine Productivity and Biodiversity Centre was annexed as an academic Unit with support solely provided by the University.

The second centre, also based in the University of Ghana, is the ECOWAS Coastal and Marine Resources Management Centre established through the ECOWAS Commission as part of the implementation of the Monitoring for Environment and Security in Africa (MESA) continental initiative. The ECOWAS Marine Centre is providing earth observation services to combat illegal, unregulated and unreported (IUU) fishing in West Africa, as well as forecasting ocean conditions for safety at sea to artisanal fishers. Besides providing these operational services, the Centre also carries out regional training, short professional courses, internships, and online/distance learning. It has also formed synergies with similar programmes in the region. The ECOWAS Centre is financed under the 10th EDF and partly by the University of Ghana. It will be implementing the GMES and Africa Marine Services as part of the 11th EDF from September, 2017.

Dr Pierre Failler on Centres of excellence (Academic institutions) in fishery and aquaculture in Europe, University of Portsmouth, UK

There are not, per se, Centres of excellence in fisheries and aquaculture in Europe. Rather, there are a number of universities, which have close links with research centres, that provide engineering and master degrees in fishery and aquaculture. Generally, the high reputable institutions in fishery and aquaculture are found in fishery and aquaculture economic dependent countries such as Norway and Iceland. In that regard UK institutions look like an expectation as, over the years, fishery economic importance is constantly decreasing while aquaculture is not increasing significantly. The strong link with research centres, through large European research projects or through cluster initiatives such as the French one with the laboratory of excellence (association of universities and research centres on a particular topic with high returns such as numerous publications in top journals) is one of the key assets of the European universities. This type of interaction allows them to get funds for supporting PhD and Post-Doc students and to develop their own research capacities which in return are able to attract good students. The strength of the European universities also relies on the European research network in fishery and aquaculture that benefit from the financial support European Union Research Framework. The growing demand for aquaculture and decreasing one for fishery management is currently changing the landscape of universities programs: fishery management is not anymore on the list and embedded within blue economy or ocean governance programs while aquaculture is getting more attention from technical and genetic areas to risk management, environmental and planning dimensions. The decreasing support of usual cooperation agencies is another factor of the decline of fishery programs in European universities as the majority of students were foreign ones with a large part from Africa.

Dr Tumi Tómasson on Some thoughts on centres of excellence in fisheries and aquaculture-experiences from the SADC RFTP and United Nations University Fisheries Training Program (UNU-FTP), Iceland

Fisheries are important to the livelihoods, food security and nutrition of millions of people but their full potential is far from being realised. The sustainable use of ocean resources is elaborated in SDG goal 14, but it is also widely recognized that if some other SDG goals are to be achieved, we will have to improve the management of fisheries and handling and processing the catch. Education, capacity building and advocacy are key issues in the debate on fisheries. In this summary I will draw on my experiences with the SADC Regional Fisheries Training Programme in 1991-1995 based in Malawi and which had a similar structure as the proposed centres of excellence in fisheries and aquaculture being discussed here. I will also draw on my knowledge of the UNU Fisheries Training Programme which was established in Iceland in 1998.

The role of ICEIDA in supporting the SADC Coordination Unit was to assist in engaging development partners, coordinating activities and assisting with implementation of projects. Regional centres were to be established in all SADC countries varying from very narrow projects of practical nature, such as fish-cum-duck farming in Botswana to a full BSc and MSc in aquaculture at Bunda College in Malawi. It was difficult to get donors to engage with these centres, in particular those who were offering training at the vocational level. Two projects however had a lasting impact, i.e. a ten week multidisciplinary course in fisheries policy and management at the fledgling University of Namibia, supported by NORAD. Through continued NORAD support it developed into a four year BSc degree programme in fisheries. Although mainly national today, it still has the occasional student from neighbouring countries. The degree programme at Bunda, supported by JICA and ICEIDA, was even more successful and a large number of students from the SADC countries completed a BSc in aquaculture and some continued to the MSc level. Currently a new regional programme with the support of the WB is being implemented at Bunda College, now part of the University of Malawi.

The main challenge in keeping these programmes going was the one of access. Only ICEIDA and NORAD provided funds for scholarships. Member countries did not provide scholarships to nationals, with the exception of Malawi where some technical staff received support to enrol at Bunda College to the Diploma and BSc level. We learned that for centres to engage successfully in regional or continental capacity building, national authorities and regional organisations must come to an agreement on the funding of both research and scholarships once external funding ends.

A feasibility study carried out in Iceland by the UNU in 1995 found Iceland to be a good option for post-graduate fisheries training targeted at fisheries professionals in developing countries. In spite of its small population Iceland is among the top ten fishing nations of the world with a highly developed fisheries sector. Establishing the UNU FTP in Iceland was a good opportunity to showcase how effective, biologically sustainable and profitable fisheries could be when based on good management underpinned by science. The UNU-FTP started operation in 1998. The programme is mainly financed through contributions from the Icelandic ODA budget and is managed by the Marine Research Institute in close cooperation with other research institutes and several universities in Iceland.

