

ANNEX III Evaluation Grid

1. Relevance

Topic	Sub-topic	Information Source
<p>1.1 Relevance of Overall Goal and Project Purpose</p>	<p><b>1.1.1 Target group needs</b></p> <p>All counterparts and expert indicated that the project purpose and overall goal meet the needs of the target group.</p> <p>The target group needs</p> <ul style="list-style-type: none"> <li>(1) Clarification of VHSV influence to other species</li> <li>(2) Stable growth of Kalkan production</li> <li>(3) Identification of the causes of dropsy</li> <li>(4) Identification of criteria of abnormality of Black Sea turbot</li> </ul>	<ul style="list-style-type: none"> <li>• C/Ps and Expert</li> </ul>
	<p><b>1.1.2 Fishery sector needs</b></p> <p>The project is accordance with the needs of the fish aquaculture sector</p> <p>Evidence</p> <ul style="list-style-type: none"> <li>• Private companies showed their interests in Kalkan aquaculture at the Fishery Fair held in Istanbul in Sep. 2005.(Jan.2006)</li> <li>• Private companies have requested 20,000 seeds to CFRI at the Fishery Fair in 2005.</li> <li>• Laboratory has visited CFRI to acquire the information on kalkan turbot production.</li> </ul>	<ul style="list-style-type: none"> <li>• C/Ps and Expert</li> <li>• MARA</li> </ul>
	<p><b>1.1.3 Turkish national policy</b></p> <p>The project is consistency with Turkish national policy as described in the 8th Five Year Development Plan (2001-2005)</p> <p><i>8th Five Year Development Plan (2001-2005)</i></p> <ul style="list-style-type: none"> <li>• In order to increase fish production...Importance shall be attached on improving and spreading cultivation activities, by taking into account interactions among environment, tourism, forestry, transport and other related sectors.(1359)</li> <li>• Fishery activities shall be oriented towards cultivating species that having high economic value and appropriate to the environment. especially, the fishery potential of the GAP Region shall be taken into consideration. (1360)</li> </ul>	<ul style="list-style-type: none"> <li>• MARA</li> </ul>
	<p><b>1.1.4 Japan's foreign aid policy</b></p> <p>The project is in consistency with Japan's foreign aid policy and JICA's cooperation strategy for Turkey</p> <p><i>JICA country program for Turkey</i></p> <p>Japan's strategic field of cooperation are 1) environmental improvement, 2)capacity building for socio-economic development, 3) agriculture and fishery, and the improvement of basic human needs including health service to mitigate regional disparity, 4)south-south cooperation</p>	<ul style="list-style-type: none"> <li>• JICA Turkish Office</li> </ul>
<p>1.2 Adequacy of the project strategy</p>	<p><b>1.2.1 The project strategy</b></p> <p>The occurrence of mass mortality in 2004 was critical to inhibit the previous project outcomes and so it is reasonable that the countermeasures against VHSV and dropsy were focused on to cope with mass mortality. The study of VHSV and dropsy must have been the first necessary step in the situation mass mortality had not been studied. Many stakeholders thought that VHSV must be the causes of mass mortality since it was considered the extremely dangerous in European countries and that dropsy might have influenced to the mass mortality since the incidence of dropsy was critic in 2004. Through the project activities, the counterparts currently assumed that the causes of mass mortality were not VHSV and dropsy but parasite and bacteria. A clear perspective of the causes of mass mortality might be a greatest step towards sustainable seed production of Kalkan. That is a primary factor to judge the adequacy of the project strategy.</p>	<ul style="list-style-type: none"> <li>• PDMe, M/M</li> <li>• C/Ps and Expert</li> <li>• TUGEM, MARA</li> </ul>

