



**Committee for the Evaluation of
Marine Sciences Research Centers in Israel**

Mediterranean Sea Research Center of Israel Evaluation Report

January 2018

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Chapter 1: Background and Procedures

The Council for Higher Education (CHE) and the Planning and Budgeting Committee (PBC) decided to evaluate the Mediterranean Sea Research Center of Israel and the Interuniversity Institute for Marine Sciences during the academic year of 2017/18.

Following the decision of the CHE and the PBC, the Vice Chair of the CHE together with the Chair of the PBC, appointed the following Committee:

- **Prof. Colin Brownlee – Committee Chair.** Director, The Marine Biological Association of the United Kingdom Professor within Ocean and Earth Science, National Oceanography Centre Southampton at the University of Southampton, UK.
- **Prof. Oscar Schofield** – Department Chair, Rutgers University, New Brunswick, USA.
- **Prof. Linda Duguay** – Director of the University of Southern California (USC) Sea Grant Program and Director of Research for the Wrigley Institute for Environmental Studies at USC, USA.
- **Prof. Peter Schlosser** – Department Chair of Earth and Environmental Engineering, Deputy Director and Director of Research, The Earth Institute, Columbia University, USA.
- **Prof. Michael Kingsford** – Distinguished Professor, College of Science & Engineering, James Cook University, Australia.

Ms. Molly Abramson served as the Coordinator of the Committee on behalf of the CHE.

Within the framework of its activity, the Committee was requested to:¹

1. Examine the submitted documents and conduct on-site visits for each center.
2. Submit to the CHE and the PBC an evaluation report of the research centers, including the Committee's findings and recommendations.

The Committee held its first meetings on 15.10.2017, during which it discussed fundamental issues concerning higher education and research in Israel, the quality assessment activity, as well as the field of Marine Sciences in Israel.

In October 2017, the Committee held its visit of evaluation to the Mediterranean Sea Research Center of Israel and the Interuniversity Institute for Marine Sciences. During the visit, the Committee met with various stakeholders at the research centers, including management and researchers. This report deals with the Mediterranean Sea Research Center of Israel, which the committee visited on 16-18.10.17.

The schedule of the visit is attached as **Appendix 2**.

The Committee thanks the management of Haifa University and the Mediterranean Sea Research Center of Israel for their cooperation and hospitality towards the Committee during its visit at the center.

¹ The Committee's letter of appointment are attached as **Appendix 1**.

Chapter 2: Evaluation of the Mediterranean Sea Research Center of Israel and Recommendations

This Report relates to the situation current at the time of the visit to the center and does not take account of any subsequent changes. The Report records the conclusions reached by the Evaluation Committee based on the documentation provided by the center, information gained through interviews, discussion and observation as well as other information available to the Committee.

1) Executive Summary

Mediterranean Sea Research Center of Israel (MERCİ) has been established following a sound rationale to position Israel's marine science community for the challenges posed by strategic and fundamental issues in marine science resulting from past, present, and future developments in the Eastern Mediterranean Sea. The MERCİ program has resulted in significant improvements in infrastructure that are considered to be essential for achieving of Israel's scientific goals. The quality of science produced by the individual groups working under the MERCİ umbrella is uniformly high and in several cases outstanding. The investment provided through the CHE has been matched by contributions from participating partners and can be considered to represent good value for CHE's investment of 20 million NIS. Substantial added value was provided through additional funds from both external sources and the partner institutes that increased the total budget to 60 million NIS. The Evaluation Committee noted, however, that the lack of a comprehensive national marine science program and a coordinated management strategy was impeding the ability of the marine science community to utilize and further develop the infrastructure effectively. This was most apparent when considering the large sea-going items of infrastructure, including the major research vessel. A number of recommendations have been made to ensure that Israel's marine science community will be able to fully utilize the available infrastructure. These include the establishment of an international Scientific Advisory Committee and the development of science themes and priorities around which collaborative research can be coordinated effectively, allowing the marine science community to speak with one voice. While there are clear signs of collaboration across the component organizations, better coordination and management through the Scientific Committee would ensure effective delivery of both fundamental science and strategic research responsive to national needs. A number of further recommendations have been made regarding academic faculty, local, regional and international collaboration, management and organizational structure, and effective utilization of the infrastructure.

2) Scientific Research and Development

Background

Israel's Exclusive Economic Zone (EEZ) holds critical resources including natural gas and is undergoing rapid change as a result of human impacts that include a warmer climate, increasing pollution, changes in ecosystem function and services, fisheries, shipping, and tourism, among other factors. Taking advantage of new resources and at the same time protecting natural resources in the coastal oceans and deep sea in Israel's EEZ urgently requires deeper understanding of the present and projected future state of the marine systems in the eastern Mediterranean and the Red Sea on rapid time scales of years to one or two decades.

