The Fishing fields: Sustainable aquaculture development strategies for the Commonwealth

29 July 2020
The Fishing fields: Sustainable aquaculture development strategies for the Commonwealth

2:00 PM - 2:05 PM
Opening Remarks
Mr. Jeff Ardron, Adviser - Ocean Governance and Project Lead, Commonwealth Blue Charter, Commonwealth Secretariat

2:05 PM - 2:10 PM
Special Address from the Blue Charter Action Group Champion for Sustainable Aquaculture
Mr. Vassilis Papadopoulos, Head of Aquaculture Division, Department of Fisheries and Marine Research, Cyprus

2:10 PM - 2:35 PM
Presentations by the Speakers
Dr. Malcolm Dickson, Aquaculture Consultant
Mr. Aubrey Lesperance, Principal Aquaculture Officer, Seychelles Fishing Authority, Republic of Seychelles
Mr. Damien Legros, Director, Chicoa fish farm, Mozambique
Dr. Ahmed Nasr-Allah, Aquaculture scientist, WorldFish, Egypt

2:35 PM - 2:55 PM
Question & Answers

2:55 PM - 3:00 PM
Concluding Remarks
We are faced with one of the world’s greatest challenges – how to feed more than 9 billion people by 2050 in a context of climate change, economic and financial uncertainty, and growing competition for natural resources.

and most importantly

We have to achieve this in a Sustainable way
The 2030 Agenda of the United Nations sets aims for the contribution of fisheries and aquaculture towards food security and nutrition in the use of natural resources so as to ensure sustainable development in economic, social and environmental terms.
Aim of the Action group: Develop a strategic roadmap for sustainable aquaculture development that all countries can use in order to develop environmentally compatible, financially viable and socially acceptable aquaculture.

Current Members: Antigua Barbuda, Bahamas, Bangladesh, Barbados, Fiji, Malaysia, Mauritius, Seychelles, Sri Lanka, Trinidad and Tobago.

First AG Meeting: 25-27th February 2020 in Cyprus.

AG ToR (Terms of Reference): were adopted in March 2020.

AG PoA (Plan of Action): ready for discussion and adoption by the members.

Next steps:
- Create an outline of the main areas that will constitute the strategic roadmap by the end of the year.
- Develop a draft roadmap for discussion with the AG Members first half of 2021.
Framework for Aquaculture Development

CYPRUS

by

Vassilis Papadopoulos
Fisheries and Marine Research Senior Officer
Head of Aquaculture Division
Aquaculture History Overview

• Aquaculture started in Cyprus at the end of 1960s with the establishment of a freshwater aquaculture research station and the subsequent development in the early 1970s of private freshwater fish farms.

• In the mid 1970s a Marine Aquaculture Research Station Marine aquaculture was set up which led to the development land-based marine aquaculture farms at the end of 1980s and the first marine offshore aquaculture farm at the beginning of the 1990s.

• Initial aquaculture development was partially covered by fisheries legislation.

• In the mid 1990s the realization of the future potential of this activity and the increasing private sector interest for investment in marine aquaculture, underlined the need for changes and demanded action in order to foster and support the development of this new sector.
Approach and Challenges to Sustainable Aquaculture Development

RESPONSIBILITY

- Financially viable
- Socially Acceptable
- Environmentally Compatible
- Sustainable

Biosphere
- Human Sphere
  - Economics
  - Aquaculture

Time
Main Initial Actions Implemented

• Establishment of Aquaculture Development Policy

  - Sustainable Aquaculture Development became a priority within the policy framework of the Ministry of Agriculture Rural Development and the Environment

• Adoption of a Development Strategy

  - Analysis of the existing situation

  - Defined specific short, medium and long term targets (i.e. number of units, volume and value of production)

  - Identification / proposition of measures and possible incentives to be implemented in order to promote and support the development this activity so as to achieve the predefined targets and objectives
Accomplishments and Outcomes

• This led to the composition and adoption of a specific aquaculture legislation and the relevant regulations in 2000 and 2002 respectively, that set the framework for the establishment, operation and further development of aquaculture activities in Cyprus.

• This legislative framework has provided and still provides for:
  - an important and solid foundation in order to promote and support the development of aquaculture in Cyprus.
  - a secure investment environment
  - transparency
  - the constant monitoring and evaluation of the environmental performance of the aquaculture units
  - the wellbeing of the cultured organisms
  - an inclusive approach
Today in Cyprus there are 9 licensed marine offshore aquaculture units. The current annual production is estimated at approximately 8000 tons of fish (mainly European seabass and gilthead seabream) at a value of approximately €40 million.

Marine aquaculture produce is the third most important export product of the primary agricultural production sector with an annual value of around €27 million.

Marine offshore aquaculture has been the fastest growing food producing sector in Cyprus for the last 15 years with an annual growth rate of 5-7%.

The contribution of aquaculture in the national production of fisheries products represents around 80% in volume and 85% in value.