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	<p>(+) The counterparts could continue to study the necessary field clarified by the project with improved skills and knowledge in order to mitigate mass motility of larvae and juveniles in the future.</p> <p>(-) However, the project contents was not adequately described as a plan and the terms of reference of each counterparts and experts are not in written format. It has created unnecessary confusion among the project member.</p>	
	<p><b>1.2.2 Advantage in Japanese technology</b></p> <p>(1) Japanese study in the field of VHSV is recognized as the top level in the world. Many empirical studies on VHSV have been conducted by Japanese.</p> <p>(2) The Japanese experts have high expertise in the field of VHS disease and protection. Their techniques, knowledge and experience were demonstrated through the project activities.</p>	<ul style="list-style-type: none"> <li>• PDMe, M/M</li> <li>• C/Ps and Experts</li> <li>• TUGEM, MARA</li> </ul>
1.3 Ripple effects beyond Target group	<p>1.3.1</p> <p>The project have favorable influence to the private sector and other institutions in the fishery sector</p> <p>(+) As the result of the project, the proof of little influence of Turkish VHSV infection to other species erase the private companies threat to promote Kalkan and encouraged them.</p> <p>(+) Fish aquaculture of kalkan in the experimental level, but CFRI has started provision of produced seeds to private companies according to their demand.</p> <p>(+) National organization including Bornova institute could obtain useful data and information on VHSV.</p>	<ul style="list-style-type: none"> <li>• PDME, M/M</li> <li>• C/Ps and Experts</li> <li>• TUGEM, MARA</li> </ul>
1.4 Total judgment of relevance	<p>Relevance of the project is judged high.</p> <p>The project indicates high relevance to the national development policy of the Republic of Turkey, JICA's cooperation strategy for Turkey, and the needs of CFRI and the private sector. It is also remarkable that Japan has a technological superiority and experience in VHSV study as well as the aquaculture of similar species of Kalkan.</p>	<ul style="list-style-type: none"> <li>• Evaluation study team</li> </ul>

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## 2. Effectiveness

Topic	Sub-topic and Result	Information Source
2.1 Achievement of project objective  <u>Project purpose</u> "Quality of produced seeds of Black Sea turbot is improved at CFRI"	2.1.1 (+) The project purpose was almost achieved mainly by the contribution of output 1. The study on dropsy is still on the way but the causes of dropsy were assumed and countermeasures against dropsy were developed to some extent. (See performance)	<ul style="list-style-type: none"> <li>• Evaluation study</li> <li>• C/Ps and Expert</li> </ul>
	2.2.2 <b>An inhibiting factor for the achievement of project purpose</b> (-) An inhibiting factor shown in the project is a short duration of the spawning season in 2006. There is little empirical studies in the field of dropsy and it needs several spawning seasons to identify dropsy pattern and develop countermeasures in general.	<ul style="list-style-type: none"> <li>• C/Ps and Expert</li> </ul>
2.3 Achievement of each Output	2.3.1 <ul style="list-style-type: none"> <li>• <b>Have VHSV been identified?</b></li> <li>• <b>Has prevention technique of horizontal and vertical transmission been established?</b></li> </ul> <p>Objectively verifiable indicators above were achieved. (See performance)</p>	<ul style="list-style-type: none"> <li>• C/Ps and Expert</li> <li>• Bornova research institute</li> </ul>
	2.3.2 <ul style="list-style-type: none"> <li>• <b>Has Dropsy pattern been studied?</b></li> <li>• <b>Has dropsy occurrence been identified?</b></li> </ul> <p>It was clarified that dropsy is not transmitted from broodstocks but occurred within about 10 days after hatched. one of causes of dropsy is assumed environmental stress (high cultivation density, handling and salinity) after a study. Survival rate of larvae and juveniles is supposed to raise if less-stressed environment for fish-culture was adopted. Dropsy occurrence was identified to some extent. If good quality of fertile eggs and hatched larvae were deliberately selected, dropsy occurrence rate will be expectantly reduced. However, dropsy identification usually needs a long time study and another couple of productive seasons are required to identify dropsy.</p>	<ul style="list-style-type: none"> <li>• C/Ps and Expert</li> <li>• Photos</li> <li>• morphosis cases of hatched larvae</li> </ul>
2.4 Inhibiting and promoting factors for achievement of each output	2.4.1 <b>Has the waste water treatment system been developed?</b> (+) The waste water treatment system designed and settled by a short-term expert had been functioned well. A mechanical engineer who was hired in the previous project regularly checks and maintains the system.  2.4.2 <b>Other factor?</b> (-) The spawning period was only 22 days (less than half of average period) in 2006 so that the project did not have a time to take the final examination to confirm the causes of dropsy.	<ul style="list-style-type: none"> <li>• C/Ps and Expert</li> </ul>
2.5 Total judgement of Effectiveness	The effectiveness of the project is judged high. The project with good performance to achieve its purpose is highly recognized. Through the project activities, the outputs shown in the PDMe have been obtained, and the outputs have effectively contributed to the project purpose although there is a limitation in countermeasures development against dropsy due to a shortage period of the project. However, the issues related to VHS were cleared and scientific articles about VHS was published and distributed to relevant organizations. In order to solve the issue of the mass mortality happened in 2004, the VHS and dropsy studies are judged an appropriate entry point. The C/Ps started recognizing other causes of mass mortality as the result of VHS and dropsy studies. They are now clear-sighted about what they will do for the next step to terminate mass mortality.	<ul style="list-style-type: none"> <li>• Evaluation study team</li> </ul>

