Name of country	Project for Sustainable Management of Coastal Fisheries Resources (Project 2005-2010)
	Project for Co-Management of Coastal Fisheries in the Gulf of Gabes (Project 2012-2016)

# I +Project summary

Background of the projects	Coastal water of southern Tunisia, especially the Gulf of Gabes, is known not only as good fishing grounds but also as important nursery grounds of fish juveniles in the Mediterranean Sea where seagrass bed develops well. However, recently overfishing and destruction of seagrass bed have been caused by illegal fishing, and consequently catch of demersal fish has dramatically decreased in the area. On the other hand, a cooperation system among fisher's organization, local people and the governmental organizations was insufficient and actions for conservation of environment of fishing grounds were ineffective. In addition, the restrictive regulations were not compiled due to lack of measures to supplement the fishers' income against the fishing control.		
Objectives of the project	[Project 2005-2010]  Through conservation and rehabilitation of seagrass bed being demonstrated with participation of fishers in the selected project sites, experimental activities of stock enhancement being promoted, the plan to diversify income source of fishers being elaborated on the basis of project activities, technical exchanges with neighboring countries being promoted to practice the coastal fisheries resource management, the project aimed at development of models of coastal fisheries resources management for sustainable use of demersal fish in the selected project sites, with participation of fishing communities, thereby contributing to adaption of the models of coastal fisheries resource management for sustainable use of demersal fish around the southern coastal zone of Tunisia, with participation of fishing communities.  1. Overall goal: Models of coastal fisheries resource management for sustainable use of demersal fish are adapted around the southern coastal zone of Tunisia with participation fishing communities.  2. Project Purpose: Models of coastal fisheries resource management for sustainable use of demersal fish are developed in the selected project sites, with participation of fishing communities.  [Project 2012-2016]  Through enhancement of capacity of stakeholders to implement fisheries co-management, formulation of coastal fishery resource management plan (CFRMP) based on the information on fishery resources/eco-system, fishing operation and socio-economic aspects of the coastal communities, and verification of viability of CFRMP in the target areas, the project aimed at practice of co-management of coastal fishery resources in the target areas of the Gulf of Gabes, thereby contributing to extension of the practice of the co-management of coastal fishery resources throughout the Gulf of Gabes.  1. Overall Goal: The practice of co-management of coastal fishery resources is extended throughout the Gulf of Gabes.  2. Project Purpose: Co-management of coastal fishery resources is practiced in		
Activities of the Project	1. Project sites: [Project 2005-2010] Mahares, Zarat, Ajim, Kraten and Ataya (Kerkenah Islam [Project 2012-2016] Zabboussa, Skhira (Sfax governorate), Ghannouch, Me (Medenine governorate) in the Gulf of Gabes 2. Main activities: [Project2005-2010] i) Demonstration of conservation and rehabilitation of experimental activities of stock enhancement, iii) Elabor on project activities. [Project 2012-2016] i) Establishment of Local CFRMP Committees and	touia, Zarat (Gabes governorate), and Hassi Jerbi, Zarzis seagrass bed in the selected project site, ii) Promotion of ration of a plan to diversify income source of fishes based d implementation of guidelines for coastal fisheries each pilot site, iii) Implementation of drafted CFRMP and Tunisian side [Project 2005-2010]  1) Staff allocated: 22 persons 2) Land and facilities: office space and others 3) Operation cost: Cost for transportation, driver, operation cost of vehicle, cost for seminars, utility costs, etc.  [Project 2012-2016] 1) Staff allocated: 50 persons	