Aquaculture development remains an important Priority at a political level and is a major pillar of the National Blue Growth Strategy.
Aquaculture Development is a Dynamic Process

It is our responsibility to ensure that aquaculture development and growth will be Sustainable and that it will continue to contribute to food security, by establishing viable businesses, respecting the environment and creating employment opportunities.
Sustainable aquaculture development

PRESENTATION BY MALCOLM DICKSON

THE COMMONWEALTH BLUE CHARTER WEBINAR – THE FISHING FIELDS: SUSTAINABLE AQUACULTURE DEVELOPMENT STRATEGIES FOR THE COMMONWEALTH

WEDNESDAY 29 JULY 2020, 1400-1500 BST
Overview

GLOBAL AQUACULTURE

AQUACULTURE IN THE COMMONWEALTH

SUCCESS FACTORS FOR AQUACULTURE
2018 data:

Aquaculture: 82.1 million tonnes

Fisheries: 96.4 million tonnes

NOTE: Excludes aquatic mammals, crocodiles, alligators and caimans, seaweeds and other aquatic plants.

SOURCE: FAO.
FIGURE 10
CONTRIBUTION OF AQUACULTURE IN TOTAL PRODUCTION OF AQUATIC ANIMALS
Aquaculture in the Commonwealth

- ‘Big hitters’; India, Bangladesh, Malaysia
- High growth countries; Zambia, Nigeria, Ghana, Uganda, Kenya, Rwanda
- Established industries; UK, Canada, Australia, New Zealand, Malta, Cyprus
- Aspiring countries; Malawi, Mozambique, Seychelles, Sierra Leone, Tanzania, Bahamas, Jamaica, Trinidad and Tobago, Fiji, Solomon Islands.....
Success factors: Opportunity and profitability

Opportunity
- Physical space for aquaculture development
- Aquaculture systems and species that will work in that environment
- Institutional and legal frameworks (land/water tenure, environmental compliance, labour regulations, food safety)
- Domestic or international markets (certification?)

Profitability
- Overall value chain needs to be profitable (includes input costs, efficiency of conversion and market price)
- Leads to private-sector investment into feed supply, hatcheries, farms, market infrastructure, training, etc
Key points

- Aquaculture is already making a major contribution towards global fish supply.
- Generates economic activity and jobs often in areas with few alternatives.
- Aquaculture not a substitute for fisheries – usually different types of fish and different people - but can be complementary.
- Together, aquaculture and fisheries contribute towards healthy diets and improved nutrition.
- Performance varies from country to country so it is important to share experience.
Thank you for your attention!
Webinar 4:
The Fishing fields: Sustainable aquaculture development strategies for the Commonwealth
Wednesday 29 July 2020

Case Study: Development of an Aquaculture Industry in Seychelles

Mr. Aubrey Lesperance
Principal Aquaculture Officer
Seychelles Fishing Authority
alesperance@sfa.sc
The Issues

Reliance on the 2 main pillars of the economy
- Tourism (*volatile* & largely dependent on global economy)
- Capture fisheries (*overexploited*)

Need to diversify the economy due to vulnerability
- 2008 global economic crisis
- Now Covid-19

Lack of existing framework to allow for emerging maritime sectors including marine-based aquaculture
- No aquaculture legislations in place (*pre-2014*)
- Infrastructure and institutional capacity
The Response

The approach
- Ecosystems Approach to Aquaculture (FAO)
- Consultative and survey based since 2007

Results
- Positive
- Recommendations to proceed with a full Mariculture Master Plan (MMP)

Outcomes
- MMP as roadmap
- Strong governmental support for the development of a new industry
- Linked to the Blue Economy Strategic Framework and Roadmap
Results, Accomplishments and Outcomes

Legislations
- Updated Fisheries Act
- Seychelles National Aquaculture Policy 2018
- Seychelles Aquaculture Regulations (in Official Gazetting stage)

Infrastructure
- Broodstock, Acclimation and Quarantine Facility
- Sea Urchin Research Facility
- Pilot Sea Cages
- Echinoid Hatchery (in construction)

Capacity
- Institutional Capacity Building
- Industry training
- Entrepreneurship
Challenges

Delayed Implementation
- Lack of sector funding (*key support infrastructure*)
- Covid-19

Delayed launch of the Industry in 2020
- Covid-19
- Slow legislative process

Outstanding actions
- Improving perception of aquaculture (*notably in fisheries sector*)
- Securing land and addressing labour issues (*baseline studies*)
Key lessons learned

- Economic diversification is Key
- Aquaculture cannot develop without a proper framework
- Sustainable aquaculture is the future
Thank You
CHICOA FISH FARM
LAKE CAHORA BASSA
MOZAMBIQUE.

