



Fish for All

The NEPAD Action Plan
for the
Development of African Fisheries and
Aquaculture

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Executive Summary

NEPAD recognises the vital contributions by African inland and marine fisheries to food security and income of many millions of Africans and to poverty reduction and economic development in the continent. It further recognises the growing opportunities and emerging successes of aquaculture development in the region. Within the framework of the Comprehensive Africa Agriculture Development Program (CAADP), a series of regional technical consultations were held that identified the primary areas for investment to safeguard and further increase these benefits, together with a first set of priority actions in each. The *NEPAD Action Plan for Fisheries and Aquaculture Development in Africa* describes these investment areas for inland fisheries, coastal and marine fisheries, and aquaculture:

For Inland Fisheries:

- Improving fisheries governance and defining resource access, in particular for the poor
- Enhancing productivity through post harvest management
- Sustaining production through integrated water resource management.
- Supporting transboundary management
- Improving market access, in particular for small-scale producers, processors and traders
- Promoting enterprise development through enabling institutions and policy frameworks
- Strengthening consideration of inland fisheries in national and regional policies and actions on food security

For Coastal and Marine Fisheries:

- Preparation and implementation of long-term fisheries management plans and supportive policies for sustained production
- Building capacity of African countries to harness the full benefits of marine and coastal fisheries
- Improving fisheries governance and participatory management
- Improving management of the coastal and marine environment
- Strengthening the access of African fisheries to regional and international trade in fish products
- Supporting post-harvest activities through adequate investments and policies
- Promoting enterprise development through enabling institutions and policies
- Strengthening consideration given to coastal and marine fisheries in national and regional policies and actions on food security

For Aquaculture:

- Developing sector-wide strategies at national level for expansion and intensification of aquaculture
- Supporting priority aquaculture zones

- Encouraging private sector investment across the sector
- Applying proven technologies to increase production
- Maintaining the competitive advantage that Africa's environment provides for aquaculture production
- Harnessing the opportunities for small and medium enterprise development provided by expanding domestic markets for fish, including growing urban demand
- Supporting the emerging regional trade in aquaculture products
- Harnessing the opportunity of expanding export markets for high-value products to increase investment in African aquaculture production and processing
- Expanding the adoption of integrated small-scale aquaculture as a means of increasing rural productivity and food security
- Exploiting the potential of aquaculture production to contribute to food security programs

If investments are made across these areas it is projected that the stagnating or declining fishery production in the region can be stabilized and in a few cases expanded. By improving processing and access to regional and global markets through improved policies and public-private partnership investments in quality control capacity, market information systems, and sector management, it is expected that their contributions to socio-economic development can be enhanced and diversified. In the case of aquaculture, substantial growth in sustainable production can be achieved.

To guide these investments and enhance sustainability of impact, several cross-cutting areas need to be supported. These include the development of sector-wide strategies for fisheries and aquaculture using economic planning approaches and a comprehensive value-chain perspective. Regional capacity for research and development needs to be strengthened; and technical expertise in the region needs to be supported through networking and improved communications.

It is proposed that implementation of this Action Plan should follow a 'piloting' approach with Fast-track Programs to be identified for immediate action. These should focus on areas of strategic regional importance and current growth and will provide a learning process for subsequent expansion of activities. In addition, it is essential that pertinent lessons and experiences from other regions and sector are effectively applied to accelerate the development of African fisheries and aquaculture.

This Action Plan serves as an Africa-wide framework for developing specific interventions by stakeholders at Regional Economic Community and national levels, taking into account their on-going initiatives and development priorities. This will enable these stakeholders to draw on NEPAD – CAADP for expanding the scope of their successful initiatives, addressing critical capacity and strategy needs, and linking with relevant knowledge and technologies in other regions of Africa.

Table 1: Summary of Priority Investment Areas

NEPAD Objective	Inland Fisheries	Marine Fisheries	Aquaculture
Improved Productivity	<ul style="list-style-type: none"> Improving Fisheries governance and defining resource access, in particular for the poor Enhancing productivity through post harvest management 	<ul style="list-style-type: none"> Preparation and implementation of long-term fisheries management plans and supportive policies for sustained production Building capacity of African countries to harness the full benefits of marine and coastal fisheries Improving fisheries governance and participatory management 	<ul style="list-style-type: none"> Developing sector-wide strategies at national level for expansion and intensification of aquaculture Supporting priority aquaculture zones Encouraging private sector investment across the sector Applying proven technologies to increase production
Environmental Sustainability	<ul style="list-style-type: none"> Sustaining production through integrated water resource management Supporting transboundary management 	<ul style="list-style-type: none"> Improving management of the coastal and marine environment 	<ul style="list-style-type: none"> Maintaining the competitive advantage that Africa's environment provides for aquaculture production
Market Development and Trade	<ul style="list-style-type: none"> Improving market access, in particular for small scale producers, processors and traders Promoting enterprise development through enabling institutions and policy frameworks 	<ul style="list-style-type: none"> Strengthening the access of African fisheries to regional and international trade in fish products Supporting post-harvest activities through adequate investments and policies Promoting enterprise development through enabling institutions and policies 	<ul style="list-style-type: none"> Harnessing the opportunities for small and medium enterprise development provided by expanding domestic markets for fish, including growing urban demand Supporting the emerging regional trade in aquaculture products Harnessing the opportunity of expanding export markets for high-value aquaculture products to increase investment in African aquaculture production and processing
Food Security and Nutrition	<ul style="list-style-type: none"> Strengthening consideration of inland fisheries in national and regional policies and actions on food security 	<ul style="list-style-type: none"> Strengthening consideration of coastal and marine fisheries in national and regional policies and actions on food security 	<ul style="list-style-type: none"> Expanding the adoption of integrated small-scale aquaculture as a means of increasing rural productivity and food security Exploiting the potential of aquaculture production to contribute to food security programs

1. BACKGROUND

1.1 The NEPAD Fish-for-All Initiative

African fisheries and aquaculture are at a turning point. The fish sector makes vital contributions to food and nutrition security of 200 million Africans and provides income for over 10 million engaged in fish production, processing and trade. Moreover, fish has become a leading export commodity for Africa, with an annual export value of US\$ 2.7bn. Yet these benefits are at risk as the exploitation of natural fish stocks is reaching limits and aquaculture production has not yet fulfilled its potential.

Strategic investments are needed urgently to safeguard the future contribution of Africa's fish sector to poverty alleviation and regional economic development. Broadly, investment is needed to (i) improve the management of natural fish stocks, (ii) develop aquaculture production, and (iii) enhance fish trade in domestic, regional and global markets. In support of this investment, capacity needs to be strengthened at regional and national level for research, technology transfer and policy development. As a first step, stakeholders in the region need to build a common and strategic understanding of the importance of fisheries and aquaculture for Africa's development and of the challenges being faced by the sector.