	<ol> <li>Trainees received: 24 persons</li> <li>Training in the third country: 15 p</li> <li>Equipment: Vehicles, underwater of software, Survey devices (e.g., data etc.)</li> <li>Operation cost: Seminar cost, tran vehicle operation cost, etc.</li> </ol>	camera, GIS a logger, etc.),	<ul> <li>2) Land and facilities: office space and 150 artificial reeves</li> <li>3) Operation cost: Cost for transportation, utility costs, etc.</li> </ul>
Project Period	[Project 2005-2010] June 2005 – June 2010 [Project 2012-2016] October. 2012 – October. 2016	Project Cost	[Project 2005-2010] (ex-ante) 350 million yen; (actual) 516 million yen [Project 2012-2016] (ex-ante) 400 million yen; (actual) 440 million yen
Implementing Agency	[Project 2005-2010] Direction General of Fishery and Aquaculture (DGPA), Ministry of Agriculture, Hydraulic Resources and Fishery, Agricultural Extension and Training Agency (AVFA), National Institute of Marine Sciences and Technologies (INSTM), Regional Branch for Agricultural Development (CRDA), Ports Fishing and Facilities Agency (APIP), Inter-professional Organization of the Fishing Products (GIPP), Tunisian Agriculture and Fisheries Union (UTAP) [Project 2012-2016] DGPA		
Cooperation Agency in	[Project 2005-2010] and [Project 2012-2016]		
Japan	Overseas Agro-Fisheries Consultants Co., Ltd. (OAFIC)		

#### II. Result of the Evaluation

#### 1 Relevance

<Consistency with development plan of Tunisian government at the time of ex-ante evaluation and project completion>

The project was consistent with the national development policies of Tunisia such as "The 10th Five-Year National Economic Development Plan (2002-2006)" and "The Socio-Economic Development Strategy (2012-2016)" aiming to equilibrium and sustainable development of fishery resources.

<Consistency with development needs in Tunisia at the time of ex-ante evaluation and project completion>

The project was consistent with development needs of Tunisia such as to establish a co-management system of coastal fishery resources in the Gulf of Gabes with the collaboration of fisher's organization, local people and the governmental organizations for sustainable fishery resources development in Tunisia.

<Consistency with Japanese aid policies at the time of ex-ante evaluation>

The project was consistent with the Japan's ODA policy for the Republic of Tunisia at the time of ex-ante evaluation of Project 2005-2010<sup>1</sup> focusing on the development and promotion of agriculture and fishery as one of the five priority areas, as well as the Japan's ODA policy for the Republic of Tunisia at the time of ex-ante evaluation of Project 2012-2016<sup>2</sup> focusing on the employment promotion and industry development as one of priority areas in which support for agriculture and fishery sectors was addressed.

<Evaluation Result>

In the light of above, the relevance of this project is high.

# 2 Effectiveness/ Impact

[Project 2005-2010]

<Achievement status of Project Purpose at the time of completion of the project>

The Project Purpose was achieved by the time of project completion. Fifty-seven workshops and seminar for co-management between fisher's organizations, local communities and governmental bodies to jointly plan, implement and evaluate the coastal fisheries resource management were organized by the project completion (Indicator 1). Also, some improvement of fishers' activities in self-disciplined manner for rehabilitation of seagrass bed and reservation of coastal fisheries resource were identified in 4 out of 5 project sites (Indicator 2)

<Continuation status of project effects at the time of ex-post evaluation>

The project effects have been continued at the time of ex-post evaluation. More than 10 regular co-management meetings have been held with the participation of fishing organizations, local communities and governmental bodies to jointly plan, implement and evaluate the management of coastal fisheries resources. 4 out of 5 project sites, which are Mahares, Ataya, Zarrat, Ajim, adopted the national program for the management of the Gulf of Gabes by artificial reefs. In this regard, however, the installation of artificial reefs sometimes met with resistance from certain fisheries' groups because the levels of understanding of co-management among stakeholders were different. On the other hand, planting seaweed operation for the rehabilitation of seagrass bed and reservation of coastal fisheries resource did not give significant results.

<Status of achievement of Overall Goal at the time of ex-post evaluation>

The Overall Goal was partially achieved at the time of Ex-post evaluation. The number of fish landing sites where the coastal fishery resource management is practiced has considerably increased from 5 project sites to 8 sites (Indicator 1). On the other hand, there is a concern on reduction in the number of fishers in Ghannouch and Ajim due to increasing migration of young people. Catch per Unit Effort (CPUE) has increased in some sites but production has remained stationery in other sites (Indicator 2). This could be linked to the artificial reef impacts as the regeneration of the marine ecosystem and the return of marine species were observed on artificial reef areas. After the project completion, Tunisia continuously held seminars for technical exchanges with neighboring countries particularly Algeria, within the

ODA Databook 2005, Ministry of Foreign Affairs, Japan.

