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SUPPORT TO AQUACULTURE

April 2020

SDGs:



Countries:

Eswatini

Project Codes:

TCP/SWA/3602

FAO Contribution

USD 346 000

Duration:

1 March 2017 – 31 December 2019

Contact Info:

FAO Representation in Eswatini

FAO-SZ@fao.org

Implementing Partners

Ministry of Agriculture.

Beneficiaries

Fisheries and aquaculture consumers, traders, seed and feed suppliers, and ancillary enterprises built around farms.

Country Programming Framing Outputs

CPF 2016-2020 Priority 2: Market-led agricultural production. Outcome 2.1: Increased income from agricultural enterprises. Output 2.1.2: Local and export markets value chains for selected commodities established and linked to agribusinesses.



BACKGROUND

In April 2016, following a request from the Government of Eswatini (then Swaziland), FAO organized a mission to provide the Government with guidance on the development of aquaculture. The mission included multi-stakeholder consultation and field visits. It concluded that it would be useful to formulate an aquaculture development strategy and action plans, and to provide practical advice and a training programme on aquaculture business and production, as well as on aspects of aquaculture planning, to improve the management and productivity of aquaculture.

The current project was therefore aimed at promoting effectively governed aquaculture development that is socially inclusive, equitable and environmentally responsible, and that provides opportunities for sustainable and profitable aquafarming as well as the economic activities that grow around it, with particular focus on women. It would provide technical assistance in formulating a national strategy and plan for aquaculture development (assisting *inter alia* in an aquaculture development model) and initiating key actions to strengthen management and development capacity for the aquaculture sector.

IMPACT

The project paved the way towards a concrete plan and improved approach by the Government to commercial aquaculture development in the next ten years. As part of this process, the project built the capacity of the government authorities and other stakeholders in aquaculture planning, and of more than 106 farmers, who have adopted and are now applying improved aquaculture practices for enhanced productivity.

ACHIEVEMENT OF RESULTS

The actions carried out by the project contributed to improving nutrition and food security, and reducing poverty along the sector value chain. Key public and private-sector stakeholders were involved in the development of a comprehensive National Aquaculture Strategy, including a detailed implementation model to develop commercial aquaculture in the country in the next ten years. Selected farmers were supported to develop and set up their businesses, aligned with the National Aquaculture Strategy. Technical capacity was built at all levels in various aspects of aquaculture. A resource map for aquaculture in Eswatini was completed and Best Practice Aquaculture Management Guidelines developed for the country.

Finally, a National Aquaculture Association was created and is now active, with 80 participants. In alignment with the strategy, a thorough capacity-building programme was implemented for trainers and farmers.. .

IMPLEMENTATION OF WORK PLAN

The project was delayed by lengthy recruitment and other administrative processes, and by the late appointment of international consultants. Despite this, activities were implemented within the given timeframe and budget.

Among the risks envisaged were inadequate ownership of the project by those involved in its implementation, a shock caused by extreme events such as natural, biological, economic and social hazards, a lack of government support, increased prices of material inputs and unacceptable delays in scheduled project activities. These risks were successfully managed by the project.

FOLLOW-UP FOR GOVERNMENT ATTENTION

It is recommended to proceed with the implementation of a detailed project plan for the most important elements of the strategy plan identified as a priority by the national aquaculture taskforce. A draft proposal for this was developed by this project.

SUSTAINABILITY

1. Capacity development

To improve the enabling environment for aquaculture development, some regulations are undergoing review in order to develop culture models in designated areas of the country. The Government has continued to implement the training of trainers (ToT) and other training activities, although there remains a need for a more pro-active focus on commercial aquaculture development.

Technically capacitated stakeholders from the public and private (formal and informal) sectors are now better placed to follow up with possible public-private arrangements to promote inclusive aquaculture development. The Government has recognized the importance of taking a value-chain approach in aquaculture development.

2. Gender equality

Women are active members of the community as (aqua) farmers and government extensionists, as well as employed aquaculture workers. This was taken into account in the project and a record of women involved in activities was kept to ensure the maximum participation of women in capacity building: women represented a majority (65 percent) in these activities. Records from MOA indicate that over 70 percent of the farmers are women and are mostly from rural areas.