To foster this understanding and help build regional consensus on future investment priorities the NEPAD Fish-for-All Initiative has called stakeholders from the region to participate in a comprehensive consultation process. During the first half of 2005, regional teams of co-authors from a total of ten countries prepared technical review papers on Inland Fisheries, Coastal and Marine Fisheries, and Aquaculture. These papers provided the background for regional technical workshops that were held as follows:

<i>Date</i>	<i>Theme</i>	<i>Venue</i>	<i>Participating African countries</i>
30-31 May 2005	Inland Fisheries	Lilongwe, Malawi	12
8-9 June 2005	Coastal and Marine Fisheries	Dakar, Senegal	11
27-28 June 2005	Aquaculture	Cairo, Egypt	12

These workshops identified priority areas of investments in the sub-sectors and discussed initiatives and partnerships within these. Their discussions and recommendations form the basis for this Action Plan.

The global Fish-for-All initiative is designed to build greater international commitment to addressing the challenges facing fisheries and aquaculture, and in Africa works in support of NEPAD's development agenda. It builds upon global agreements such as the WSSD targets and the Code of Conduct for Responsible Fisheries to support NEPAD in seeking to harness the contribution

of Africa's fisheries and aquaculture to the economic and social development across the continent. In so doing Fish for All supports NEPAD's role as a catalyst and facilitator of Africa's socio-economic transformation agenda by bringing together key stakeholders from AU member states, Regional Economic Communities, civil society, scientific institutions and international organisations.

1.2 African Fisheries and Aquaculture

Africa currently produces 7.31 million tons of fish each year. Of this 4.81 million tons is from marine fisheries, and 2.5 million tons from inland fisheries. While capture fisheries rose steadily throughout the 1980s and 1990s they have stagnated since then, reaching about 6.85 million tons in 2002. Aquaculture on the other hand has risen, but slowly, and only in Egypt has growth achieved rates of increase seen in other parts of the world, rising from 85,000 tons in 1997 to over 400,000 tons in 2004. These trends combined with population growth mean that per capita consumption of fish in Africa is low and stagnating, and in sub-Saharan Africa specifically per capita consumption has fallen in the past twenty years. In a recent study by IFPRI and the WorldFish Center analysis of future demand and supply of fish suggested that if per capita consumption is to be maintained at present levels up to the year 2020, capture fisheries will need to be sustained and where possible enhanced, and aquaculture developed rapidly, with an increase of over 260% in sub-Saharan Africa alone over the course of the next 16 years.

While these trends underline the enormous internal demand for fish in Africa, they also highlight both the importance of managing capture fisheries more effectively so that their full development potential can be achieved and sustained, and the urgent need to foster more rapid development of aquaculture. For capture fisheries there is growing recognition that improved governance systems for fisheries resources and better management of the resource base upon which they depend are needed for sustainable use, while carefully targeted investments in infrastructure and marketing are needed if the full value of these resources is to be realised by the local, national and regional economies.

In addition studies by FAO have shown that there is considerable physical potential to respond to the growing demand for fish by improving aquaculture production. For SSA alone it is estimated that 9.2 million km², or 31 per cent of the land area, is suitable for smallholder fish farming. If yields from recent smallholder development projects can be replicated elsewhere, only 0.5 per cent of this area would be required to produce 35 per cent of the region's increased fish requirements up to the year 2010. At present however this potential for aquaculture remains largely untapped. By 2002 total aquaculture production in SSA was only 79,500 t, 0.15 per cent of world production, yields in most countries remain low, commercial operations have yet to develop in many areas, and fish farmers are relatively few in number. However, the main economic parameters are starting to change and opportunities for aquaculture

are opening up. With growing urbanisation, improved market integration and the concurrent supply crisis from capture fisheries, small and large scale investors are gaining interest in aquaculture production. There is urgent need to develop guidelines and policies that create a conducive aquaculture investment climate and at the same time provide safeguards against environmental and social risks.

Trade in fish products has increased substantially over the past two decades and African fish exports were valued at US\$ 2.7 billion in 2001, from a total global value of US\$ 56 billion. Much more can be done to foster markets for African fish products, both within the region and globally. In several countries, fish exports to European and other overseas markets are now contributing significantly to national economies. In a relatively short time, the fish processing and exporting industry has acquired access to tightly regulated markets by meeting international HACCP and SPS standards. There is great potential to learn from these success stories and build the capacity of a wider spectrum of small and medium-sized enterprises to participate in these growth opportunities.

At the same time, trade relations with importing countries need to develop further to stimulate the growth of value-adding industries in Africa. In marine fisheries, arrangements that regulate the access of foreign fleets to African fish stocks need to be considered from a long-term perspective on fish supply and economic development opportunities. Though the export of fish from Africa is an important economic activity for many countries, marketing fish locally needs to be encouraged as this will contribute significantly towards the reduction of hunger and malnutrition as highlighted in the Millennium Development Goals. Clearly, the implications of accelerated fish trade for poverty and food security need to be fully understood so that the potential of trade as a stimulus to fisheries development can be effectively harnessed. Importantly, this will include increased attention to domestic and regional markets in addition to exports to industrialised countries. Trade of fish between African countries is an important if often unreported sector that provides affordable fish products to millions of consumers across the continent. It is estimated to absorb up to 50% of fish catches in some inland fisheries and it is widely acknowledged that better processing, improved transport and marketing, and more conducive regional trade relations could increase the contribution of this trade to the regional economy and food security. Gaining a wider and more balanced perspective on opportunities for trade at all levels will be an important step towards maximising the development impact of fish exports to regional and global markets.

2. FISHERIES AND AQUACULTURE IN THE NEPAD PROCESS

The NEPAD process prioritises key areas of agricultural and commercial development for accelerated implementation. Several among them intersect with fisheries and aquaculture development. In the agriculture pillar, the *Comprehensive African Agriculture Development Programme (CAADP)* has identified four strategic thrusts:

- (i) extending the area under sustainable land management and reliable water control systems;
- (ii) improving rural infrastructure and trade-related capacities for market access;
- (iii) increasing food supply and reducing hunger; and
- (iv) agricultural research, technology dissemination and adoption.

In all four areas, fisheries and aquaculture have achieved successes at local and national levels that can be scaled up regionally. Aquaculture has proven to improve water management practices at community and farm level, thus increasing returns from crop production in drought prone regions in southern Africa. Marketing of fish products, especially from small-scale capture fisheries, has opened many remote areas to wider markets, in the process enhancing market involvement of rural producers. Fish also contributes substantially and cost-effectively to nutrition security by supplying protein and other vital nutrients to the diets of 200 million Africans. Finally, aquaculture research, technology development and transfer are making a growing contribution to increasing fish supply and have the potential to widen their impact substantially in future. The recent success of commercial aquaculture in Egypt, which today contributes 50% of domestic fish supply, exemplifies opportunities for transferring such technologies within Africa.

