

2-1 Improve broodstock development and management techniques for seabass (*Lates calcarifer*)

2-2 Improve live feed culture techniques for seabass

2-3 Improve larval rearing and fry nursing techniques for seabass

2-4 Conduct outdoor verification experiments of fry nursing for seabass

2-5 Revise seed production manual including improved broodstock management, live feed culture, larval rearing, and fry nursing techniques

2-6 Conduct seed production experiment, including broodstock management, live feed culture, larval rearing and fry nursing of a new fish species

2-7 Conduct marine aquaculture technical seminar for extension staff and aquaculture farmers by MARDeC staff

Output 3: Foundation of fish diseases diagnosis and prevention system for the target fish species is built.

3-1 Update guideline and internal regulation for disease prevention of MARDeC

3-2 Develop and improve fish disease diagnosis manuals on the target fish species

3-3 Conduct fish disease diagnosis and prevention seminar for extension staff and aquaculture famers by MARDeC staff



## PROJECT FOR IMPLEMENTATION OF MARINE AQUACULTURE SEED PRODUCTION TECHNIQUES IN THE KINGDOM OF CAMBODIA

### MARDeC PROJECT



Microalgae production

Gonad examination



Rearing fingerling

Grading work



Disease diagnosis

Bacteria culture

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Cambodia

March 2017

## Background

Fisheries in Cambodia plays an important role in the national economy, and 4 million people equal to approximately 30% of the national population relies on fisheries for their living directly or indirectly. The demand of Cambodian people to the marine cultured species such as seabass, groupers etc., has been growing. However marine aquaculture farmers should utilize wild seeds and imported seeds for their culture due to an insufficient development of marine aquaculture technology.

Under this situation Royal Government of Cambodia requested to the Government of Japan construction of **Marine Aquaculture Research and Development Center (MARDeC)** for development of basic technology on marine aquaculture, supply of seeds of marine aquaculture, provision of technical training and consultation opportunity to private marine aquaculture farmers. Officially the MARDeC was inaugurated April 13, 2012.



Hatchery and breeding building

Before and after the construction of said center, the **Japan International Cooperation Agency (JICA)** dispatched long and short term experts on the administration, seed production technique and fish disease prevention.

Because of the above cooperation the seabass seed production in MARDeC has reached more than 200 thousand in 2015, the production level planned for the MARDeC has not yet been reached.

Based on the above-mentioned circumstances, the Government of Cambodia submitted the official request for technical cooperation project to JICA for establishing stabilizing healthy seed production of seabass and diversifying the species of seed production.

## Project Purpose

MARDeC's capacity for development of marine aquaculture seed production techniques is strengthened.

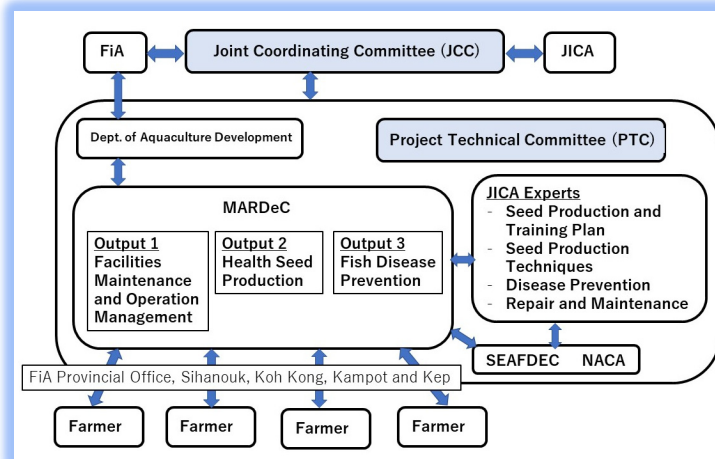
## Project Duration

From 20 November 2016 to 19 November 2019 (3 years)

## Counterpart Organization

Marine Aquaculture Research and Development Center (MARDeC)  
Fisheries Administration (FiA)

## Project Structure



## Project Output and Main Activities

Output 1: Operation and management capacity for marine aquaculture seed production in MARDeC is strengthened.

1-1 Conduct baseline survey of marine aquaculture in Coastal provinces and make a list of marine aquaculture farmers/business and distribution map

1-2 Develop repair and maintenance plan and update manuals of MARDeC's facilities and equipment

1-3 Develop annual seed production plan, including financial, human resource development, and marketing plan

1-4 Organize the staff training to disseminate improved techniques among MARDeC and FiA staff



Base line survey

Output 2: Seed production techniques, such as broodstock management, live feed production, larval rearing and fry nursing, of the target fish species in MARDeC are developed and improved through the production experiments.