3. Environmental sustainability

Best management practice (BMP) training and guidelines were developed, including environmental aspects. The FAO Ecosystem Approach to Aquaculture (EAA) approach guided the development of the strategy and of other materials.

4. Human Rights-based Approach (HRBA) – in particular Right to Food and Decent Work

The project built the technical capacity of stakeholders, enabling them to promote commercial aquaculture development.

5. Technological sustainability

The technology promoted or supported by the project was well suited to its context. The focus of the project was to build the technical capacity of stakeholders through practical training in the most important aspects of planning, BMPs, business, and farm and feed techniques. This was achieved. Stakeholders, including small-scale farmers, have taken up good practices and gained sufficient knowledge to operate fish production. A beneficial follow-up would be technical support to the setting-up and implementation of formal arrangements among value-chain actors, as well as support to the implementation of the strategy developed for the Government and, in particular, the setting-up and operationalization of the models developed.

6. Economic sustainability

A project plan and detailed proposal, building on the work done and lessons learned from this project, were developed and will be used to mobilize resources for a continued initiative in 2020. The initiative is aligned with previous European Union-funded support towards the development of a national fisheries and aquaculture policy.

DOCUMENTS AND OUTREACH PRODUCTS

- ❑ Terms of Reference of the Aquaculture Advisory Council. 7 August 2017. 2 pp.
- ❑ Aquaculture Development in Southern Africa. Vasco Schmidt. 8 August 2017. 11 pp.
- ❑ Project Overview. Vasco Schmidt. 9 August 2017. 17 pp.
- ❑ Fisheries Review Report. Phumzile Dlamini and Vasco Schmidt. 29 August 2017. 18 pp.
- ❑ Introduction to Aquaculture Techniques. Vasco Schmidt. 7 November 2017. 8 pp.
- ❑ Aquaculture systems and operations. Vasco Schmidt. 7 November 2017. 24 pp.
- ❑ Post-harvest Processing. Vasco Schmidt. 7 November 2017. 21 pp.
- ❑ Prospectus for Training Programme. Vasco Schmidt and Barbora Hladka. 7 November 2017. 2 pp.
- ❑ Test your Knowledge on Aquaculture. Vasco Schmidt. 7 November 2017.
- ❑ Aquaculture Trends. Vasco Schmidt. 11 November 2017. 35 pp.
- ❑ Tilapia Grow-out in Cages. Vasco Schmidt. 14 November 2017. 32 pp.
- ❑ Tilapia Grow-out in Ponds. Vasco Schmidt. 14 November 2017. 44 pp.
- ❑ Fish Feeding. Vasco Schmidt. 14 November 2017. 29 pp.
- ❑ State of Fisheries and Aquaculture in Eswatini. Thembinkosi Dlamini. 14 November 2017. 21 pp.
- ❑ Business Case for Aquaculture. Vasco Schmidt. 14 November 2017. 28 pp.
- ❑ Aquaculture Business. Vasco Schmidt and Barbora Hladka. 15 November 2017. 37 pp.
- ❑ Farmer Business School Training Programme. Vasco Schmidt and Barbora Hladka. 21 November 2017. 131 pp.
- ❑ Aquaculture Planning. Vasco Schmidt. 11 February 2018. 8 pp.
- ❑ Guideline on the Development of a Strategic Plan on Aquaculture. Blessing Mapfumo. 18 January 2019. 13 pp.
- ❑ First Strategy Formulation Meeting Report. Vasco Schmidt. 11 February 2019. 5 pp.
- ❑ Project Website. Andile Dlamini and Muziwandile Hlatshwayo. February 2019.
- ❑ Second Strategy Formulation Meeting Report. Vasco Schmidt. 4 March 2019. 3 pp.
- ❑ Business Cases for Aquaculture. Blessing Mapfumo and Vasco Schmidt. 8 March 2019. 22 pp.
- ❑ Ecosystem Approach to Aquaculture Baseline Report. Phumzile Dlamini. 15 April 2019. 3 pp.
- ❑ Draft Investment Guide for Eswatini. Blessing Mapfumo and Patrick White. 4 October 2019. 12 pp.
- ❑ Aquaculture Resource Map. Justin Saunders and Patrick White. 20 October 2019. Atlas with 32 maps and 22 pp.
- ❑ Pre-feasibility Study. Blessing Mapfumo and Patrick White. 23 October 2019. 38 pp.
- ❑ Aquaculture Development Model for Implementation of the Aquaculture Strategy for Eswatini. Patrick White. 29 October 2019. 25 pp.
- ❑ Best Management Practices for Aquaculture in Eswatini. Etienne Hinrichsen and Leslie Ter Morshuizen. October 2019.
- ❑ Eswatini National Aquaculture Development Strategy Outline. Blessing Mapfumo. 11 November 2019. 19 pp.
- ❑ Aquaculture Farmer Atlas. Justin Saunders. 5 December 2019. 13 pp.
- ❑ Aquaculture Governance Atlas. Justin Saunders. 5 December 2019. 13 pp.
- ❑ Eswatini Aquaculture Atlas. Justin Saunders. 5 December 2019. 13 pp.
- ❑ Eswatini National Aquaculture Development Strategy. 11 December 2019. 129 pp.
- ❑ Best Management Practices Training Materials. Etienne Hinrichsen and Leslie Ter Morshuizen. 11 December 2019.
- ❑ Constitution of the Aquaculture Association of Eswatini. Etienne Hinrichsen. 13 December 2019. 5 pp.
- ❑ Environmental Best Practice Management. Etienne Hinrichsen. 13 December 2019. 108 pp.
- ❑ Ecological Risk Assessment for Aquaculture. Etienne Hinrichsen. 13 December 2019. 22 pp.
- ❑ Carrying Capacity for Aquaculture. Etienne Hinrichsen. 13 December 2019. 27 pp.
- ❑ Eswatini Aquaculture Association. Etienne Hinrichsen. 13 December 2019. 21 pp.
- ❑ Project Document for Strategy Implementation. Etienne Hinrichsen. December 2019.
- ❑ Strategy Validation Meeting Report. Blessing Mapfumo and Patrick White.
- ❑ Final Strategy Endorsement Meeting Report. Blessing Mapfumo and Etienne Hinrichsen.