The goal of the UNU-FTP is to assist partner countries in reaching their development goals in fisheries through capacity building and engaging in research and policy advice to promote improved utilisation of living aquatic resources. The core activity of the UNU FTP is a six month training programme held annually in Iceland, normally undertaken by about 20 early to mid-career professionals from 10-15 countries (see box 1). Those who complete the six month training in Iceland receive a certificate. The UNU-FTP offers scholarships to selected former fellows for MSc or PhD studies at Icelandic universities (see box 2). Their

research projects must address an important issue for the development of fisheries or aquaculture in the home country and strengthen the local research environment. So far 28 fellows have been awarded scholarships, seven have completed PhD studies, seven MSc and four have done both MSc and PhD. Since 2004 the UNU-FTP has in together with its partners developed and delivered over 40 short courses in partner countries. Over 1000 people have completed these short courses in fifteen countries (see box 3). The UNU-FTP partners are generally happy with the cooperation and surveys indicate that for a large majority of the fellows that complete the six month programme in Iceland the training in Iceland has been a watershed event in their professional development.

Regional centres must add value to existing training options. In most of our partner countries there is no shortage of university trained people who have aquatic sciences, fisheries or aquaculture as their major. Universities emphasize academic learning over practical training. When aiming at the establishment of centres of excellence in fisheries it is therefore important to pay attention to their ability to serve the institutions responsible for managing and developing fisheries and aquaculture and those who wish to study fisheries. Their research and teaching must address and reflect the problems the sector faces. They must also practice advocacy so that authorities understand what is at stake and offer in-service training to existing staff. To change fisheries through building capacity of new recruits will only bear fruit in the long term, but we need changes now. The UNU-FTP has from the beginning had a special focus on Africa and about half of the total budget is spent on cooperation with partners on the continent. We look forward to working with some of the centres of excellence in the future.

Box 1

The UNU-FTP six month programme begins with a six week multidisciplinary introductory course in which fellows develop a view of the importance of fisheries, global developments, put their own fisheries into perspective and gain an appreciation for its development potential. They learn that fisheries management is not always straight-forward and paths for development depend on the interaction of social, ecological and economic factors. After six weeks fellows split up into groups specialising in different areas such as stock assessment, fisheries management, fish handling and processing, aquaculture and fishing technology. After an intensive six week course they embark on a final three month individual research project. The project must address an urgent issue in their home countries and their work is often based on data from their home countries. These research projects are published on our website and are often of significant research and policy relevance such as analysis of data on the coastal fishery of Tanzania and Lake Victoria. Many fellows specialise in fish handling and processing, often to address problems their countries face in exporting to the EU, USA and Japan, but increasingly to address the large post-harvest losses and fish processing methods which threaten food safety.

Box 2

Those fellows who receive a **scholarship** to undertake MSc studies in Iceland with UNU-FTP support get the equivalent of one semester's studies counted towards their degree and many more continue studies in other countries where their projects in Iceland often form the backbone of their thesis. With time more and more fellows have already completed their MSc or even PhD degrees before coming to Iceland. They also have generally better command of English and computer work. Their theoretical knowledge is good, but often of quite general nature and they are often not able to apply it to solve practical problems, like assessing stocks or doing economic analyses of their fisheries. It is also surprising how much they learn about their home fisheries during their stay in Iceland. This points to a weakness in the training they receive at home, both in their university studies and the institutions for which they work.

Box 3

Short courses most often involve a local university or fisheries training institute which then continue to offer the training. Former fellows take part in these activities sometimes in countries other than their own. Local case studies, often from projects in the six month training, are used to illustrate principles and practices. The target groups vary and can be regional or national. When extension agents or inspectors are targeted, practitioners are also included to strengthen the ties between the public and private sectors.

Dr Chiguk Ahn, on World Fisheries University: Proposal by the Republic of Korea World Fisheries University: South Korea and FAO

Mr Ahn provided an overview of the World Fisheries University Proposal that has been made by the Republic of Korea. In describing the Proposal for the Establishment of a World Fisheries University, the purpose was described as to support sustainable fisheries and aquaculture of states, in particular developing states, through education and research.

The intent is to establish a postgraduate school in fisheries and aquaculture in the ROK with approximately 100 students per year. The financing for the first decade will be provided by the ROK and students from developing states will be sponsored by the ROK. The motivation for doing this is Korea's experience in overcoming its own development problems and the perspective that "Education can cure hunger" and Korea's vision of returning the foreign aid and support that Korea has received. The initiative is underpinned by the experiences gained through KOICA-funded International Fisheries Science Cooperation Course that Pukyong National University has run since 2010.

The specific objectives of the WFU include: promoting sustainable fisheries and eradicating poverty, through capacity building; increasing technical capacity of the FAO in establishing and implementing fisheries policies (CCRF, PSMA, SSF guidelines, etc.); fostering fisheries professionals to lead development in the national, regional and global levels; and providing a networking platform for universities, institutions and initiatives to share best practices.

The program will provide for postgraduate programmes at both Masters and Doctorate levels and will start with three schools of: aquaculture technology, fisheries resource management; and fisheries social sciences. In addition, a short term training programme may be established in partnership with fisheries-related institutions and programs across the world.

The location of Busan was selected through competition, noting that Busan is a centre of Korea's fisheries with the country's largest fish and fish products trading port as well as the home of Pukyong National University, the National Fisheries Research and Development Institute, Korea Maritime Institute, and the Fisheries Monitoring Centre.

He noted that the original proposal has gone through various changes since June 2013 when the original concept note presented to FAO, including feasibility studies, presentation to the FAO 153rd Council, and changes inspired by issues raised by the 102nd CCLM Secretariat of legal, programmatic, financial and technical aspects. In May 2016 a step-by-step approach was agreed whereby - if agreed by the 32nd Committee on Fisheries in July 2016 - FAO and the Ministry of Fisheries would establish a pilot partnership program in September 2017 that will (1) deliver joint degrees in postgraduate school at a smaller scale than the original proposal and (2) come under the scrutiny of a consultative body that would review issues on legal, programmatic, financial and technical aspects. Mr Ahn concluded that the final decision on the World Fisheries University during the FAO Conference in 2019, if it passes successfully through the 155th Council Meeting in December 2016, the 40th Conference in July 2017 and, finally, the Conference in July 2019.