With growing demand for fish and stagnating supply figures, there is an urgent need to now build on these success stories in developing a regional approach to fisheries development. In its efforts to identify opportunities arising from particular sectors and initiatives, the CAADP Action Plan has recognised the importance of fisheries in the region and the potential for development of aquaculture. There is considerable potential to include a plan for Fisheries and Aquaculture Development amongst the “flagship programmes” of the Action Plan to further guide the fisheries sector’s key contributions to the CAADP priorities.

In doing so fisheries development can also contribute to objectives and programs in other NEPAD pillars. The *NEPAD Market Access Initiative* emphasizes the competitiveness of African economies in global markets and the enhancement of intra-African trade. In both areas, fish has become a leading commodity, with an export value of US\$ 2.7bn annually for Africa as a whole. The full potential for a vibrant fish trade in and beyond Africa has, however, not yet been realized. With fish demand projected to rise substantially on the continent as well as globally, the long-term prospects for African fish products are very promising. Building on the successes of fish processors and exporters in several countries, the private sector is now presented with tremendous opportunities in capture fisheries as well as the aquaculture sector. Further investments need to be directed towards assessing fish supply and demand trends, developing conducive fish trade policies, improving market infrastructure, and building capacity among fish producers and processors for continued technical innovation, market exploration and self-regulation. These

investments should include public-private partnerships that will support business development across the continent while also safeguarding wider poverty reduction objectives through involvement of small-scale entrepreneurs and attention to regional markets.

Further, the *NEPAD Environment Action Plan* has prioritised the ‘conservation and sustainable use of marine, coastal and freshwater resources’ as well as ‘cross-border conservation or management of natural resources’. Both objectives are of critical importance to the future of fisheries and aquaculture. Investments into developing environmental safeguards for the expansion of aquaculture and improving management of wild fisheries resources will be key contributions by the fisheries sector to overall environmentally sound management of aquatic resources.

Table 2 summarises the current and potential future contributions of inland fisheries, coastal and marine fisheries, and aquaculture to the strategic objectives of these NEPAD programmes.

Table 2: Contributions of Fisheries and Aquaculture to NEPAD Strategic Objectives

NEPAD Strategic Objectives	Inland Fisheries	Coastal and Marine Fisheries	Aquaculture
The Comprehensive African Agriculture Development Programme (CAADP)			
<i>Pillar 1: Extending the area under sustainable land management and reliable water control systems</i>	Improve integrated water management at basin and community levels; increased water productivity; livelihood support to resource poor populations; broaden income base of communities	Long-term management plans for coastal and marine resources; need to rationalise economic costs and benefits of controlling fishing effort; scope to improve and diversify benefits for local and regional stakeholders	Improve water management practices at community and farm level, increasing returns from crop production in drought prone regions in southern Africa, improving viability of investment
<i>Pillar 2: Improving rural infrastructure and trade-related capacities for market access</i>	Marketing fish products, especially from small-scale fisheries, has opened many remote areas to wider markets; enhancing market involvement of rural producers; potential for further market development exists	Products from coastal and marine fisheries reach local, regional and global markets; in many countries they are main export commodities; significant investments in processing, marketing and related industries have spurred wider commercial development	Marketing fish products, also from aquaculture, with infrastructure development, has opened many remote areas to wider markets, enhancing market involvement of rural producers
<i>Pillar 3: Increasing food supply and reducing hunger</i>	Inland fisheries provide fish products to many millions of Africans, reaching food insecure populations with affordable products; well established regional distribution networks	Coastal and marine fisheries provide over 60% of African fish; coastal fisheries feed millions of small-scale fishers and consumers; well-established local, urban and regional trade	Small and medium-scale enterprises provide affordable fish products to rural and urban consumers. Integrated systems also increase crop and livestock production
<i>Pillar 4: Agricultural research, technology dissemination and adoption</i>	Research into integrated water management and water productivity of growing significance beyond fisheries sector;	Research into Coastal Zone Management and Marine Protected Areas has scope for Africa-wide application and	Success of commercial aquaculture in Egypt, now at over 50% of domestic fish supply, suggests good

NEPAD Strategic Objectives	Inland Fisheries	Coastal and Marine Fisheries	Aquaculture
	postharvest technologies offer further scope for R&D	technology transfer; sustainable fishing gear and post-harvest technology development of growing importance as catch limits are being reached	opportunities for regional technology transfer. Innovations in biotechnology of potential importance for the wider agriculture and food sector.
Market Access Initiative			
<i>Strengthen regional economic integration through intra-African trade; diversification of product range, especially for agricultural products</i>	Inland fisheries products widely traded between African countries; wide participation of women; product range is changing; scope for expansion not fully explored	Products from small-scale and industrial fisheries important regional commodities; removing regional barriers to trade can further strengthen regional markets	Resource base may provide key global advantages, internal markets also expanding. Full potential not yet realized.
<i>Enhance access and competitiveness of African products in global markets</i>	Examples of international exports from inland fisheries (e.g. Nile Perch from Great Lakes); increasing global demand provides further scope for investment in export capacity; opportunities for targeting niche markets	Marine products provide bulk of African fish exports valued at US\$ 2.7bn/yr; preferential access to some markets, but to be reviewed; target markets are shifting and larger south-south trade expected	Global demand to rise substantially, long-term prospects very promising. aquaculture plays minor role but could add 20-30% if developed, mainly with higher value products. Aquaculture product can link with fish process/trade networks, particularly high value, traceable products.
Environment Action Plan			
<i>Conservation and sustainable use of marine, coastal and freshwater resources'</i>	Inland fisheries key component of integrated water management; significant investments and capacity in improved fisheries management benefit overall environmental management; fisheries production offers incentive for sustainable resource use	Fisheries is a main user of coastal and marine resources and offers effective entry point for investing in sustainable use; with production reaching limit, these investments become critical for future of fisheries; Marine Protected Areas a key conservation tool	Sector development would increase use of resources – land, water, possibly impact biodiversity, but good strategies and well managed systems could deliver benefits without unacceptable impacts
<i>Cross-border conservation or management of natural resources</i>	Most large inland water systems cross national borders; ecosystem approach increasingly adopted; transboundary management mechanisms emerging	Large Marine Ecosystems and many economic important fish stocks require cross-border management; regional fisheries bodies provide fora for coordination	Role of aquaculture in major shared water bodies and catchments – environmental capacity, aquatic animal health, and biodiversity

In view of these multiple contributions to the NEPAD agenda there is growing recognition that fisheries and aquaculture can provide an important area for investments in pursuit of the NEPAD objectives and of the broader Millennium Development Goals. If this investment is to achieve an effective return it will however need to be targeted carefully at those priorities that will have maximum short and medium-term impact while leveraging longer-term action and investment by the private sector. This will in turn need to be underpinned by

major investments to build capacity for planning, research and technology transfer through a strengthened network of training and research facilities around the continent. In recognition of these needs the Action Plan for the Development of African Fisheries and Aquaculture identifies primary areas for investment for inland and marine fisheries, and for aquaculture, together with priority actions for each. These investments are presented according to four themes of Improved Productivity, Environmental Sustainability, Market Development and Trade, and Food Security and Nutrition, reflecting the strategic thrusts of NEPAD's programmes. Ultimately the specific priorities for each REC and each country will need to be decided at regional and national level. The Action Plan is however designed to guide this debate and encourage international investment in support.