ACHIEVEMENT OF RESULTS - LOGICAL FRAMEWORK

Expected Impact	Investment in aquaculture and an effectively governed fisheries and aquaculture development, which provides opportunities for commercial aquaculture and also livelihood improvements through better fish production techniques	
Outcome	Capacity of government and the private sector to plan, manage and sustainable develop profitable fisheries and aquaculture farming enterprises strengthened	
	Indicator	<ol style="list-style-type: none"> 1. Percentage of agriculture gross domestic product generated by aquaculture and fisheries. 2. Equitable number of aquaculture farmers employing climate-smart techniques across all key gender groups. 3. Percentage of year-on-year agriculture investment directed to aquaculture.
	Baseline	<ol style="list-style-type: none"> 1. 0.001% 2. 1 212 3. 14%
	End Target	<ol style="list-style-type: none"> 1. 1% 2. 2 500 3. 20%
	Comments and follow-up action to be taken	<p>The project built the capacity of over 106 farmers through the extension of ToTs in aquaculture BMPs, techniques and business.</p> <p>A National Aquaculture Association was created and is active, with 80 participants.</p> <p>Selected farmers who are commercially oriented were supported technically by the project to develop and set up their businesses, aligned with the National Aquaculture Strategy.</p> <p>Capacity building of government personnel included aquaculture planning and aquaculture zoning.</p> <p>Key stakeholders of the public and private sectors were involved in the development of a comprehensive National Aquaculture Strategy including, <i>inter alia</i>, a detailed implementation model to develop commercial aquaculture in the country in the next ten years.</p> <p>A resource map for aquaculture in Eswatini was completed and is available to entrants to the industry.</p> <p>Best Practice Aquaculture Management Guidelines were developed for the country.</p> <p>Follow-up actions include the following:</p> <ul style="list-style-type: none"> – Develop a business plan for cluster farming and aquaculture business that addresses market access and the need for an abattoir, as well as access to funding (including incentives). – Provide training and support to rural farmers. – Provide access to fingerling supply for farmers through vitalization of the existing hatchery. – Of further importance, as identified in the same strategic session, were: – Develop a market access plan for aquaculture in Eswatini. – Develop improved and more cost-effective feed supply for aquaculture in Eswatini. <p>Of importance to the sector at large, but without further discussion in the strategic session, were:</p> <ul style="list-style-type: none"> – Determine the production capacity of large waterbodies in Eswatini for aquaculture development. – Undertake an ecological risk assessment around the use of Nile tilapia and red claw crayfish in aquaculture development in Eswatini. <p>More consultations/engagements between FAO and MOA are required with regard to financial support for the operationalization of the national government hatchery at Meleti as this falls outside the project scope. FAO Eswatini (FAOSZ) should request more information from MOA.</p>