Discussions, Key Issues arising and recommendations from Session One

(a) WorldBank funded LUANAR Centers of Excellence, Malawi

Mechanisms for recruiting Masters and PhD students from other African regions

Dr Kassam alluded that partnership have been developed with Rufiform, University of Eldoret, University of Tanzania, University of Stellenbosch, USA, Worldfish, NEPAD Agency. Rufiform and SARNISSA will be used to advertise for recruiting students.

How is the center linked with SADC and moving from national to regional

They have overlooked SADC for regional anchorage and will engage them.

(b) ARAC, Nigeria

What are the sustainability measures in place to support the center once funding is completed?

Conduct training programmes which are highly subsidized but can provide resources, feed that could be commercialized, and facilities that could be leased.

Issue of registration and licencing

ARAC would like to learn from other existing centres. The Government of Nigeria have increased/leveraged salaries for researchers to University researchers. Other issue that the center is facing is the Scientists ambitious to be academically qualified to Professors.

(c) University of Legon, Ghana

How is the MESA programme managing nutrient loading to the oceans?

These are transboundary issues and the programme is implementing regional protocol like Abidjan protocol. On continuous basis, the centre conduct monitoring and analysis of impacts on the environment.

(d) UNU-FTP, Iceland

Health and environment are considered an important aspect when dealing with fish capture. There is a project in Ivory Coast that is addressing fish smoking and the local communities deforest for smoking fish and during the process fishes are contaminated. Is there any other activities looking at waste management emanating from maize, wasted rice, cocoa for improving fish. Are there any mechanisms for strengthening fish processors?

There is quite a number of expertise's existing on the continent and the main aim should be strengthening their capacities through training. Thus the UNU offers training on Fish processing and handling course and was the highest demand course for some time. What is required is the 2 weeks professional courses that is well accredited to offer the course.

Dr Tumi also expressed the willingness to partnership with the African Centers of Excellence when established.

(e) European universities

Dr Peirre Failler emphasised that the parameters for establishing the centers should be based on: Networking and good research for publication

(f) FAO- World Fisheries University

In Africa, the problem is not a post graduate qualification since many students are trained within the continent. The key issue is practical on-hands training. Was a needs assessment conducted in Africa?

An assessment was conducted which looked at different programs on the world, issues causing shrinking of training programme, practability of these training programmes. This was part of gap analysis. The proposed

University is harmonised with existing university such as UNU and also taking into account any adapting and adopting continental issues. FAO has changed focus and investing in new generation for career development. Fisheries are an international business, industrial business and fish most traded globally thus international cooperation is useful thus FAO should be seen as partner for international cooperation and fish management.

Dr Diaa Al-Kenawy on Africa Research and Training Centre, WorldFish Egypt

The Abbassa Africa Research and Training centre is located at Abbassa, Northeast of Cairo, Egypt. The centre was built in 1986, and in 1997 the Government of Egypt provided the facilities to WorldFish (ICLARM at that time) as a regional aquaculture centre for Africa and west Asia. The Abbassa Centre has supported the development of the Egyptian fisheries/aquaculture sector, growing into Africa's largest aquaculture producer and the world's second biggest tilapia farming sector, since it was established. Significant research and training services have been provided over the years to countries throughout the African region.

The Abbassa Centre has good facilities for aquaculture research and training which provide a strong foundation for collaboration:

- 62 hectares area sited in the Nile delta
- 150 earthen ponds (for research and training)
- Indoors concrete tanks for fish hatchery and other research
- The Abbassa strain tilapia breeding program
- New aquaculture feeds research facility
- Workshop, training and educational facilities (auditorium, conference room, library)
- Administrative offices and dry/wet laboratories
- Hostel and residence apartments
- Mechanical and electrical workshop

WorldFish and our partners bring a strong comparative advantage in aquaculture technology research for Africa. The Abbassa Centre builds on WorldFish's unique track record in international public goods research on aquaculture technologies for developing countries in Africa and Asia, including Egypt.

Notable examples of research include: the strong research programs on developing improved breeds of tilapia (Genetically Improved Farmed Tilapia [GIFT] and Abbassa strains), carp and catfish, and extensive husbandry research. The Abbassa Centre builds on this record and seeks to strengthen its research effort through partnerships with leading aquaculture research institutes, within Africa and more globally. The centre is undergoing change to align to the new goals for Egypt and African aquaculture development, to better connect Egyptian knowledge and experiences with Africa challenges for sustainable aquaculture development, and to act as a key component for WorldFish to work with partners to accelerate aquaculture research and development in the African region.

WorldFish seeks to expand the role of the Abbassa aquaculture research and training centre with partners to meet the demand for increased investment in aquaculture to benefit resource-poor consumers and producers in Africa, as well as continuing to provide strong collaboration and expertise to the sustainable development of the aquaculture industry in Egypt. The approach will complement the contributions of governments and their national agriculture research systems (NARS), universities, nongovernmental organizations (NGOs), the private sector, and international development partners at country and regional levels. In line with the WorldFish mission to reduce poverty and hunger by improving fisheries and aquaculture, a vision and mission has been developed for Abbassa. The mission is to catalyse the

development of Africa’s aquaculture potential, which will contribute to the establishment of a sustainable food source for the region.

