

FAO technical assistance to the Democratic People's Republic of Korea on mariculture

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The Department of Fisheries and Aquaculture of FAO is in the process of finalizing a 2-year project document that aims at providing technical support to the finfish mariculture industry in the Democratic People's Republic of Korea through a Technical Cooperation Programme (TCP). The proposal under preparation will follow the structure of an earlier project¹ that successfully transferred sea cucumber and scallop hatchery and polyculture technologies through close technical cooperation with experts from neighbouring China consisting in a series of practical hands-on training sessions abroad as well as in-country technical support through the recruitment of competent regional aquaculture experts.

The Aquaculture Management and Conservation Service (FIMA) acknowledged the need to provide such technical support to the country and recommended that project outputs should be complementary to on-going national and international efforts in support of the national mariculture sector as a whole. The project formulation mission will be fielded next February with the participation of two Chinese experts. Prof. Chen Jiabin, former director of the Yellow Sea Fisheries Research Institute (YSFRI) in Qingdao and former FAO expert will lead the mission. Over the years he has worked in

the country for FAO and has been involved with the implementation of different aquaculture projects. Prof. Jiabin will be accompanied by Dr Gao Chun-ren, a cold water fish aquaculture expert working at the YSFRI (Chinese Academy of Fish Sciences) since 1984. He has been engaged in breeding research of commercially important marine finfish (including the seabass, *Lateolabrax japonicus*, the European turbot, *Scophthalmus maximus*, the red seabream, *Pagrus major*, and the Humphead wrasse, *Cheilinus undulates*), fish disease and nutrition and has published over 50 scientific papers.

The expected output of the mission supported through TCP Facility funds is a revised and technically sound TCP project document on the transfer of cold water finfish aquaculture hatchery and farming technologies. The project document will clearly: i) identify the finfish species of relevance; ii) the type of technologies to be transferred; iii) identify the institute and country where training and study tours will be organized, respectively (most likely in the People's Republic of China considering that the two countries share the same marine species and climate conditions); iv) identify the TCDC (Technical Cooperation among Developing Countries) and national consultants needed and finalize their Terms of Reference; iv) work out a realistic activity workplan and implementation

timetable based on the training needs and the biological culture cycle of the identified finfish species; v) identify and specify equipment to requirements; and vi) indicate actions the beneficiary Government will be in a position to undertake in scaling-up the activities following the FAO's assistance.

The new technical project proposal will be prepared in collaboration with FIMA (Responsible technical officer: Mr Alessandro Lovatelli) following the field mission to effectively verify and quantify the actual national needs (in terms of technologies, expertise required, equipment needs, etc.). Existing



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Commercial harvest of the endemic species of sea cucumber (*Apostichopus japonicus*) mainly for export markets



A specimen of young Japanese kelp (Laminaria japonica) farmed on submerged long-lines



View of a typical coastal bay along the eastern coast of the Democratic People's Republic of Korea where sea cucumber, scallop and kelp polyculture is widely practiced by fishing and aquaculture cooperatives

aquaculture facilities will be visited by FAO's consultants to identify the most suitable project beneficiary facility.

The two consultants will be visiting and meeting up with representatives from Hongwon Fisheries' Cooperative, Hongwon County, South Hamkyong Province, and from Yanghwa Fishery Cooperative, based in Sinpo City, South Hamkyong Province which will likely become the new project site. Furthermore meetings will be arranged with representatives of the Ministry of Fisheries (External Cooperation Department, Inland and Mariculture Department, and Fisheries Information and Research Bureau) and technical staff of the East Sea Fishery Research Institute and Wonsan University of Fisheries.

The expected outcome of the mariculture project include a core of technicians from the fishing cooperative and researchers at the institutional levels (East Sea Fisheries Research Institute and the Research Institute of the

Wonsan Fisheries University) trained on the artificial propagation, rearing fingerlings and cage culture techniques for commercially important marine species. The acquired skills and technical knowledge will certainly enable the adaptation of the introduced techniques to the local environmental and economic conditions of the country. Furthermore it is expected that the trained research personnel will provide technical support to the beneficiary fishing and mariculture cooperatives at the start of its hatchery operations particularly in areas such as diseases, chemical and microbiology analysis that require support from adequately equipped and staffed centres. The training course in China will give a unique opportunity to the participating cooperative members and technicians to experience and learn artificial propagation, cage culture management and farming techniques through practical hands-on activities and field visits of commercial operations. Useful contacts will be established with aquaculture specialists in China and formal contacts between

research and training institutions will be strengthened. Linkages with aquaculture institutes, researchers and technicians in China should promote further exchanges of experiences and information among the two neighbouring countries. These human resources will certainly constitute the basis for future follow-up actions and expansion of mariculture activities on a larger scale in the Democratic People's Republic of Korea.

¹The title of this project was "Strengthening Marine Aquaculture Development" (TCP/DRK/3001). The objective of the project was to introduce and transfer the technology of sea cucumber aquaculture, scallop spat production and pilot level demonstration of kelp-scallop-sea cucumber polyculture in the north-east coast of DPR Korea. The project was operationally closed at the end of January 2006 and the main project beneficiary was the Hongwon Fishing and Mariculture Cooperative. Among the outputs of the project was a technical manual on bivalve hatchery design and construction. This technical document has since been published by FAO and is available (Sarkis, S.; Lovatelli, A (comp./ed.). Installation and operation of a modular bivalve hatchery. *FAO Fisheries Technical Paper*. No. 492. Rome, FAO. 2007. 173p. Contains a CD-ROM).