<sup>&</sup>lt;sup>2</sup> ODA Databook 2012, Ministry of Foreign Affairs, Japan.

context of regional projects such as Blue Hope Technical Cooperation Project by the Food and Agriculture Organization (FAO) and other technical meetings with the General Fisheries Commission for the Mediterranean (GFCM) (Indicator 3).

<Other impacts confirmed at ex-post evaluation>

There have been some positive impacts observed at the time of ex-post evaluation. This project contributed on identifying a large quantity of a new invasive species the scientific name blue crab Portunus segnis by providing expertise in fishing techniques, organizing cooking shows for the preparation of blue crab dishes and identifying tools for the valorization of this new species. No negative impact on natural environment was confirmed.

#### [Project 2012-2016]

<Achievement status of the Project Purpose at the time of completion of the project>

The project purpose was achieved by the time of project completion. Through dozens of meetings/workshops by participatory approach philosophy, the project almost satisfactorily elaborated CFRMP at 6 out of 7 project sites and it was confirmed that the ratio of CFRMP participating boats/boat owners exceeded 50% at each site (Indicator 1). Also, the project completed one turn of its management cycle of CFRMP according to the implementation guideline at all 7 project sites (Indicator 2).

<Continuation status of the project effects at the time of ex-post evaluation>

The project effects have been continued at the time of ex-post evaluation. The boat owners, captains and fishers of the registered fishing units participated in the CFRMP for all target areas, especially in Ghannouch, and Ajim, (the percentage differs from one region to another but there was a strong mobilization for Ghannouch and Ajim regions, up to 100% of fishers). Also, all regional government agencies have supported the management cycle of CFRMP according to the implementation guidelines.

<Achievement status of Overall Goal at the time of ex-post evaluation>

The Overall Goal was partially achieved at the time of ex-post evaluation. Particularly due to lack of extension workers, difficulties in identifying leading people, absence of professional organizations (groups, associations), and lack of human resources and logistics especially that some isolated sites are difficult to access, the CFRMP was only implemented at 11 of the 21 fishing ports/landing sites in the Gulf of Gabes with reference to implementation guidelines by the end of 2020, therefore, the target value was not fully met (Indicator 1). The 60 to 100% of the owners/captains of registered coastal fishing boats participated in CFMP at least 10 ports/landing sites in the Gulf of Gabes by the end of 2020. This result can be explained by the continuous self-help efforts made by all the actors involved in the co-management of coastal fisheries (Administration, Research units Extension services and NGOs). Technical cooperation projects with various donors such as the United Nations Development Program (UNDP), FAO, the European Union (EU), and the World Wild Foundation for Nature (WWF) have provided a strong participatory approach that strengthened the percepts of coastal fisheries co-management. For example, the environmental conservation project was implemented in the governorate of Gabes based on the outcome of the project, and its target area includes the one of the project sites of this project. From this point, it is considered that the project played a role of primming water for other donors' assistance to some extent (Indicator 2).

<Other impact confirmed at the Ex-post evaluation>

There have been some positive impacts observed at the time of ex-post evaluation. At the time of ex-post evaluation, an exchange of know-how between the beneficiaries in Tunisia and Senegal was confirmed through a collaboration with JICA's technical cooperation project in Senegal "Project on Reinforcement of Capacity in Organization and Training of the Professional Leaders in the Field of Artisanal Fishery: Co-management of Artisanal Fisheries in Senegal (COGEPAS)". No negative impact on natural environment was confirmed. <Evaluation Result>

From above, the effectiveness and impact of the two project is high.