The vision is to:

- Establish an African centre of excellence for aquaculture research, training and technology development
- Expand regional technical capacity among policy makers, national research systems, extension systems and the private sector to develop and manage aquaculture
- Provide a viable investment channel for donors/investors seeking to fund and grow African aquaculture

The strategy involves three interconnected pathways through which the Abbassa Centre seeks to achieve impact with partners:

- a. First, by being a lead center for high quality aquaculture research in Egypt and Africa with capabilities in:
 - fish genetics and breeding – accelerating development and dissemination of improved fish breeds for African aquaculture
 - feeds and feeding systems – improving the availability of sustainable and low cost feeds
 - fish disease control – improving disease control and managing risks
 - sustainable farming and husbandry systems – including aquaculture systems that can respond to challenges of climate change
- b. Second, by being a focal point for entrepreneurs and private businesses in Egypt and Africa, to utilize and disseminate aquaculture technology, stimulate the emergence of skilled and knowledgeable aquaculture entrepreneurs and creation of enterprises and employment through aquaculture across the African region, including an emphasis on youth.
- c. Third, by being an advocate of sustainable aquaculture in Africa through events and networking that stimulate improvements in the enabling policy environment for African aquaculture growth.

Abbassa Centre already works closely and effectively with a wide range of partners from public and private sector. We intend to build on these for a stronger and Pan-African wide network of collaborators with common vision and complementary skills for development of African aquaculture. Some examples of those partnerships are provided in the table below:

| Target Partners | Needs / Interests (Value Prop) | Services of Interest |
|--|--|------------------------------|
| Research Institutions Gov/Non-gov, universities, AQ agencies | <ul style="list-style-type: none"> • Access to freshwater facility, breeds for research initiatives • Build AQ technical capacity in region / dissemination of knowledge (post training ripple effect) | Quality research Training |
| Private Sector Feed, breed, AQ machinery, agriculture companies | <ul style="list-style-type: none"> • Access to unique facilities, key species for testing • Opportunity to develop custom capabilities to meet testing and technology development needs | Technology Development |
| Regional Funders | <ul style="list-style-type: none"> • Investing in research initiatives to increase AQ knowledge and technology in Africa • Build AQ technical capacity in region | Quality research Training |

Abbassa Centre is also embedded within key functions of WorldFish, and is one of three aquaculture research platforms under the “Sustainable Aquaculture” research program. Its long term outcomes are the long term outcomes of the WorldFish Africa strategy and it is part of the global AQ research agenda / program. WorldFish will use Abbassa as a key component of the new CGIAR Research Program (CRP) on Fish Agri-Food Systems (“FISH”) in Africa.

Leadership and Management

The Abbassa Center is led by a Director with responsibility for overall management of the Center, reporting to WorldFish. To ensure within African reality, an Advisory Committee will be established for ongoing strategic / implementation advice.

Abbassa staff engage in collaborative relationships with partners to co-design custom programs or initiatives comprising of one or more of the following service offerings: (i) research activities; (ii) training and entrepreneurial development; and (iii) private sector aquaculture industry services.

Next steps include:

- Feedback from partners (and welcome the feedback from the AU/IBAR consultation)
- Establishing an Advisory group
- Developing an operational plan, to include
- Partner Engagement / Marketing Strategy
- Competitive / Benchmark Analysis
- Fundraising / Revenue Targets / Pipeline
- 3 Year Capacity Building Strategy
- Facilities & Technology (Investments & Utilization Targets)
- Operational Transition Plan

Dr Andrew Baio, Programme Coordinator, the establishment of the Fisheries and Marine Training Institute (FMTI) in Sierra Leone, Fourah Bay College, University of Sierra Leone

The fisheries of Sierra Leone policy/regulation prescribes that 40% of skilled workers on-board vessels operating in Sierra Leone waters must be of Sierra Leonean nationality. But, such a prescription cannot be invoked because of the paucity of Sierra Leoneans trained in the various disciplines on-board vessels on the high seas. Recognising this gap, UNIDO, in partnership with the Ministry of Fisheries and Marine Resources (MFMR) conceived the Technical Capacity Building in Fishing and Seafood Processing Technology Project in Sierra Leone. The Government of the Russian Federation, UNIDO and GoSL provided the financial support.

The project objective is to develop national human resource capacity within the fishery sector for effective management, optimum revenue generation and sustainability

Implementation Mechanisms entails establishing Fisheries and Marine Training Institute (FMTI) with training focusing on:

- Institutional support provision to the fishery sector
- Development of Labour skills required for the industrial fishing sector
- Improving on artisanal fisheries towards commercialisation

Outputs/Deliverables of the Project

Output 1: Establishing the physical infrastructure (construction of the FMTI)

Output 2: Establishing administrative capacity of the FMTI; developing financial plan and curriculum

Output 3: Training of Trainers

Output 4: Providing training at the FMTI

Training at FMTI for Certificate; Ordinary Diploma and Higher National Diploma Levels

1. Marine Engineering
2. Deck Officer Training
3. Refrigeration
4. Radio Communication Engineering
5. Safety at Sea
6. Fishing Gear Technology
7. Fish Handling and Processing

Ms Dorothée Ravomanana on Reflection on a project on training of Engineers in Fisheries, SmartFish Project; Antananarivo, Madagascar

The PowerPoint presentation is a reflection on a training program of Engineers in Fisheries Sciences in Madagascar. The first two slides are a short report of the need assessment and give an overview of the challenges that faces the fisheries resources sector in the country. Then comes the presentation of the proposed hosting institution of the Program: the ISHM with an emphasis on its historical background (its creation in 1992, its vision and mission as well as its staff capacities. The next slides present the overall project (description, objectives, feasibility and the breakdown of the academic year). The program aims at **training “multidisciplinary” experts in responsible fishing, sustainable aquaculture, integrated management of coastal zones and aquatic environments, continental and marine for optimum utilization of the production of these environments**, in 3 specializations: (i) Aquaculture (AQU): develop and promote a professional project in Aquaculture; (ii) Fisheries Management (GDP): challenges to develop the fisheries sector by using the EAF (iii) Marine and Coastal Environment (EMC) focusing the issue of developing coastal areas in respect of the coastal zone. The presentation is concluded on the will of ISHM to outsource international experts to address lack of national specialists in: Stock assessment and modeling of fisheries; Dynamics of exploited populations; Ecosystem-based management of fisheries; Economics of fisheries and aquaculture.