3. THE ACTION PLAN

The overall technical objectives of the Action Plan are:

- 1. To support, and where possible increase, the long-term productivity of African fisheries and aquaculture through sustainable use of aquatic resources and application of environmentally sound technologies;*
- 2. To strengthen food security and trade benefits for Africa's socio-economic development through improved access of African fish products to domestic, regional and international markets.*

3.1 Inland fisheries

Context

Africa's inland fisheries play a critical role in supporting the livelihoods and food security of millions of people across the continent. They provide employment and income for households dependent on fishing and post-harvest activities, and provide the principal source of animal protein and essential micronutrients for millions of rural and urban-based poor. Yet catches from most inland fisheries have generally reached their maximum capacity, and in many are now declining. Many of these fisheries are considered to be over-fished, while the ecosystems that sustain them are threatened by eutrophication, deforestation, dams and other water management schemes. In the next three decades increasing competition for water will be a major challenge for these fisheries.

With the exception of semi-industrial fisheries in a few large lakes and reservoirs, the level of private and public investments directed to Africa's inland fisheries is remarkably low. Yet, in regions where inland fisheries and related activities are present, the potential contribution of these activities to the decentralised economic development process is substantial. To unleash this potential, an appropriate level of policy support and investments is required in different domains, including infrastructures and landing facilities, but above all

activities aiming at reducing the high rate of postharvest losses that severely hampers the development of the African inland fisheries.

Improved Productivity

Investment Area 1. Improving fisheries governance and defining resource access, in particular for the poor

The social and environmental sustainability of most of Africa's inland fisheries, and the realisation of their full development value, will only be achieved through more effective and equitable and governance arrangements. Of particular concern is the general under-representation of fishing communities in the decision-making process in both local and national political arenas. In order to address this requirement, governance mechanisms and processes need to be strengthened at all levels. Simultaneously the capacity of all stakeholders needs to be strengthened, in particular that of rural fishing communities. Effective participatory planning processes involving all legitimate stakeholders (local community, private sector) and leading to sustainable co-management frameworks need to be put into places and supported with appropriate legislation.

Action points:

- Build capacity of key stakeholders at all levels to engage effectively in improved governance arrangements for inland fisheries
- Analyse property rights arrangements at local level and encourage the development of adapted equitable property rights frameworks
- Pursue the implementation of fisheries co-management plans that include all fisheries key-stakeholders
- Create accountable governance structures at the decentralised level to supervise the fisheries management operations characterised by transparent mechanisms of control and audit
- Develop cost-effective information systems that can support improved governance

Investment Area 2. Enhancing productivity through post harvest management

The productivity of African inland fisheries can be increased substantially by improving post harvest management. Africa's inland fisheries are characterized by a very high rate of postharvest losses that affect most particularly small-scale operators (fishers and traders). Often, simple and cheap post-harvest technologies exist which could dramatically reduce the quantities of fish-product lost. Further development and widespread application of these technologies would have a major impact on the livelihoods of hundreds of thousands of producers and millions of consumers. Similarly the development of post harvest activities is largely impeded by the very limited number of decent landing sites and investments to rehabilitate the infrastructure of the existing sites and to develop additional ones are required. Private and public investments are

urgently needed in those domains to increase the productivity of inland fisheries across Africa. In addition the majority of small-scale processors are unable to develop their business and to adopt better processing techniques simply because they lack access to financial systems which would allow them to invest. Providing, and facilitating the establishment of formal and informal financial supports for the post-harvest sector is a priority for Africa's inland fisheries.

Action points:

- Strengthen public and private investments in postharvest (processing and trading) infrastructures
- Invest in road and transport systems to improve accesses between major fishing areas and urban centers
- Identify technologies for improving processing in specific fisheries and build capacity through PPP to disseminate and use these technologies
- Develop the appropriate institutional conditions to stimulate the creation of viable long-term formal and informal financial systems to support small-scale processors and traders

Environmental Sustainability

Investment Area 3. Sustaining production through integrated water resource management.

The long-term productivity of Africa's inland fisheries is dependent on maintaining the ecosystems on which these fisheries depend. These are however under widespread pressure from land and water management practices that are steadily reducing the availability and production of these systems. If Africa's inland fisheries are to be sustained over the coming decades fisheries stakeholders will in particular need to engage with other water-users at all levels of decision-making, in particular with regard to interactions with irrigated agriculture and hydro-power sectors. Investments in land and water management that sustain aquatic resources (including inland fisheries) are urgently needed, together with water governance that provides for full integration of inland fisheries priorities in water resource management. These investments will need to be rooted in a better appreciation of the fisheries resources and their specific contribution to economic development in different river basins.

Action points:

- Build capacity of planners and managers at national and local levels to integrate fisheries priorities into integrated water resource planning and management
- Develop and implement decision support tools for land and water management that incorporate the needs of fisheries and the freshwater ecosystems that sustain them, and strengthen the capacity of decision makers to implement them
- Undertake assessments and valuations of major inland fisheries and contribute this information in support of improved water management

- Strengthen the capacity of tertiary and research institutions in Africa to provide science and training services required for better water resource planning and management
- Implement cost-effective and sustainable information monitoring systems that provide information to all major stakeholder groups
- Identify priorities for biodiversity conservation in Africa's inland waters and identify actions to address these
- Identify weaknesses in enforcement for freshwater management and actions to address these

Investment Area 4. Supporting transboundary management

Many of Africa's inland fisheries are transboundary resources. The long-term sustainability of these fisheries is dependent on maintaining the freshwater ecosystems on which they depend. These sustainable management plans, however, require collaboration across national and state or provincial boundaries. Capacity to initiate or pursue such approaches needs to be developed and institutions that can foster this supported.

Action points:

- Support regional and basin-wide fisheries bodies to manage shared resources
- Raise awareness amongst planners and decision-makers at regional level to integrate fisheries concerns into land and water management
- Pursue ecosystem-based approaches to river and watershed planning and management
- Improve capacity building (including training for strategic and cross-sectoral planning)
- Develop basin-wide monitoring and information systems and promote establishment of compatible legislative frameworks across basin and between sectoral management agencies

Market Development and Trade

Investment Area 5. Improving market access, in particular for small-scale producers, processors and traders

The full potential of Africa's inland fisheries will only be realized when artisanal fishers and small-scale traders have much improved access to markets for their produce. In order to improve this, multiple investments are required to develop market information systems at both national and regional levels and build capacity to understand and adapt to those market dynamics. Investments are also necessary to improve market infrastructures and communication and transport networks. These interventions need to be supported by increased promotion of fish and fisheries products in international, regional and local markets, and the development of policies and regulations that can help foster this trade, including the formalization of the currently significant informal regional trade. In addition the reduction of transaction costs at all levels including the

removal of tariff barriers and elimination of all forms of illegal (informal) taxations systems need to be implemented. Finally to ensure that the benefits of markets and trade are shared, more accountable and transparent institutions will need to be developed that allow all size operators to benefit from their support and services.