nursery areas, whether small

Achievement of Project purpose and Overall goal Indicators Target Achievement [Project 2005-2010] Status of achievement: Achieved (Continued) (Project Purpose) (Indicator 1) Models of coastal fisheries Meetings are regularly held for (At the time of project completion) resource management for co-management between fisher's Fifty-seven workshops and seminars were held with participation of fishers sustainable use of organizations, local communities organizations, local communities and governmental bodies. demersal fish are and governmental bodies to developed in the selected jointly plan, implement and (At the time of ex-post evaluation) project sites, with evaluate the coastal fisheries More than ten (10) regular co-management meetings have been held with the participation of fishing resource management. participation of fishing organizations, local communities and governmental communities. bodies to jointly plan, implement and evaluate the management of coastal fisheries resources. (Indicator 2) Status of achievement: Achieved (Continued) Fishers act in self-disciplined (At the time of project completion) manner for rehabilitation of Some changes of fishers' activities were identified in 4 out of 5 project sites. seagrass bed and reservation of Some fishers in Ajim changed their fishing method from trammel net to hook coastal fisheries resource. and line fishing in the areas around the installed artificial reefs (Ars). Some women started to release caught small size clam. Note: To be measured by whether fishing activities (including the (At the time of ex-post evaluation) manner of use of fishery grounds) 4 out of 5 project sites, which are Mahares, Ataya, Zarrat, Ajim, adopted the are self-controlled around the national program for the management of the Gulf of Gabes by artificial reefs. artificial reefs functioning as However, planting seaweed operation for the rehabilitation of seagrass bed and

reservation of coastal fisheries resource did not give significant results.

		juveniles are released when they	
		are caught, etc. Achievement	
		level is to be evaluated by the	
		number of waters with changes of	
		fishers' behaviors.	
	(Overall Goal)	(Indicator 1)	Status of achievement: Partially Achieved
	Models of coastal fisheries	The number of fish landing sites	(At the time of ex-post evaluation)
	resource management for	"fishing ports" where fishers	The number of fish landing sites where the coastal fishery resource management
	sustainable use of	practice coastal fisheries resource	is practiced has increased from 5 project sites to 8 sites supported by several
	demersal fish are adapted	management has doubled in the	development projects financed by donors.
	around the southern	southern coastal zone of Tunisia	This is partially due to the reduction in the number of fishers in the project area
	coastal zone of Tunisia,	(from 5 to 10 sites).	influenced by increasing migration of young people.
	with participation of	(Indicator 2)	Status of achievement: Partially Achieved
	fishing communities.	Catch per Unit Effort (CPUE) is	(At the time of ex-post evaluation)
		increased at the fish landing sites	CPUE increased in some areas and production has remained stationary in other
		where the comprehensive coastal	areas.
		fisheries resource management is	
		practiced.	
		(Indicator 3)	Status of achievement: Achieved
		Tunisia prepares plans to	(At the time of ex-post evaluation)
		continuously hold seminars for	Tunisia continuously held seminars with neighboring countries, particularly with
		technical exchanges with	Algeria.
		neighbouring countries.	riigoriu.
ŀ	[Project 2012-2016]	nergnooding countries.	
}	(Project Purpose)	(Indicator 1)	Status of achievement: Achieved (Continued)
	Co-management of coastal	At the end of the Project, 50% of	(At the time of project completion)
	fishery resources is	the owners/captains of the	Through dozens of meetings/workshops by participatory approach philosophy,
	practiced in the target areas	registered coastal fishing boats	the project almost satisfactorily elaborated CFRMP at 6 out of 7 project sites and
	of the Gulf of Gabes.	participate in the CFRMP for	it was confirmed that the ratio of CFRMP participating boats/boat owners
	of the Gulf of Gabes.	each Target Area.	exceeded 50% at each site.
		each Target Area.	exceeded 50% at each site.
			(At the time of expost evaluation)
			(At the time of ex-post evaluation)
			Boat owners, captains and fishers of the registered fishing units participated in
			the CFRMP in all target areas. The percentage differs from one region to another
			but there was a strong mobilization for Ghannouch and Ajim regions, up to
		~ "	100% of fishers.
		(Indicator 2)	Status of achievement: Achieved (Continued)
		Regional government agencies	(At the time of project completion)
		are able to support management	The project completed one turn of its management cycle of CFRMP according to
		cycle (plan/implement/evaluate/	the implementation guideline at all 7 project sites.
		revise) of CFRMP according to	
		the implementation guidelines.	(At the time of ex-post evaluation)
			All regional government agencies have supported the management cycle of
Ĺ			CFRMP according to the implementation guidelines.
	(Overall Goal)	(Indicator 1)	Status of achievement: Partially achieved
	The practice of	CFRMP is newly implemented	(At the time of ex-post evaluation)
	co-management of coastal	with reference to the implantation	Although, the CFRMP was implemented at 11 of the 21 fishing ports/landing
	fishery resources is	guidelines at least in 15 out of 21,	sites in the Gulf of Gabes with reference to implementation guidelines by the end
	extended throughout the	coastal fishing ports/landing sites	of 2020, the target was not fully achieved. The ports/landing sites where the
	Gulf of Gabes.	throughout the Gulf of Gabes by	introduction of CFRMP is delayed observed the issues such as lack of extension
		the end of 2020.	workers, difficulties in identifying leading people, absence of professional
			organizations (groups, associations), and lack of human resources and logistics
			especially that some isolated sites are difficult to access.
		(Indicator 2)	Status of achievement: Achieved
		At least 70% of the owners/	(At the time of ex-post evaluation)
		captains of the registered coastal	A percentage ranged from 60 to 100% of the owners/captains of registered
		fishing boats participate in the	coastal fishing boats participated in the CFRMP at least 10 ports/landing sites in
		CFRMP at least 10 coastal fishing	the Gulf of Gabes by the end of 2020.
		ports/landing sites throughout the	This result can be explained by the efforts made by all the actors involved in the
		Gulf of Gabes by the end or 2020.	co-management of coastal fisheries (Administration, Research units Extension
		Guil of Gabes by the elid of 2020.	· · · · · · · · · · · · · · · · · · ·
			services and NGOs). Technical cooperation projects with various donors
			(UNDP/FAO/EU/WWF etc.) have provided a strong participatory approach that
			strengthened the percepts of coastal fisheries resource co-management.
			For example, the environmental conservation project was implemented in the