Mr Phillipe Ouedraogo on Presentation of the community of Practice to operationalize the APRIFAAS (Africa Platform for Regional Institutions in Fisheries, Aquaculture and Aquatic Systems)

The current world is the information world. This is a fact. Any decision cannot be taken without any useful information. Information is the main challenge for any activity taken today.

Presentation of Eco Information- the source of information is the data, the data collected on the ground. At this level, AU-IBAR already has a tool named ARIS. Information contributes to decision. This is one of the most important outcomes of information. Another important outcome is the knowledge. Knowledge can be shared on a web portal. Knowledge in application produces Practices. The practitioners are the members of Community of Practice. Members of Community of Practice interact using tools like social network specifically designed for them. The most important thing to put in place a Community of Practice is not the technical aspect of the work using IT tool, but to put in place an agreement taken into account the organisational aspect of social community with known challenges inherent to human being. This agreement is the key factor of success of a Community of Practice.

Mr André Naoussi on Presentation on the Media Observatory for Sustainable Fishing in Africa (MOSFA), Journaliste Principal/Correspondant De Presse Internationale

The presentation on the theme “**Giving back power to the speechless fishing communities**” highlight the important role of media experts in sustainable fishing in Africa in a context whereby there is a continental joint effort to drive that agenda. The presentation gives an overview of the situation of traditional fishing and those involve in the activities in the continent. It also provides the rationale behind the creation, by the AU-IBAR and World Bank, of a continental media body-MOSFA (its vision and mission) as an instrument that aims at enabling African journalists to coordinate their efforts and influence governments as well as stakeholders to promote campaigns for better fisheries management. It also indicates the architecture of the MOSFA provisional committees. Finally, the presentation gives a broad action plan for the MOFA in the year 2016 with the organization of five workshops in the following cities: Dakar, Tanger, Le Cap, Yaoundé, Dar es Salam and a General Assembly to adopt the status, to elect an Executive Bureau and the Regional Branches, to choose the seat of the association, to adopt a clear action plan, to seek for funding, to launch activities.

Discussions, Key Issues arising and recommendations from Session Two

(a) Fisheries and Marine Training Institute (FMTI) in Sierra Leone

Are the trained Experts going to be absorbed by DWFN or Fishing Community?

The programme is targeting Sierra Leonean and asylum seekers be trained in DWFN and safety at sea

Sustainability of the FMTI centre for funding

The centre is absorbed by the University system. It is also market and private sector demand driven.

(b) Africa Research and Training Centre, WorldFish Egypt

The training offered are they for free? How much do they costs. Are they tailormade?

Yes but few people but the institution prefers a larger group. The training is offered using Abassa strain for both brackish and freshwater.

Sustainability of the centre

The centre has long term agreement with existing international centres of agriculture in Egypt. Some training are donor funded.

4. WORKING GROUP

The group work was guided by Dr. Mohamed Seisay who presented the ToRs for the three groups as follows:

The plenary discussions and the group work focused on:

- The Scope and geographical coverage of the Centres of excellence
- Key Priority areas – disciplines
- Sustainability issues with regards to both financial, institutional and technical:
- The institutional frameworks and Governance of the centres
- The Modus operendi
- The criteria for selection of institutions to be centres of excellence and
- The process of establishment of these centres

5. OUTCOMES OF THE MEETING

Following the plenary discussions and group works the meeting agreed on the following:

1. **Scope of the centres of excellence**

The Centres of Excellence will either be Regional (to address regional specific priorities) or Continental for dealing with issues of continental/global interest such as policy or governance issues

2. **Priority areas:**

The centres of Excellence will address the following priority areas

- i. Aquaculture (Inland aquaculture and Mariculture development)
- ii. Capture fisheries (Inland waters & fisheries development; Marine fisheries & Small Scale Fisheries, Large & small-scale, near and off-shore)
- iii. Aquatic Governance, Policy and Fisheries economics (Policy, ocean & inland waters governance (including law, fisheries management), biodiversity, EAF & fish conservation; IUU & MCS; data & data management, economics (incl PES), sociology & trade; Climate Change, EAF, environment and Post-harvest
- iv. Vocational training & manpower development in fields related to fisheries & aquaculture)

3. **Institutional frameworks and sustainability**

- i. In terms of institutional framework, the centre should be either within or affiliated with a university/ other existing relevant institution(s) and should operate either under the coordination of the AUC for continental centres or under the RECs for Regional centres. RFBs could provide technical operational support to the Centres
- ii. Continental or regional management/steering committee chaired by AU-IBAR or RECs will be established to oversee the operationalization of these centres
- iii. There will be a need to develop innovative financing mechanism to self-sustain the Centre of Excellence either through the existing inter-governmental organizations (RECs AU, etc.) or service provision to various stakeholders
- iv. The centres of excellence will build on existing centres and where possible the establishment of centres of excellence could entail the legitimisation of existing ones through the process agreed upon during this meeting
- v. Networking and collaborative/cooperation arrangements should be developed with international, regional and National existing centres in order to share lessons, best practices and avoid duplication.
- vi. Mode of operation: The Centre will operate either through Virtual platforms or face-to-face engagement