Output 1	A National Fisheries and Aquaculture Sector management mechanism is established and empowered		
	Indicators	Target	Achieved
	<ul style="list-style-type: none"> – Fisheries review conducted. – Aquaculture Strategy formulated. – Advisory Council established. – Launch and inception held. 	All four indicators achieved.	Yes
Baseline	0		
Comments	All activities were completed, except for the development of a stand-alone organizational plan to strengthen the statistical, information, training and extension services for fisheries and aquaculture in MOA. Only the training and extension services and an information system on aquaculture (including a national aquaculture atlas, ToT materials and BMPs) were supported as providing support to national statistics on aquaculture was not identified as a priority, given the current state of aquaculture and other priorities identified for the strategy.		
Activity 1.1	Fisheries Review		
	Achieved	Yes	
	Comments	Information was useful to inform inception and advocate the need to focus the project on developing a stand-alone National Aquaculture Strategy, instead of combining capture fisheries and aquaculture sectors in one strategy and development plan. On this occasion the Terms of Reference of a National Aquaculture Advisory Council were validated.	
Activity 1.2	Fisheries and Aquaculture Strategy		
	Achieved	Yes	
	Comments	Key stakeholders in the public and private sectors were involved in the development of a comprehensive National Aquaculture Strategy including, <i>inter alia</i> , a detailed implementation model to develop commercial aquaculture in the country in the next ten years.	
Activity 1.3	Government endorsement		
	Achieved	Yes	
	Comments	The final National Aquaculture Strategy was developed at different occasions in working sessions with a national advisory group. It was then validated and subsequently refined and presented as a final strategy for endorsement by the Government. The final document was endorsed by the Government and subsequent processes are not directly related to the project.	
Activity 1.4	Terms of Reference development		
	Achieved	Yes	
	Comments	The Terms of Reference for an Aquaculture Advisory Council were endorsed at the launch of the project.	
Activity 1.5	Framework development		
	Achieved	Yes	
	Comments	The Terms of Reference for an Aquaculture Advisory Council were endorsed at the launch of the project.	
Activity 1.6	Installation of Advisory Council		
	Achieved	Yes	
	Comments	The Advisory Council was established by the government and guided the development process of the National Aquaculture Strategy.	
Activity 1.7	Develop an organizational plan		
	Achieved	Yes	
	Comments	Training and extension services planning as well as an information system on aquaculture (including a national aquaculture atlas, ToT materials and BMPs) were supported.	