governorate of Gabes based on the outcome of the project, and its target area includes the one of the project sites of this project.

Source: Terminal evaluation report, the project related documents, the response of questionnaire and interview with the implementing agencies.

## 3 Efficiency

For Project 2005-2010, although the project cost exceeded the plan (ratio against the plan: 148%) due to the increase in numbers of experts to respond the needs identified by the Mid-term review which are the rehabilitation of seagrass bed as well as the institutional capacity for the management of finishing ground, the project period was as planned (ratio against the plan: 100%). For Project 2012-2016, although the project cost exceeded the plan (ratio against plan: 110%) due to additional activities such as (i) collection of fishers' opinions to design new co-management activities, and (ii) activities for preventing fishers' damages caused by abnormal increase of blue crabs in the Gulf of Gabes as well as effective utilization of this marine resource, the project period was as planned (ratio against plan: 100%). Outputs of both projects were achieved as planned.

From the above, the efficiency of the overall projects is fair.

# 4 Sustainability

#### <Policy Aspect>

The National Program of Protection of the Sensitive Areas of the Gulf of Gabes by the Artificial Reef has been launched in 2016 following the implementation of Project 2005-2010 and Project 2012-2016. This national program aims to expand the areas of artificial reefs wider than the project target area

#### <Institutional/Organizational Aspect>

Three local co-management committees (Ajim, Ghannouch and Skhira) continue to work and hold technical and consultation meetings (particularly in Ajim and Ghannouch). In the 3 CRDAs (Sfax, Gabes and Medenine) nearly 60 individuals are involved in the technical administrations in charge of the fishing sector. DGPA has recently reinforced the staff with the recruitment of more than 50 fishing guards. At the time of ex-post evaluation, the fishing guards do not have the necessary means such as their patrol boats to ensure surveillance operations. However, their capacity of surveillance operations is expected to be strengthened soon by introducing the patrol boats provided by the Japanese grant aid.