4. **Process for the establishment of the Centres of Excellence**

- i. The meeting agreed that the centres of excellence should be established within the framework of the African Fisheries Reforms Mechanism;
- ii. The AFRM working Group on Human Capacity and Development has been designated to act as “Task Force” to technically drive the process.
- iii. Two institutions have been co-opted to join the task force namely:
 - FAO/Korea World Fisheries University
 - The IGAD
- iv. The Task Force will refine the criteria for selection of institutions prepared during this meeting and develop a CN and Terms of Reference (TOR) for the selection process
- v. The selection will be done through a call for proposals or expression of interest to be launched by AU-IBAR based on the TOR developed by the task force
- vi. The assessment of applications will be done by the task force
- vii. Shortlisted institutions will be assessed based on criteria developed by the task force

viii. The selection process will be validated by a think tank event and submitted for validation to the AU policy processes.

5. The meeting agreed that FAO to serve as Observer to the Group as well as in the entire process.

The task force should submit a report to the high level ministerial dialogue on fisheries and aquaculture

6. CONCLUSIONS

This workshop is a first major step towards the implementation of the Ministerial recommendations and the active participation of stakeholders in the process is a necessary step to ensure ownership of these centres.

The establishment of centres is highly important to drive the Reforms in the Fisheries and Aquaculture sector in Africa as it will increase the continent's capacity to effectively manage its fisheries and aquatic resources through provision of skilled professionals. The centres would bridge the knowledge gaps on the continent and provide a pathway for making employable Africa's youth amidst Africa's incessant population growth, increasing prospects for informed and rational decision-making in the management of the fisheries resources and aquaculture development. In this regard the identification of critical areas or disciplines within the curricula of fisheries and aquaculture is crucial. Hence the significance of this workshop. The emphasis on affiliating these proposed centres to regional institutions such as RECs or the AU (AUC and NEPAD) is important for ensuring their recognition, legalization hence their sustainability

The establishment of these centres, taking into consideration existing initiatives would minimize duplication and proverbial saying of reinventing the wheels. One of the issues that came out of the workshop was the observation that most stakeholders may not be aware what value addition would some of these initiatives would bring to their socio-economic development. Thus the sustainability of these centres will equally depend on the quality of services they will render to various stakeholders along the entire fish value chains.

The establishment of centres of excellence in fisheries and aquaculture offer a great prospect to sustainable development of the sector based on best practices and thus the centres would cater for both the present and future generation in terms of food security, economic growth and livelihoods enhancements.

The task force appointed at the meeting are expected to fast track the process and present a report a report to the forthcoming ministerial Dialogue on Fisheries and Aquaculture scheduled for October 2016.

7. CLOSING CEREMONY

Closing statements were made by Dr. Mohamed Seisay on behalf of the Director of AU-IBAR; Dr Motseki Hlatshwayo, on behalf of the SADC Executive Secretary. The Workshop was officially closed by The Principal Secretary, Dr Juma Ali, on behalf of the Hon. Minister of Agriculture, Natural Resources, Livestock and Fisheries, Zanzibar.

ANNEXES

ANNEX I: GROUP WORK PRESENTATIONS

GROUP I

Group 1

- Definition of scope
- Critical priority areas (disciplines)
- Geographical Coverage for priority areas
- Sustainability issues
 - Legal (accreditation)
 - Finance
 - Technical
 - etc

Critical priority areas (disciplines)

1. Aquaculture

- Inland aquaculture
 - Aquaculture production systems
 - Fish Genetics & Improvement
 - Feed and feed nutrition
 - Disease Control
 - Preventative/control/treatment measures, including biosecurity
 - Broodstock, seedlings, stocking/culture based
- Mariculture development
 - Aquaculture production systems
 - Fish Genetics & Improvement
 - Feed and feed nutrition
 - Disease Control
 - Preventative/control/treatment measures, including biosecurity
 - Ranching, stocking/seeding, cages

2. Capture fisheries

- Inland waters & fisheries development
- Marine fisheries & ssf, Large- & small-scale, near- and off-shore

Geographical Coverage for priority areas

- *See first page*

Definition of scope

- Level - depending on issues/challenges
 - Regional encouraging use of existing structures where possible
 - Continental level – for a specific continental issues
 - Core science: eg., genetics, disease, breeding, biosecurity
- Coverage
 - Marine – capture, capture & aquaculture, aquaculture
 - Inland - capture, capture & aquaculture, aquaculture
 - Aquaculture
- 4 or 5 Mega-Centres of Excellence
 - Collaboration, exchanges with all the (many) existing institutions

Critical priority areas (disciplines)

3. Cross-cutting issues

- Policy, ocean & inland waters governance (including law, fisheries management), biodiversity, EAF & fish conservation
- IUU & MCS
- Data & data management
- Economics (incl PES), sociology & trade
- Climate Change, EAF, environment
- Post harvest

4. Overarching issue area

- Vocational training & manpower development in fields related to fisheries & aquaculture
 - Geographically targeted/focus
 - Possibly professional certification

Sustainability issues

- Legal (accreditation)
 - Either within/affiliation with a university/other relevant institution(s)
- Finance
 - Needs to be strong / vested interest
 - Multiple sources – RECs, universities, watersheds?
 - Bidding process + budgetary allocation
 - Any 3rd party funding needs to be supplemental
- Technical
 - Prerequisite requirements

GROUP 2

Procedure

- Setting up of an independent initial committee or taskforce to oversee the selection of qualified institutions.
- Prepare a TOR (terms of reference) for the call of proposals or expression of interest.
- Open a call for proposals or expression of interest by institutions to be used as a center of excellence for fisheries and aqua culture development (*indicate timelines for application and advertisement*).
- The committee will review the proposals and short list qualified institutions for further analysis by experts that will be engaged later.