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### 3. Efficiency

Topic	Sub-topic and Result	Information Source
3.1 Adequacy of inputs	<p><b>3.1.1 Adequacy of Japanese Experts</b> (expertise, timing, length of assignment, etc)</p> <ul style="list-style-type: none"> <li>• Long-term expert (seed production/fish disease) 24.3 MM</li> <li>• Short-term expert (2) (waste water treatment system, VHS counter measurement) 4.5 MM in total</li> <li>• Dispatch of a short-term expert (VHS countermeasure) was delayed than planned but it did not cause any problem in accordance with a late start of the spawning season in 2005.</li> <li>• Assignment duration of the short-term expert became longer than planned.</li> <li>• 13 out of 14 questionably answers supports the adequacy of the expertise, timing and length of assignment of Japanese experts</li> <li>• Communication issues were pointed out by C/Ps and the expert</li> </ul>	• C/Ps and Expert
	<p><b>3.1.2 Adequacy of Equipment</b> (type, quantity, timing, cost, maintenance and management)</p> <ul style="list-style-type: none"> <li>• Machinery as an amount of YTL 223,864 (JPY 17,7 mil) was equipped as scheduled (See ANNEX VI)</li> </ul> <p>(+/-)The project could effectively utilize the facilities and equipment which were settled in the previous project. However, negligence happened in the beginning of the project that some analysis equipment had not been used more than three years (2002~2005) and study activities had not been conducted. This issue was solved.</p>	• Equipment list • C/Ps and Expert
	<p><b>3.1.3 Was C/Ps training in Japan adequate?</b> (in terms of contents, duration, number of trainees, etc)</p> <p>(+/-) One C/P was trained in Japan in the framework of group training. It was useful for him to know general knowledge of fish aquaculture and Japan's situation but not particularly useful for improving his expertise of fish disease.</p> <p>(-) Some training schedule was not implemented as schedule. One C/P complained that her planned training in Japan was suddenly cancelled.</p> <p><b>Was C/Ps training in Turkey adequate?</b> (in terms of contents, duration, number of trainees, etc)</p> <p>(+) There was not a special training in Turkey, but mainly C/Ps in fish disease section were taken on-the-job training by a short-term expert. They mentioned the training was useful and effective.</p>	• C/Ps and Expert
	<p><b>3.1.4 C/Ps capacity</b> (number and expertise)</p> <p>(+) There are 16 C/Ps in the project, 5 among them worked temporarily. 7 out of 16 C/Ps were trained in the previous project (one of them attended a long term training) and continuously worked in the project (See C/Ps list).</p> <p>(+) 11 out of 15 answers in the questionnaire judged their professional field are appropriate.</p>	• C/Ps and Expert
	<p><b>3.1.5 Was Japanese side local cost sufficient?</b></p> <ul style="list-style-type: none"> <li>• Japanese input amount: YTL99,645 =JPY 7,9 mil. (as of 9 Aug. 2006)</li> </ul>	• C/Ps and Expert • Previous project data
	<p><b>3.1.6 Was Turkish local cost sufficient?</b></p> <ul style="list-style-type: none"> <li>• Turkish input amount: YTL 364,562=JPY28,8 mil. (as of 9 Aug. 2006)</li> <li>• Project Office and office supply</li> </ul> <p>(+) 14 out of 15 answers in the questionnaire survey suggest that the cost is appropriate.</p>	• Financial report made by Turkish side • CFRI annual budget • TUGEM • C/Ps and Experts