Action points:

- Develop market information systems and strengthen market research and development capacities
- Promote fish and fisheries products in international, regional and local markets
- Assess regional fish trade in order to identify current and potential internal African market opportunities
Provide support to artisanal fish processors and traders, in particular women entrepreneurs, to further develop their enterprises
- Reform policies and regulations to encourage formalization of informal regional trade
- Elaborate guidelines for eco-labeling of inland fisheries products
- Develop competency of testing laboratories and quality control authorities, and develop legal / institutional frameworks to support certification processes
- Prepare and negotiate market access jointly during WTO negotiation rounds and international discussions on SPS and TBT agreements

Investment Area 6. Promoting enterprise development through enabling institutions and policy frameworks

If the economic opportunities offered by African fish trade are to be realized fully, training for enterprise management, marketing strategies and organizational capacities will need to be provided to the fishers and the full range of operators along the marketing chain. In addition a specific effort will have to be made to facilitate the access to financial institutions, in particular for the small-scale operators and the local grass-root organizations that support these small-scale operators. As part of the improvement of access to credit and financial support, special attention needs to be given to addressing the 'remoteness' of financial institutions that are often located hours or days away from the rural fish-farmers or fishers communities. Finally provision of facilities such as electricity and water to remote fishing communities will bring direct health benefits but also indirect benefits through the improvement of the economic performance of micro and larger-scale enterprises.

Action points:

- Develop and finance training for enterprise management and marketing strategies along the marketing chain
- Strengthen the organisational and institutional capacities of producers organisations
- Support fisher and trader associations and professional organisations to access and manage credit

- Introduce mobile financial services and develop appropriate financial services for different enterprises along the marketing chain
- Ensure provision and improvement of utilities in fishing communities

Food Security and Nutrition

Investment Area 7. Strengthening consideration of inland fisheries in national and regional policies and actions on food security

The role of fish as a major source of animal protein and micronutrient is now increasingly well documented internationally. Yet this has so far not been reflected in the integration of fisheries into Africa's national food policy frameworks. To achieve this the contribution of fish to food and nutritional security needs to be better appreciated by senior decision-makers and planners at national level and supported through more adequate and coherent policies at both national and regional levels. These need to address how Africa's fish resources can best contribute to food security through better processing and marketing of locally produced fish, while also seizing opportunities to generate income through export of higher value species to international markets. In addition the role of imports of low value fish needs to be considered.

Action points:

- Document and communicate the real contribution of inland fisheries to regional, national and local food security
- Identify national and regional policies that promote better management of inland fisheries as a contribution to enhanced local and national food security
- Promote fish consumption in areas where it can provide a source of cheap protein
- Develop safety standards that recognise the different requirements of export and local markets.

3.2 Coastal and Marine fisheries

Context

Coastal and Marine fisheries provide over half of Africa's fish production. As efforts are made to increase the contribution of fisheries to the continent's development it is essential to sustain and where possible enhance the benefits these fisheries provide. This will require considerable investment at multiple levels to address the increasing challenges faced by coastal and marine fisheries and the conflicts these generate, while a wide range of innovative investments are needed in order to, where possible, add value to the resources that are harvested.

Improved Productivity

Investment Area 1. Preparation and implementation of long-term fisheries management plans and supportive policies for sustained production

With few exceptions, the coastal and marine resources of the African continent are fully exploited and in many places signs of significant over-exploitation and resource degradation are evident. Population pressure and urbanisation of the coastal areas play an important role in this dynamic, but overcapacity of industrial fleets and artisanal coastal fisheries remains the major factor driving resource degradation. In recent decades, competition for scarcer resources has also led to increasing conflicts amongst users, in particular between local fishers and larger-scale off-shore industrial fleets. However increasingly these conflicts have taken on a regional dimension. To address these issues long-term fisheries management plans are needed at regional, national and local levels. These need to recognise that the transboundary nature of many stocks and the migratory feature of many fishing communities require a more collaborative approach between countries. This will in particular require harmonization of laws and institutional frameworks, and the overall approach will need to be underpinned by major investments in capacity building, including in particular for policy and implementation of Monitoring, Control and Surveillance (MCS) measures. In many cases these management plans will need to address the politically and socially difficult process of reducing fishing effort in both large-scale and artisanal fisheries. The ecological sustainability and long-term economic viability of the entire fisheries sector depends on these necessary reforms.

Action points:

- Develop long-term bi-lateral and regional fisheries management plans for major marine fisheries, including recognition of the role and contribution of small-scale coastal fisheries
- Harmonize laws and institutional frameworks amongst countries and agencies and conduct audits to ensure conformity with management objectives
- Strengthen planning capacity at all levels through African regional collaboration backstopped by international agencies' technical support
Support emerging regional networks of technical and managerial expertise in order to provide regional learning platforms and mechanisms for knowledge sharing
- Raise high-level political awareness about the critical importance of effective MCS, and strengthen the capacity to implement these MCS at national and local levels, in particular to support implementation of existing action plans on Illegal, Unregulated and Unreported (IUU) fishing
- Identify situations where reduction in fishing effort is required in marine and/or small-scale coastal fisheries and develop approaches to addressing this that are socially and economically viable

Investment Area 2. Building capacity of African countries to harness the full benefits of marine and coastal fisheries

If the full economic and social benefits of Africa's coastal and marine fisheries are to be harnessed there is an urgent need to invest in overcoming the key bottlenecks that currently impede these fisheries. At present an important part

of the fish harvested from African waters is neither caught by African boats nor processed within the continent. There is broad consensus that the capacities to reverse this situation need to be developed and investments to support this made. This will require public and private sector investment in boats and processing capacities, and the general infrastructures of roads and ports to support this. These substantial investments will necessitate strong political support at national, regional and pan-African levels. At the local level, reliable and affordable credit facilities is a critical element in particular for small-scale operators, as will be strengthened resource access rights for coastal fishing communities. Mechanisms for reinvestment of fisheries revenues through direct and indirect public investments supporting the specific needs of fishing communities will reinforce this.