Procedure (Cont'd)

- The final analysis and reviewed report at this point must be submitted to the high level steering committee of AU-IBAR for final analysis and selection for recommendations to CAMFA for further analysis and processes leading to final adoption and selection.
- NOTE: The initial committee must be 6 member committee with regional representation of the 5 regions on the continent.
- There will also be one member form AU-IBAR to be an observer.

Criteria for Selection

- Excellent facilities for research, teaching and extension.
- Human resource availability at different levels
- Proof record of sustainability(resource mobilization)
- Contribution or impact result to communities
- National, regional and International collaborations.
- Partnerships are encouraged but not necessarily a limitation.

Procedure (Cont'd)

- The experts can be internal (African based) or foreign to technically review the shortlisted applicants and present recommendations back to the committee for further actions.
- Prospective institutions at this point will be visited by the initial committee for physical verification of facilities as may have been specified in the proposal.
- There will also be interviews of prospective institutions as part of the verification process.

Processes

- Establish an MoU or a legal binding document between the institution and the AU-IBAR
- Strategic development plan (this should identify gaps, capacity building, etc.)
- Establish linkages with international institutions or bodies.
- Half yearly performance review or appraisal as a review mechanism (monitoring and evaluation)
- Accreditation from national, regional or relevant bodies as pertains to area of specializations.

Criteria for Selection (Cont'd)

- Participation in collaborative research of a scientific, technical or policy nature
- Contribution to capacity development through the provision of training.
- Coordination of activities by other institutions
- Active engagement in fields of expertise relevant to the area of specialization
- Number of released technologies/policy recommendations
- Proof for projects undertaken in the last five years as well as ongoing projects.

Group 3

Institutional Framework and Governance

Expert Consultation on Roadmap for Establishing Centres of Excellence in Fisheries and Aquaculture in Africa

28 June, 2016, Zanzibar, Tanzania

Outline

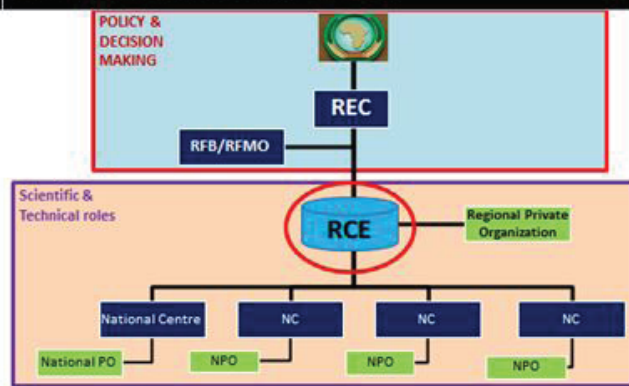
- Institutional frameworks
- Governance
- Networking and Institutional linkages
- Mode of operation

Group 3: Institutional Framework & Governance

Institutional Framework

- Principle of top-down approach adopted
- African Union Commission to serve as overarching body for the continent
 - Appropriately established under the relevant Department (or as specified by norms at AUC)
- Regional Centre of Excellence (RCE) to be an existing and established Centre identified from within a region
 - Criteria for selection of RCE to be defined to guide process of selection
- Regional Centre of Excellence to play a **co-ordinating role** in identifiable discipline

Institutional Framework



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Group 3: Institutional Framework & Governance

Governance

- Identify existing framework at the regional level for establishment of Regional Centres of Excellence
- Develop legal framework if it is non-existent
- Regional Centre must be given mandate to carry out assigned role and recognized as such
- Regional management/steering committee to be set-up must be chaired by the REC
- The Regional Centre will serve as Secretariat to the Regional management/steering committee
- **3 scenarios** for governance envisaged
 - However, decision to be made by each Regional Economic Community as appropriate

REC scenario 1

RECs recognised by the AU

- Arab Maghreb Union (UMA)
- Common Market for Eastern and Southern Africa (COMESA)
- Community of Sahel-Saharan States (CEN-SAD)
- East African Community (EAC)
- Economic Community of Central African States (ECCAS)
- Economic Community of West African States (ECOWAS)
- Intergovernmental Authority on Development (IGAD)
- Southern Africa Development Community (SADC)

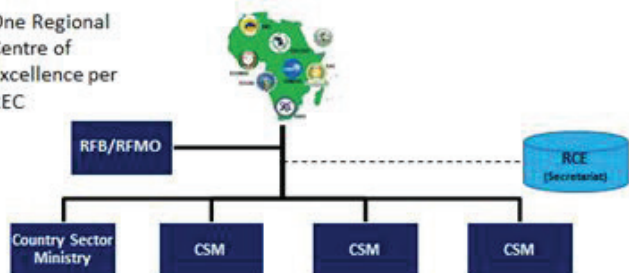


Group 3: Institutional Framework & Governance

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REC scenario 1

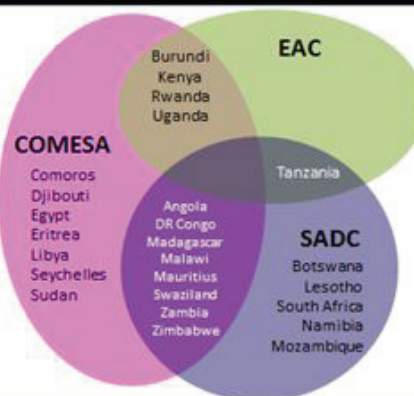
One Regional Centre of Excellence per REC