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<p>3.2 Contribution of Collaboration work with other actors</p>	<p>3.2.1 Was there any collaboration with other research centers?          • A few C/Ps including the director mentions that there was a collaboration work with Bornova Veterinary Control and Research institute in the field of virus study. However, the image of a collaboration is various, and the team can not find a clear fact of collaboration between CFRI and Bornova.</p> <p>3.2.2 Was there any contribution from fishermen or not?          (+) Some fishermen are cooperative to CFRI activities. They inform the project when a spawning season starts and number of Kalkan which were released.</p>	<ul style="list-style-type: none"> <li>• C/Ps and Expert</li> <li>• TUGEM</li> <li>• MARA</li> </ul>
<p>3.3 Were there any inhibiting factors in terms of efficiency?</p>	<p>(-) Trainings were conducted only in English and it was not sufficient for C/Ps.</p>	<ul style="list-style-type: none"> <li>• C/Ps and Expert</li> </ul>
<p>3.4 Total judgement of Efficiency</p>	<p>The Efficiency of the Project is judged very high.</p> <p>Relatively small scale input generates great outputs of identification of VHSV.</p> <p>One long-term Japanese expert and two short-term experts were dispatched as scheduled. According to the questionnaire and interview, most of the C/Ps indicated that the expertise of Japanese experts is adequate.</p> <p>Total number of 16 C/Ps have worked in the project and among them 5 C/Ps have worked partly (See Annex V). The remarkable feature of this project is that a half of the C/Ps were trained in the previous project could contribute so much to the project outcomes.</p> <p>Provision of equipment has been done as planned. Those facilities and equipment are well maintained by a mechanical engineer in CFRI with sufficient operational cost.</p>	<ul style="list-style-type: none"> <li>• Evaluation study team</li> </ul>