Action points:

- Raise high-level political awareness of the importance of coastal fisheries for local economic development
- Create national legal frameworks that are adapted to the specific conditions of local fishing communities and that allow equitable resource access rights
- Build Africa-wide capacity to 'catch and process its own fish'
Review existing foreign access agreements and assess their impact on national and regional economic development and food security objectives
- Encourage investments in value-added industries through conducive trade and market access conditions for value-added products from Africa
- Assess the impact of large-scale operations and fully evaluate the long-term impact of policies supporting foreign fleets agreements
- Ensure that revenues and economic rent generated by the sector are reinvested into development interventions with a strong focus on fisheries sector priorities
- Modernise and upgrade existing landing site infrastructures and invest in new ones both in rural and urban coastal areas
- Improve access to enduring financial institutions for the fishing sector and access to credit at single-digit rates

Investment Area 3. Improving fisheries governance and participatory management

Improved governance in fisheries will provide the context for long-term economic growth and better management of the resources. To achieve this laws and legislative tools which allow for better representation of the different stakeholder groups in the decision making processes are required. These legislative processes should be combined with mechanisms which increase the transparency of decision-making at all levels and the accountability of those individuals and institutions whose actions impact the livelihoods of fishing communities. Specific efforts will be needed to pursue greater participatory fisheries management through co-management reforms at national and local levels. This should include the strengthening of institutional mechanisms supporting decentralisation reforms and in particular building up capacity for stakeholder consultation and participatory planning. As part of a larger capacity building scheme, the development and implementation of plans for information

transfer, communication, and education at all levels is essential. These plans should include mechanisms for sharing learning between countries and integrating lessons from other regions.

Action points:

- Institutionalize and reinforce participatory management approaches in both national and local fisheries agencies
- Strengthen institutional and legal mechanisms for co-management and build capacity for consultation and participatory planning
- Develop and implement plans for information transfer, communication, and education
- Improve governance processes through supportive laws and legislative frameworks and through establishment of mechanisms to increase transparency and strengthen accountability of both public and private institutions
- Conduct audits of institutions and align them with management and conservation realities

Environmental Sustainability

Investment Area 4. Improving management of the coastal and marine environment

The sustainability of coastal and marine fisheries is dependent on maintaining the integrity and productivity of the coastal and marine environments on which these fisheries depend. In order to achieve this future investments in coastal and marine fisheries need to be supported by investments in integrated coastal zone and marine management that take account of the interactions within the sector between small-scale and larger-scale fisheries and between the fisheries sector as a whole and other domains impacting the resources such as tourism, land and water management, urbanization, and industrial development. In doing so non-governmental and community-based organisations, and other key stakeholders need to be integrated into the planning and implementation stages of these new integrated management plans. This should also include the establishment and legal strengthening of rights-based management systems to address issues of access and ensure that those systems remain equitable for all users. This needs to be supported by increased capacity for Monitoring, Control and Surveillance (MCS) which will help enforcing rights and fish management regulations and reduce the use of destructive fishing practices. The contribution of Marine Protected Areas (MPAs) also needs to be considered and promoted where appropriate.

Action points:

- Develop and implement integrated coastal zone management plans (including the use of MPAs)
- Implement multi-disciplinary ecosystem-based assessment and develop integrated data management systems

- Strengthen the capacity of tertiary and research institutions in Africa to provide science and training services required for better planning and management of coastal and marine resources
- Promote NGOs and CBOs participation in the preparation and implementation of integrated coastal zone management
- Create and strengthen equitable right-based management systems including limited access/ permits
- Develop management instruments and tools including effective MCS and promote the use of less destructive fishing practices
- Strengthen linkages among finance and management institutions in fisheries and environment

Market Development and Trade

Investment Area 5. Strengthening the access of African fisheries to regional and international trade in fish products

If Africa is to harness the full development benefits of its marine fisheries considerable investment to develop regional and international trade in fish products is required. This will require the further negotiation of fair and equitable fishing agreements, and more effective consideration of African fishery priorities and constraints within global trade negotiations processes such as those led through WTO and CODEX. This should be facilitated by the development of more closely harmonized positions on issues of fisheries agreements and fish trade, as well as a stronger institutional and policy environment that supports fish trade within the region. At the technical level capacities for quality control and certification need to be developed and strengthened. In this effort to develop fish trade it will be essential to improve access of small-scale coastal fishers to the regional and international fish-trades.

Action points:

- Accelerate regional integration initiatives through stronger collaboration between national institutions and the support of RECs
- Negotiate favourable fisheries access agreements under various conventions
- Strengthen individual and collective negotiation power through a harmonization of African positions in global trade negotiation fora such as WTO and CODEX
- Strengthen control capacities for sanitary, certification and labelling at national level (for legislative issues) and at provincial level (for implementation issues)
- Develop a more enabling and stimulating institutional environment to strengthen regional fish trade and ensure a fair redistribution of these trade benefits
- Design policy frameworks that support investment by Africans in the processing and trade of Africa's fish products

Investment Area 6. Supporting post-harvest activities through adequate investments and policies

If trade of fish from Africa's marine waters is to be increased and contribute to both national and local economies an efficient post-harvest sector needs to be developed. This will require the development of improved infrastructure and equipment (roads, ice, landing sites, cold rooms) and public sector investment will need to provide this in most cases. The private sector also has a crucial role to play in the investment and management of postharvest operations and Public-Private Partnerships (PPP) should be encouraged to expand Research and Development in particular in relation to technology innovation and dissemination and technical support (extension) services. To allow the vast majority of fish traders and processors (amongst which a very large proportion of women) to benefit from the economic wealth created by fish trades at local, national, and regional levels, mechanisms need to be established to facilitate the access to financing facilities, in particular credit and micro-finance.

Action points:

- Increase the private sector's support and involvement in research and extension services while ensuring the competitiveness, accountability and quality-driven nature of the process through an adapted and flexible legislative framework
- Improve infrastructure and equipments through appropriate public and private investments (e.g. roads, ice, landing sites, cold rooms)
- Provide support to artisanal fish processors and traders, in particular women entrepreneurs, to further develop their enterprises
- To reduce the rate of discard and improve utilization of 'by-catch'
- Expand research and development for post harvest technology through Public Private Partnerships
- Strengthen financing mechanisms, in particular credit and micro-finance, with a particular attention to the specific legal and institutional constraints faced by women

Investment Area 7. Promoting enterprise development through enabling institutions and policies

African coastal fisheries, and in particular artisanal fisheries together with the small-scale processing and trading enterprises that are associated to these fisheries, display a number of comparative economic and social advantages which provide the sector with a particularly strong opportunity to drive poverty alleviation and local economic development. However in order to seize these opportunities there is an urgent need for investment from both the public and private sectors. This will need to recognize that most of the small-scale operators who are involved in fisheries or processing and trade lack education and many of the basic skills to run and manage their enterprise. Programmes and initiatives which will help and support those operators to acquire indispensable managerial skills and capacities are urgently required for a pro-

poor investment in fishery enterprise development. This needs to be supported by the development of more reliable, low cost input supplies and services.