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REC scenario 2 (multiplicity of RECs)

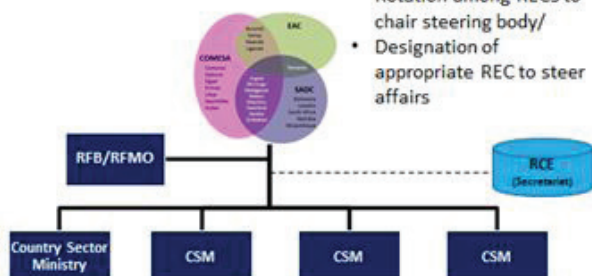
Countries belonging to more than one REC or several RECs within defined region



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REC scenario 2 (multiplicity of RECs)

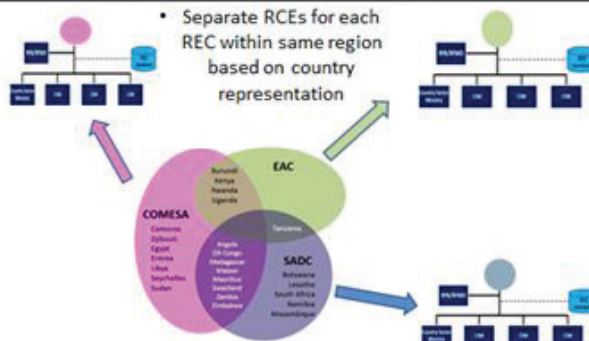
- RECs together to steer affairs of RCE/
- Rotation among RECs to chair steering body/
- Designation of appropriate REC to steer affairs



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REC scenario 3 (multiplicity of RECs)

- Separate RCEs for each REC within same region based on country representation



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Networking and Institutional linkages

- Networking at various levels
 - International, Regional, National, Individual
- Basis for networking
 - Knowledge exchange with international centres
 - Knowledge exchange between sister RCEs
 - Twinning between RCEs
 - Delegate to other competent centres within region
 - Build/Strengthen capacity at national level
 - Bring on board individuals not attached to institutions who have unique expertise (may be **retired**/private)
- Memorandum of Understanding to formalize relation



Group 3: Institutional Framework & Governance

Mode of operation

- Virtual platform
 - Teleconferencing
 - Geoportals for data/information sharing
 - Online/Distance learning/Webinars
- Face-to-face engagement
 - Joint research
 - Internship
 - Dedicated regional training & Annual Workshops
 - Short professional courses
 - Joint commission



Group 3: Institutional Framework & Governance

ANNEX 2:AGENDA OF THE MEETING

TENTATIVE AGENDA EXPERT CONSULTATION ON ROADMAP FOR ESTABLISHING CENTRES OF EXCELLENCE IN FISHERIES AND AQUACULTURE IN AFRICA

27 - 28 June 2016 Zanzibar

| 27-06-2016 | Opening Ceremony | Facilitator: Dr. Simplicie Nouala |
|-------------------|---|--|
| 08:30 - 09:00 | Registration | AU-IBAR Secretariat |
| 09:00 - 10:00 | Statement | Director,AU-IBAR |
| | Statement | NPCA |
| | Statement | Partners |
| | Welcome statement | Tanzanian Government |
| | Background and Objectives of the meeting- scene setting | AU-IBAR |
| 10:00 - 10:15 | Photo session and Tea Break | |
| | Technical Session | |
| 10:15 - 10:30 | Africa centres of excellence in fisheries and aquaculture: General overview of current status and initiatives | Prof Satia |
| 10:30 - 11:15 | Experience sharing and lesson sharing in Africa: | Bunda College ARAC Legon University |
| 11:15 - 12:15 | Experience sharing and lesson sharing elsewhere | Iceland Asia Europe |
| 12:15 - 13:00 | Discussions | |
| 13:00 - 14:00 | Lunch Break | |
| 13:00 - 14:00 | Closure | |
| 14:00 - 14:15 | Terms of Reference for Group sessions | AU-IBAR |
| | Group Work | |
| 14:15 - 17:00 | Group I: identification of key priority areas or disciplines for capacity development in the sector with justification; and potential institutions for hosting the CE with justifications | |
| | Group I: procedures, process and criteria for establishing CE | |
| | Group II: Definition of sustainability issues and institutional frameworks, including their governance | |
| 28-06-2016 | | |
| 09:00 - 10:00 | Group work wrap | |
| 10:00 - 11:00 | Plenary – Group work presentations presentation | |
| 11:00 - 11:30 | Discussions | |
| 11:30 - 12:30 | Formulation of next steps- plan of action | AU-IBAR |
| 12:30 - 13:30 | Lunch | |
| 13:30 - 16:00 | Presentation of Community practice for web-based information sharing- APRIFAAS | AU-IBAR Webmaster |
| 17:00 | Closing | |

ANNEX 3: LIST OF PARTICIPANTS

EXPERT CONSULTATION ON ROADMAP FOR ESTABLISHING CENTRES OF EXCELLENCE IN FISHERIES AND AQUACULTURE

27 - 28 June 2016, Zanzibar, Tanzania

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