From inception, the concept is to create a vertically integrated tilapia farm as a backbone for the aquaculture industry where it does not exist yet.
DOING THINGS DIFFERENTLY AND ADAPTING TECHNIQUES TO OUR CONTEXT. BREEDING AND NURSING SECTION ON THE LAKE.
PRODUCTION CAGES AND EARLY MORNING HARVEST. CAGES ARE ANCHORED IN 40 TO 60 M DEPTH, ALTHOUGH CLOSE TO SHORE.
VERTICAL INTEGRATION:

WHAT WE ALREADY DO
WHAT WE ARE DEVELOPING
WHAT WE WON’T DO

Crops/raw materials production
Other inputs (cages, equipment AQUAZUR)
Fish feed processing 2021 - 2022
Training centre and technical advices 2020
Fish production from fry to table size fish
Fish processing 2020
Fish transport and distribution
fish sales (wholesale and retail)
COMMUNITY ENGAGEMENT AND CSR

• COMMITMENT ON DEVELOPING A SMALL SCALE FARMERS PROGRAM WITH VARIOUS STAKEHOLDERS (IDH, ZVDA, MIN. OF FISHERIES, GAIN AND OTHERS BEING APPROACHED).

• BUILDING A TRAINING CENTRE FOR SMALL HOLDERS, STUDENTS AND CIVIL SERVANTS

• COMMITMENT TO TRAIN AND EMPLOY WOMEN AND YOUTHS

• FIXING ROAD ACCESS TO THE VILLAGE, THE PRIMARY SCHOOL, THE CLINIC AND OTHER SOCIAL ACTIONS TO HELP THE LOCAL COMMUNITY

• TRAINING ILLITERATE WORKERS OF CFF.

• APPOINTMENT OF A DEDICATED SOCIAL IMPACT COORDINATOR
INSPIRING OTHERS AND DEVELOPPING A SMALL SCALE FARMERS PROGRAM EVEN BEFORE STARTING OUR SMALL SCALE FARMERS’ PROGRAM, 3 SMALL SCALE FARMS HAVE DEVELOPED WITH THE HELP OF CFF.
PROVIDING HIGH QUALITY PROTEINS TO THE REGION: OUR MARKETS ARE IN MOZAMBIQUE, ZAMBIA, MALAWI AND RSA.
ACTUAL SITUATION

• CFF IS CLOSING DEALS WITH ADDITIONAL PARTNER(S) TO MOVE TO THE NEXT PHASE OF 3000 TPA (FROM OUR ACTUAL 1200 TPA CAPACITY) AND IMPLEMENT THE SMALL SCALE FARMERS PROGRAM.

• THE PROFILE OF OUR INVESTORS IS CLEARLY FUNDS AND ORGANISATIONS FOCUSSING ON SUSTAINABLE AQUACULTURE AND IMPACT INVESTMENT (AQUA SPARK (NL) HAS BEEN THE FIRST INVESTOR WITH HAN DERSKEN)

THANK YOU FOR YOUR ATTENTION
Best management practice training for Egyptian fish farmers managed by WorldFish under the IEIDEAS and STREAMS projects; Case Study

Ahmed Nasr-Allah and Harrison Charo-Karisa

Webinar 4: The Fishing fields:
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Wednesday 29 July, 14:00 – 15:00 BST (GMT+1)
Egyptian aquaculture in 2010

Production in 2010 was 921,585 t*

- Nearly all fish for domestic market.
- Aquaculture represented
  - 70.3% of Egyptian fish production
  - 59% of total fish consumption
- Employed at least 100,000 FTE, around 50% youth

* GAFRD statistics

TOT Approach for scaling

# of farms 10-15k, average farm size 6-8 ha
Training materials
2 BMP manuals (farms & hatcheries), 10 BMP videos

Over 10 Aquaculture training videos available online

https://www.youtube.com/playlist?list=PL_5s5CPGqCKQtv15fpx4UKDltm3JyEIM
Best Management Practices training 2010-2014

- Farmers to farmer training delivered in small groups, practical oriented
- Over 2900 trainees reached (2200 completed full BMP training)
- 90 hatchery owners/operators trained on hatchery BMP

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<tr>
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<td>637</td>
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<tr>
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<td>Total</td>
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## Impact Assessment of BMP during IEIDEAS

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<tr>
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<th>Yield t/ha</th>
<th>Feed cost $/ha</th>
<th>Total Cost $/ha</th>
<th>Net profit (% of sales)</th>
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<tr>
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<td>8.16</td>
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<td>BMP</td>
<td>8.00</td>
<td>0.98</td>
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### Feed Conversion Ratio

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<th>Control</th>
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<tr>
<td>Ratio</td>
<td>1.83</td>
<td>1.53</td>
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BMP delivered through STREAMS Project (2015-2018)

4297 fish farms trained on BMP,
✓ reduced feed use by 20% (FCR (1.82:1 to 1.4:1). (IA 2019)
✓ 13% increase in profitability
✓ 10% decrease in water consumption
✓ 22% Reduction in GHG emissions

Conclusion

• Adoption of Better management practices in aquaculture important for the sustainability of fish farming
• BMP improves producer incomes, contributes to food security, reduces pressure on water resources and reduces GHG
Thank You

WorldFish
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