Action points:

- Promote the development of Public-Private Partnerships in support of investments in coastal and marine fisheries, and develop tools and capacity for monitoring their economic development and food security impact
- Develop policy frameworks which support and protect the comparative economic and social advantages of small-scale coastal fisheries
- Develop training programmes that strengthen fishers and traders' capacities for enterprise management
- Promote public and private investments in the fisheries sector and develop investment codes which specifically address constraints faced by small-scale entrepreneurs
- Expand and support research and development for fisheries and processing input supplies

Food Security and Nutrition

Investment Area 8. Strengthening consideration of coastal and marine fisheries in national and regional policies and actions on food security

Coastal and marine fisheries play a central role in the food and nutrition status of many African countries. This needs to be recognised and policies developed and enforced to ensure that this role is sustained. Despite increasing quantities of fish traded in the world, per capita fish consumption in Africa is projected to decline from 6.7 to 6.6 kg by 2020, driven by increasing population and declining incomes. To reverse this trend the contribution of marine fisheries to food and nutritional security needs to be better appreciated by senior decision-makers and supported through more adequate and coherent policies both at national and regional levels. In this context the substantial volume of "low-value" fish that is traded within Africa, and its role in the nutrition of poor (especially urban) communities, needs to be recognised. In the face of growing global demand for fish it is urgent that ways are identified to manage this trade in "low-value" fish for the continued benefit of Africa's poor.

Action points:

- Design and enforce national and regional level policies and legislation that promote and support the contribution of fish to food and nutrition security
- Support the development of intra-Africa commercialisation and trade of low-value fish products
- Promote fish consumption in areas where it can provide a source of cheap protein
- Support market research and better use of existing information sources on national and regional fish trades.

3.3 Aquaculture

Context

Aquaculture has grown strongly in most regions of the world where the potential exists. This has not happened in sub-Saharan Africa, and Egypt is the only African country to have achieved the scale of change observed elsewhere. However there is now growing recognition that aquaculture in Africa can develop under specific conditions and contexts, and that the prospect of market-led growth and broader regional integration, together with more realistic understanding of the technical potential, provides substantial opportunities for growth.

This realisation has promoted considerable development investment and sectoral promotion at both regional and national levels. The availability of natural resources and the opportunities for entering valuable export markets have also led to private investment initiatives, often with external capital, in wholly owned enterprises, or joint ventures. In many circumstances, local private investment has also been considerable, often by artisanal farmers, community development association and local businesses, with expectations of meeting local demand and diversifying household income. The challenge being addressed now in many countries is how best to foster this growth.

Improved Productivity

Investment Area 1. Developing sector-wide strategies at national level for expansion and intensification of aquaculture

The importance of having a viable sector strategy at national level is increasingly realised. Based on a better understanding of the structure of the sector, this involves targeting support to the different needs and strengths of small, medium and large scale aquaculture enterprises. The role of private sector investments in pursuing such a strategy is a key issue that will decide on the level of growth and sustainability of support services. In doing so it is essential that available experience and lessons from other regions are being utilized to drive the development of aquaculture in Africa. This applies in particular to other developing country experience in areas of production, environmental management, trade relations, market development and public private partnerships. One of the limitations of past approaches in Africa has been the neglect or ineffective use of this knowledge base. On the basis of regional cooperation through RECs and NEPAD, African countries and aquaculture stakeholders can strengthen their international linkages in these areas and use available expertise to build up their own capacity.

Action points:

- Develop national aquaculture sector strategies based on economic planning and value-chain approaches, including targeted strategies for small and medium scale, as well as large scale industry

- Review international lessons on aquaculture sector, in particular from Asia, and their implications for Africa
- Agree among stakeholders on a phased approach to sector development, with immediate action taken up over the next months
- Adopt current standards of valuation and investment planning for the sector at national level
- Establish a regional network of aquaculture policy practitioners, supported by other leading government planning sectors, to accelerate the development of aquaculture strategies and their integration into wider economic strategies at national level

Investment Area 2. Supporting priority aquaculture zones

Aquaculture is not developing evenly across the continent; instead, priority areas with high natural, economic and social potential are beginning to emerge. These include priority resource systems (such as particular lakes or coastal areas), peri-urban zones, areas with existing processing capacity, and clusters of rural aquaculture. These need to be further assessed within the context of regional and ecosystem planning, and immediate support needs to be focused on these areas. Links and synergies with commercial agriculture development need to be pursued, for example for supplying crop-based feeds in large quantities. A process will need to be established for addressing governance issues around competing resources uses and access rights, and monitoring of longer-term impact of such priority zones.

Action points:

- Immediately identify priority zones through rapid assessments, taking into account natural, economic and social factors of growth and innovation
- Supplement this through GIS based surveys of further potential growth areas
- Assess current and future demand for raw materials for feed and fertilizers and pursue linkages with agriculture development for establishing supply-chains for aquaculture
- Review governance and resource access implications of priority zones

Investment Area 3. Encouraging private sector investment across the sector

In response to growing demand for fish products, private sector investment interest has substantially increased in the region. This interest needs to be supported and private investments guided towards sustainable growth. Public private partnerships offer a variety of options to deliver support services and management functions that are critical for sector development, including information, R&D, monitoring, regulatory and financial support. Strategic public investments are justified to improve the policy and legal framework and facilitate exchange and lesson learning across the continent. In advancing and expanding aquaculture, however, the private sector needs to take the leading role, and this needs to be recognised in strategy development and investment planning.

Action points:

- Link aquaculture investors at all levels to national and regional enterprise development programs.
- Review lessons and experiences of public-private partnerships from other sectors and regions.
- Review policy, regulatory and legal frameworks with a view to support private sector opportunities, in particular for small and medium-scale enterprises
- Encourage private-public partnerships in support of research, training and technology development

Investment Area 4. Applying proven technologies to increase production

Technologies for increasing productivity at different levels of investment, expanding aquaculture zones and improving product quality are available from many regions, including Africa itself. Constraints exist in access and application, including purchasing and operating costs, technical skills, disease and other risks in intensive systems, and biosafety concerns in the case of new species. Support is needed to improve information, dissemination, application and risk management capacity in the region. This support area offers significant opportunities for private sector investments.

Action points:

- Immediately identify technologies available in the region with potential for wider dissemination and application, including advances in commercial production in Egypt and in integrated smallholder systems in Malawi.
- Establish and support private sector led technology dissemination and application services.
- Support regional networks of aquaculture service providers, including research and technology dissemination, for scaling-up local and national successes
- Support private sector capacity to deliver advanced monitoring and risk management services.
- Strengthen the capacity of tertiary and research institutions in Africa to provide science and training services required for longer-term technology development, and strengthen their linkages with private sector initiatives

Environmental Sustainability***Investment Area 5. Maintaining the competitive advantage that Africa's environment provides for aquaculture production***

The relatively intact natural environment in most African countries offers a comparative international advantage for Africa as an aquaculture production region. This advantage needs to be fully assessed in terms of resource value, production options and marketing strategies for African aquaculture products. It is important that this 'capital' is further supported through good governance of aquatic and land resources, and that lessons from other regions in the

developing world (in particular Asia) are effectively applied to avoid mistakes and achieve sustainable growth.