Output 2	A resource map of the Aquaculture Potential of Swaziland is developed		
	Indicators	Target	Achieved
	<ul style="list-style-type: none"> – Capacity building in zoning conducted. – Capacity building in FAO ecosystem approach to fisheries (EAF) and EAA conducted. – Resource map developed. 	<ul style="list-style-type: none"> – One. – One. – One. 	Yes
Baseline	0		
Comments	It took significant time to obtain certain information required for the resource map.		
Activity 2.1	Develop an aquaculture map of Swaziland		
	Achieved	Yes	
Activity 2.1	Comments	An Aquaculture Atlas of Swaziland was developed, identifying and describing the characteristics and potential of various sites for the aquaculture of given species. Several maps featuring various important characteristics such as biophysical potential, infrastructure and markets, and depicting zones for different culture systems and species, were produced for the Atlas and subsequently simplified for a section of the strategy document.	
	Zoning and ecosystems approach capacity-building programme		
Activity 2.2	Achieved	Yes	
	Comments	Training sessions were conducted as part of a one-week mission of an international Geographic Information System aquaculture expert for the application of zoning and EAF/EAA management, and the relevant aquaculture provisions of the Code of Conduct for Sustainable Fisheries.	
Activity 2.3	Training of government and university personnel		
	Achieved	Yes	
Activity 2.3	Comments	Training events were conducted for government and university personnel in the concept and application of EAF/EAA management and other environment management tools, as part of BMPs.	
	Farmers/local associations of farmers employing improved aquaculture, market and business planning and management organized		
Output 3	Indicators	Target	Achieved
	<ul style="list-style-type: none"> – Training sessions conducted. – BMPs developed. – Technical and business training programme and materials developed. – Association formed. 	<ul style="list-style-type: none"> – Five training events. – BMP guidelines. – ToT training materials and programme. – One association. 	Yes
	Baseline	0	
Comments	Administrative issues and lengthy processes delayed the start of some activities.		
Activity 3.1	Professionalization of associations		
	Achieved	Yes	
Activity 3.1	Comments	There was no existing association for aquaculture in the country. The new association was formed with the support of the project.	
	Developing BMPs in tilapia farming		
Activity 3.2	Achieved	Yes	
	Comments	This was concluded, based on existing BMP materials for Southern Africa and Southern African Development Community Best Practice Aquaculture Management Guidelines developed in another project in 2018-2019.	
Activity 3.3	Development of an aquabusiness training programme		
	Achieved	Yes	
Activity 3.3	Comments	ToT on aquaculture techniques and business was held and training materials developed and shared with trainers for the rollout of a development plan for aquabusiness training in Eswatini.	
	Training of aquabusiness farmers/local associations		
Activity 3.4	Achieved	Yes	
	Comments	This was initiated by the Government subsequent to the ToT above and further training was implemented for the formation of a national association.	
Activity 3.5	Development of a business support service		
	Achieved	Yes	
Activity 3.5	Comments	Throughout the project, selected commercial farmers were technically supported in planning and setting up their businesses and operations. The aquaculture association effectively provides platforms, including a social media group providing support to its participants.	

Output 4	Investment in aquaculture development and private investment in aquaculture production and ancillary enterprises formulated		
	Indicators	Target	Achieved
	<ul style="list-style-type: none"> – Model for business in aquaculture strategy formulated. – Investment guide prepared. 	<ul style="list-style-type: none"> – Two training events. – One investment guide. 	Yes
Baseline	0		
Comments	It was not possible to publish the draft investment guide, mainly because some information is still required. As the sector strategy is now expected to be implemented it will be more appropriate to time the investment development with the implementation of the strategy.		
Activity 4.1	Conduct feasibility studies of producing tilapia seed		
	Achieved	Yes	
Activity 4.1	Comments	Pre-feasibility studies of producing tilapia seed in a hatchery and farming tilapia in ponds and cage culture were conducted; these indicated that tilapia culture would be economically, financially and technically feasible in certain locations of the country. It was not possible to conduct detailed feasibility studies as it was difficult to obtain the required information.	
	Formulate a research and development programme for tilapia and catfish farming in ponds and cages		
Activity 4.2	Achieved	Partially	
	Comments	This was not formulated as a stand-alone programme document but is included (and budgeted for) in the strategy document.	
Activity 4.3	Formulate investment guides for government and funding partner assistance and public-private partnership		
	Achieved	Partially	
Activity 4.3	Comments	It was not possible to publish the draft investment guide, and it is not clear whether the private sector will have enough confidence in the public sector to enter public-private partnership (PPP) management arrangements. PPP arrangements, including a draft contract, are provided for in the implementation plan of the strategy.	
	Development of two aquaculture systems and private sector investment in establishing projects to farm tilapia and catfish species		
Activity 4.4	Achieved	Yes	
	Comments	The models for the development of two aquaculture systems are included in the final National Aquaculture Strategy.	

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