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#### 4. Impact

Topic	Sub-topic and Result	Information Source
4.1 Prospects for the achievement of Overall Goal	<b>4.1.1 Will Technical issues related to seed production be identified and be solved by C/Ps?</b> (+) Much stable seed production is expected as virus related issues have been solved and the causes of dropsy are almost identified.	• C/Ps and Expert
<b>Overall Goal</b> "Sustainable seed production of Black Sea turbot is developed"	<b>4.1.2 Are there any other necessary issues to achieve the overall goal ?</b> There are suggestions from C/Ps and expert as follows; <ul style="list-style-type: none"> <li>• Improving a survival rate of larvae/juveniles</li> <li>• Decrease mal-pigmentation and deformation</li> <li>• Feeding problem</li> <li>• study other fish diseases (bacteria and parasite disease)</li> <li>• C/SS' training in Turkey with mother language</li> <li>• Develop environment of information network in the field</li> <li>• A study of early kalkan life</li> <li>• improve eggs and larvae quality</li> <li>• improve water quality, filtration of intake water</li> </ul>	• C/Ps and Expert • TUGEM
4.2 Other impact	<b>4.2.1 Organizational Impact</b> (+) The status of CFRI has raised. CFRI was authorized for the first time by MARA as a fish disease laboratory due to high performance of the project. Their samples are utilized with as official data by MARA.	• CFRI Director
	<b>4.2.2 Technical Impact</b> (+) C/Ps had acquired fish disease diagnosis and protective techniques and those techniques related to VHS protection are expected to be useful not only for the seed production of Kalkan but other species. (+) Some C/Ps have confidence about their application of acquired techniques into the new disease in practice to some extent even if unknown fish disease is occurred. However, this depends on how much further study remaining are conducted by CFRI staff after the termination of the project.	• MARA • TUGEM • C/Ps and Expert • Private companies
	<b>4.2.3 Environmental Impact</b> (+) The water filtration system enabled disinfected water to pour into the Black Sea. There are only two institutes have waste water treatment system in Turkey. CFRI possessed it secondly after Bornova. Water sanitation system could be a favorable impact to the Black Sea environment and CFRI will be a good example of environment- oriented institute in Turkey.	• MARA • TUGEM • C/Ps and Expert
	<b>4.2.4 Social and Economic Impact</b> (+) When the mass mortality occurred in 2004, VHS was suspected to be a main cause, since VHS appeared in other European countries was considered extremely dangerous. As the outcomes of the project, It is proved that Turkish VHSV isolated did not induce mortality in turbot larvae and rainbow trout fingerlings. This authorization erased the threat of the private sector to produce Kalkan and encouraged them.	• MARA • TUGEM • C/Ps and Expert
4.3 Inhibited and effective factors	None	• MARA • TUGEM • C/Ps and Expert

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<p>4.4 Total judgement of impact</p>	<p>The project has generated very high impacts. Much stable seed production is expected since virus related issues have been solved and the causes of dropsy have been studied. Most of C/Ps answered in the interview that as the result of pathogenicity tests, VHSV which was isolated from wild fish in the Black Sea and did not induce mortality in turbot larvae and rainbow trout, sea bass and sea bream, and that these findings had so much impact to the private sector. The impact in technical aspect is considered extremely positive. Some private companies which are interested in Kalkan culture have re-started demanding fry from CFRI. It might need more time to measure the impact in socio-economic and environmental aspects, however, regarding negative impacts are not assumed from this project.</p>	<p>• Evaluation study team</p>
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## 5. Sustainability