#### <Technical Aspect>

The staff of DGPA have sustained necessary skills and knowledge to disseminate the model developed by the project. However, there is a need to further strengthen the capacities of personnel in charge of the fishing sector continuously. DGPA is encouraging the CRDAs to implement OJT trainings. The guidelines developed by the project, which are considered as a manual of procedures, are considered as an essential tool for co-managing the coastal fisheries for dissemination to new pilot sites, have been used by all the members of the steering committee. While there is a lack of extension workers in ports and fishing sites who support fishers to apply co-management, at local ports and fishing sites, stakeholders of co-management including fishers's associations, fishers and local residents voluntarily gathered and they have mutually shared and disseminated what they have learned from the project in the local level, which supplement the shortage of regular extension workers. In addition, the other donors plan to implement the project which support to disseminate and capitalize the co-management of fisheries resources like this project. It is expected that the dissemination the co-management system will be strengthened in the future through support for local fishery training centers in terms of hardware and software aspects. From the above, it is judged that there is no major issues on the sustainability of technical aspect.

#### <Financial Aspect>

The ministry of Agriculture has allocated 10 million Tunisian dinar for the national program of artificial reefs in the Gulf of Gabes over 5 years. As part of the agreement on the conversion of Tunisia's debt to Belgium into a development project, a new project of the DGPA based on the same model developed by Project 2012-2016 has been selected for a sum of 1.8 million euros. The necessary budget has been secured to continue the project outcomes.

#### <Evaluation Result>

In the light of above, the sustainability of the effects though the project is high.

## 5 Overall evaluation

Both Project 2005-2010 and Project 2012-2016 achieved project purpose which aimed to develop models of coastal fisheries resource management for sustainable use of demersal fish as well as to practice co-management of coastal fishery resources in the target areas of the Gulf of Gabes as planned. The overall goal which aimed to extend the practice of co-management of coastal fishery resources throughout the Gulf of Gabes has been partially achieved although the number of fish landing sites which adopted the coastal fisheries resource management model for sustainable use of demersal fish with participation of fishing communities has considerably increased in the area. With reference to efficiency, the project periods of both projects were as planned, but their project costs exceeded the plan.

Considering all of the above points, this project is evaluated to be highly satisfactory.

#### III. Recommendations & Lessons Learned

# Recommendations for Implementing Agency:

• Efforts have been made to sensitize local actors by the projects but some gaps were identified on the ground. These include poor understanding of fishers organizations duties and responsibilities in good governance at the local level. Policies and regulatory provisions are sometimes unknown or interpreted wrongly by most stakeholders. Therefore, it is essential to establish a mechanism to enhance the integration of extension methods of fisheries programs. For this aim, provision of training program for officials and selected leaders among fishers either in specialized facilities or through hands-on training is necessary in order to raise their awareness of their responsibilities properly as well as to promote a common understanding of the good co-management practices.

### Lessons Learned for JICA:

• In this ex-post evaluation, there were difficulties to collect the statistical data for analyzing the effectiveness and impacts of the project as the location of project site were scattered and the project related organizations were varied. In order to realize the effective evaluation of the project as well as to understand the status of the fisheries sector in the project targe areas, the project should have established a

- relevant statistics and data collection system needed for the evaluation of indicators related to the effectiveness/impacts of the project as defined in the project documents in coordination with JICA, the implementing agency and other stakeholders.
- The project for co-management of coastal fisheries was the first experience in Tunisia and the participatory approach applied in the project was new for the implementing agency. There was no formal inter-agency coordination in the Tunisia's fisheries sector at the biggening of the project. However, through the implementation of the projects, a coordination and exchange mechanism between the national Committee for Coastal Fisheries Resources Co-management, the administrative, associative and scientific bodies at the governorate level and the field actors (fishermen) was created to promote the exchange of experiences and know-how between localities and governorates but also at national level. The promotion of this mechanism was possible thanks to concerted actions between all the key actors, awareness-raising and dissemination actions, field work and a detailed diagnosis (exhaustive analysis) of the project target areas. A common understanding of the co-management among the stakeholders involved in this project was thus promoted. This project contributed to introduce a formal inter-agency coordination system/practice in the Tunisia's fisheries sector thanks to the following factors: (i) existence of a number of professional organizations, and has in part built upon the success of previous development projects, and the (ii) leadership of the fishing communities themselves. It will be a good reference for other projects.



Improved type of artificial reef prepared by the project.



Fishers installing artificial reef