Action points:

- Assess competitive advantage of different African environments and product ranges.
- Review lessons and experiences of aquaculture resource degradation from other regions, in particular Asia.
- Identify policy needs and institutional linkages with environmental, water and related sectors at national level.

Market Development and Trade

Investment Area 6. Harnessing the opportunities for small and medium enterprise development provided by expanding domestic markets for fish, including growing urban demand

The widening supply and demand gap for fish in most domestic markets in Africa offers growing opportunities for aquaculture production. There is immediate need to assess the range of products, seasonality and price elasticity and substitution effects in these markets and to target aquaculture production, harvesting and marketing strategies accordingly. In many cases, aquaculture products are not differentiated from capture fisheries products and may therefore miss out marketing advantages and price premiums. Market information, marketing skills and logistics need to improve significantly for aquaculture enterprises to fully utilise this area of opportunity.

Africa is the most rapidly urbanising region in the world, and urban populations have an increased demand for fish. To meet this demand, small and medium-scale aquaculture enterprises are emerging in peri-urban zones, and rural producers are marketing their products increasingly in urban markets. There is growing need, therefore, to assess the full potential and structure of urban fish and food markets and accordingly support peri-urban zones as priority aquaculture areas. Enterprise development in production, support services and marketing, regulatory framework, market infrastructure development are key constraints at this time. Correspondingly, market access for rural producers needs to improve. As urban demand becomes more differentiated, it will become increasingly important to see what segment of the market aquaculture – and fish supply more generally - can target effectively.

Action points:

- Assess the longer-term trends and current structure of domestic supply and demand, including urban demand, product range and price elasticity
 - Support the development of practical market information mechanisms
 - Support small and medium scale enterprises through technical advice and financial services to access local, urban and wider domestic markets with a targeted product range
- Provide enterprise development support to small and medium scale operators to further develop their businesses towards market integration

- Review policy, regulatory and legal frameworks with a view to support further opportunities for small and medium-scale enterprises in production and service industries

Investment Area 7. Supporting the emerging regional trade in aquaculture products

There is immediate need to assess the current structure, volume and economics of fish trade between countries in the region, addressing in particular the 'informal' trade of low-value fish that appears to be a substantial sector supplying food to millions of people and providing very strong business opportunities for women entrepreneurs. Aquaculture products are increasingly entering these trade routes as processed or fresh products, in some cases to be further processed and re-exported in the region and beyond. These market opportunities need to be supported through better cross-border information systems, conducive regulatory and policy frameworks, and enterprise development support targeting women in particular. The RECs will play an important role as coordinating agencies.

Action points:

- Assess and document the current structure, volume and economics of intra-regional trade of low-value food fish
- Support women entrepreneurs in this sector through technical advice and financial services to further invest in postharvest and trade of aquaculture products in regional markets
- Review policy, regulatory and legal frameworks with a view to further strengthen opportunities for women in small and medium-scale enterprises

Investment Area 8. Harnessing the opportunity of expanding export markets for high-value aquaculture products to increase investment in African aquaculture production and processing

The emerging success of African aquaculture exports needs to be further supported through investments in policy, legal frameworks and support services. In particular, capacity has to be strengthened in the region for quality control to meet changing food safety and traceability requirements of import markets. Public private partnerships provide viable options for financing such investments. There are opportunities emerging for small and medium-scale enterprises to participate in aquaculture export trade at various stages in the production and marketing chain, and these need to be supported through enterprise development and linking into niche markets. Options for labelling and certification schemes – including 'organic' production - need to be assessed and experience from other sectors and regions utilised in order to gain a realistic and workable perspective on these instruments. Links with existing export marketing of capture fisheries products are being pursued by individual enterprises. There is also further need to improve information flow on markets, prices and standards to enterprises and investors in the region.

Action points:

- Assess options for public-private partnerships for management and financing of this sector, using experiences from other export sectors and regions
- Where possible, support associations of small and medium-scale enterprises to participate in this sector, based on lessons from other regions and sectors
- Establish a regional aquaculture industry association to facilitate coordination, R&D and market development
- Encourage investments in value-added industries through conducive trade and market access conditions for value-added products from Africa

Food Security and Nutrition***Investment Area 9. Expanding the adoption of integrated small-scale aquaculture as a means of increasing rural productivity and food security***

Successful examples of Integrated Aquaculture Agriculture, raising farm productivity and incomes by combining fish farming with crop, livestock and small-scale irrigation, are available from Southern Africa and need to be scaled up and adapted for the region. This will be a significant contribution to food security among smallholder farmers. To achieve this, scaling-up tools and approaches need to be improved and linked with rural development agencies outside the aquaculture sector, such as NGOs. At a commercial level, options for further intensification of such integrated systems, in particular in combination with irrigation, need to be explored. In addition, opportunities and viability of stocking of dams and small water bodies, in particular in food insecure dry regions, need to be assessed and workable approaches developed.

Action points:

- Immediately identify and apply approaches for scaling-up successful integrated aquaculture practices from Malawi in other countries in Southern Africa
- Support further research and development to intensify these integrated systems and adapt them to new water and land environments
- Support integration of aquaculture and agriculture research and planning in the context of growing investments in irrigation schemes
- Assess the viability of stocking and stock enhancements of dams and small water bodies in food insecure regions

Investment Area 10. Exploiting the potential of aquaculture production to contribute to food security programs

The nutrition benefits from aquaculture - and fish consumption more generally - need to be fully documented and promoted through education and health programs focusing in particular on women as key decision makers. Benefits for vulnerable populations, including children, women and people affected by HIV and AIDS, need to be targeted and small-scale aquaculture production and marketing strategies adjusted accordingly. To spread food security benefits more widely, aquaculture needs to be linked better with food security and school

feeding programs at national or regional level, including NEPAD's programs. Strategically, aquaculture development may be viewed as a long-term investment in food security by increasing levels of control and management of fish and aquatic resources.

Action points:

- Assess and document the nutrition benefits of common fish consumption among vulnerable populations, including women, children and people affected by HIV and AIDS
- Support health and rural development agencies to include promotion of fish consumption into their community programs
- Link small and medium-scale aquaculture enterprises as suppliers with national school feeding programs to improve child health and nutrition

ANNEX 1
Acronyms

CAADP	Comprehensive Africa Agriculture Development Program
CODEX	Codex Alimentarius
FAO	Food and Agriculture Organisation of the United Nations
GIS	Geographic Information System
HACCP	Hazard Analysis and Critical Control Point
IFPRI	International Food Policy Research Institute
MCS	Monitoring, Control and Surveillance
MPA	Marine Protected Area
NEPAD	New Partnership for Africa's Development
NGO	Non-governmental Organisation
PPP	Public-private Partnership
R&D	Research and Development
REC	Regional Economic Community
SPS	Sanitary and Phytosanitary
SSA	Sub-Saharan Africa
TBT	Technical Barriers to Trade
WSSD	World Summit on Sustainable Development
WTO	World Trade Organisation