Topic	Sub-topic and Result	Information Source
5.1 Organizational aspect	<p><b>5.1.1 Sustainability of CFRI</b></p> <p>(+) Due to information dissemination activities in the past, kalkan project has already recognized by the fishery sector. In addition, the status of CFRI has raised. CFRI was authorized for the first time by MARA as a laboratory due to high performance of the project. The improvement of CFRI's status has create preferable environment for the further study.</p> <p>(+) There are 104 staff in CFRI as of September 2006. 39 are technical staff and other 59 are administration staff and workers. 1 director and 2 deputy directors work in management line. The director has taken the roles of a "project leader", "project coordinator" and " hatchery manager" since January 2005 in the project. His high performance of management in the project was pointed out by several C/Ps in the interview. The Director also has a good relation with MARA.</p> <p>(+) Among 42 technical staff, 16 have involved in kalkan project. The knowledge and skills were shared somehow between C/Ps and other technical staff of CFRI. Technical extension and information dissemination activities are conducted both the project C/P and no-C/P staff.</p> <p>(+) TUGEM which recognizes the necessity of Kalkan production, has supported CFRI's activities related to Kalkan production for more than ten years. Their stance is expected not to be changed and to keep supporting CFRI at least in terms of a budget provision.</p> <p>(+) MARA has confirmed that the budget allocation to the future continuous project on culture of Kalkan.</p> <p>(+) C/Ps shows strong ownership in their work.</p>	<ul style="list-style-type: none"> <li>• MARA</li> <li>• TUGEM</li> <li>• C/Ps and Expert</li> </ul>
	<p><b>5.1.2 Collaboration with private sector</b></p> <p>(+) The contribution of the fishery sector to GNP is at the level of 0.40% in 2002. Since VHSV issue was cleared, some private companies have interest in producing Kalkan. Their demand of fry is increasing. The CFRI is the only institute which can provide fry, and a collaboration work with private sector is expected to advance more.</p>	<ul style="list-style-type: none"> <li>• MARA</li> <li>• TUGEM</li> <li>• C/Ps and Expert</li> </ul>
5.2 Financial Aspect	<p><b>5.2.1 Budget allocation to the program</b></p> <p>(+) The CFRI has already requested FY2007 budget to TUGEM and 3 year action program budget to TAGEM. They expect FY2007 budget for the Black Sea Turbot will become almost double of normal year due to the two budget sources. Past tendency of budget allocation is shown in ANNEX VII.</p>	<ul style="list-style-type: none"> <li>• MARA</li> <li>• TUGEM</li> <li>• C/Ps and Expert</li> </ul>
	<p><b>5.2.2 Current situation of the revolving fund</b></p> <p>(+) The CFRI keeps a revolving fund system. The small amount of the fund is utilized for study activities to some extent.</p>	
5.3 Technical Aspect	<p><b>5.3.1 C/Ps' skill, knowledge and attitude</b></p> <p>(+) C/Ps manage to take virus detection test and technology transfer in the aspect is completed. Skills and knowledge related to dropsy are to be transferred in the remaining period of the project. They are expected to continue dropsy study with visual materials to develop counter measures against dropsy.</p> <ul style="list-style-type: none"> <li>• As further development, a system for prevention against viral disease including VHS should be established and maintained in the CFRI.</li> </ul>	<ul style="list-style-type: none"> <li>• C/Ps and Expert</li> </ul>
	<p><b>5.3.2 Equipment and facility maintenance plan</b></p> <p>(+) Facilities are checked and maintained by a maintenance team consisting of 4 persons (1 mechanic engineer, 2 electricians and a person who in charge of pipe check)</p> <p>(+) Facility maintenance is conducted with Turkish budget every year.</p> <p>(+) CFRI has a plan of a big scale rehabilitation of facility from next year and already requested the budget to TUGEM. The director expects that at least 90 % of requested amount would be secured.</p>	<ul style="list-style-type: none"> <li>• C/Ps and Expert</li> </ul>

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5.4 Policies and systems	5.4.1 Laws and regulation are to be prepared or not • Turkish Government is making regulation related to fish disease counter action.	<ul style="list-style-type: none"> <li>• MARA</li> <li>• TUGEM</li> <li>• C/Ps and Expert</li> <li>• Private companies</li> </ul>
5.5 other inhabiting and promoting factors	None	<ul style="list-style-type: none"> <li>• MARA</li> <li>• TUGEM</li> <li>• C/Ps and Expert</li> </ul>
5.6 Total judgment of Sustainability	<p>Sustainability of the Project is considered very high.</p> <p>Due to information dissemination activities in the past, Kalkan culture projects have already recognized by the fisheries and aquaculture sector. Some fish firms have been provided fry and 2 out of them are planning to establish a commercial-base production. There is a high demand for Kalkan fry. MARA also confirmed that the budget allocation to the future continuous project on Kalkan culture.</p> <p>C/Ps' skills were improved including virus detection test and technology transfer was completed in this aspect.</p> <p>Activities related to dropsy counter-action are continuously studied by the end of the project period. Visual materials with photos are being prepared and C/Ps will manage to take countermeasures with the material if a new issue happens. However, a system for prevention against viral diseases including VHS should be established and maintained in the future.</p> <p>Facilities and equipment inputs in the past are appropriately maintained. Facility maintenance is conducted with Turkish budget every year.</p>	<ul style="list-style-type: none"> <li>• Evaluation study team</li> </ul>

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