The capacity needed to underpin the knowledge base required for science-based input into the decision making processes of governments and other stakeholders cannot be provided by one institution alone. Rather, the combined intellectual resources and infrastructure of all major relevant marine science entities, including the provision of access to deep sea environments has to be utilized in a coordinated national effort to address these challenging questions.

Evolution

The response of Israel's marine science community to the challenges of a changing marine environment within its Mediterranean EEZ is the creation of a large program primarily focused on acquisition of new infrastructure that would provide its marine science institutions with the means to tackle such a challenge. This initiative was triggered by the discovery of the offshore Tamara gas field around 2009. Following a report by the Israel Academy of Science drawing attention to the urgent need of a response to the rapidly growing pressures on the marine systems of the Eastern Mediterranean, a request for proposals for a major initiative was released in 2012. A proposal of a consortium of 9 partners from academia and government agencies – MERCI – was selected in a competitive process and supported with funding starting in 2012.

Vision and Goals

MERCI is driven by the vision to create a forward-looking, modern marine science capability. The ultimate goal of this initiative is to understand trajectories towards a sustainable marine coastal and deep-sea environment within the Israeli EEZ and beyond. Such an effort is timely and important and bridges basic and applied research, as well as monitoring of critical elements of the marine system of the eastern Mediterranean off Israel's coast guided by society's need for sustainable use and management of the marine system and its resources and values.

The three main objectives of MERCI include:

- 'Developing modern, scientific infrastructure needed to study the coastal and offshore Eastern Mediterranean
- Educating and training a new generation of scientists and researchers who will serve as Israel's decision makers in academia, the government, industry and NGO's
- Ensuring sustainable development of Israel's national resources in the Eastern Mediterranean'

The consortium includes virtually all entities involved in Israel's marine science and education community in a major national initiative. The overall quality of the research performed by these institutions is high and most of the research addresses aspects of the MERCI mission.

Strategy and present status

The strategy pursued by MERCI has been to first enhance and modernize the existing infrastructure for multidisciplinary field and laboratory-based research to address a broad set of problems in marine science. The acquisition "of new state of the art equipment" was guided by MERCI's Scientific Committee with representation from all consortium partners. It was supported by the PBC grant to MERCI and matching resources from all the institutions involved in MERCI. The total matching resource significantly exceeded the resources from the PBC providing further evidence for the strategic importance of MERCI to Israel's marine science institutions. Virtually all of the infrastructure components have been delivered and most of them have been tested. The infrastructure covers a large range of instruments and platforms, some of which require substantial resources for operation and maintenance. The infrastructure acquisition has exhausted all of the initial funding of MERCI and at this time no PBC funds are left in the consortium to take the next steps in the development of MERCI to a fully functioning entity. In essence this situation puts at least part of the infrastructure investment at risk.

Next steps

The next step in the implementation of MERCI is to achieve full utilization of the new infrastructure by the members of the consortium to enhance the research activities and related productivity. The MERCI Scientific Committee understands this necessity but so far does not seem to have taken significant steps towards this goal. There seems to be a perception that this step can only be done if new resources are allocated. The MERCI Scientific Committee has not developed or sought consultation to develop a comprehensive, coordinated strategy for the development of marine science at the national level.

3) Management and Organizational Structure

The MERCI Center is administered at Haifa University (HU) by the Director of the Charney School for Marine Sciences, who is also the Director of MERCI. He is assisted by a Technical Director and two administrative staff members, all staff of Haifa University. MERCI as such reports through the Rector of Haifa University and is managed financially at Haifa University. Haifa University and the current MERCI Director, along with founding members of the consortium, were the initiators of the proposal which was submitted to fund and support MERCI and they are to be commended for their achievement in securing funding to advance ocean science infrastructure and education in the Eastern Mediterranean.

The organizational structure comprises a Scientific Committee, Chaired by the MERCI Center Director, as well as a Teaching Committee both composed of appointed members of the participating Universities and Government Agencies – one University and one college were not part of the original proposal and joined the consortium only recently. It was unclear how often the Scientific Committee meets, but apparently at least twice a year at a minimum currently and more frequently during the initial years (every other month). The Teaching Committee is active in providing research and travel support as well as workshops and training programs for graduate students and post-docs.

The majority of funding and decision making over the 5 year period since funding for MERCI commenced has focused on the acquisition of supporting infrastructure and equipment. Universities submitted requests for individual pieces of equipment that were reviewed by the Scientific Committee members. The majority of the equipment is, or soon will be, in place at the respective institutions. A major ocean going research vessel has also been acquired over this time period and is being operated by the Israel Oceanographic and Limnological Research Institute (IOLR), a government agency located in Haifa. The IOLR also houses at the National Institute of Oceanography (NIO) (in space renovated in collaboration with Haifa University) the major pieces of Oceanographic equipment including the 3 gliders, ROV, AUV, and Buoys. There have been some preliminary cruises to test the various pieces of oceanographic equipment to date but no specific coordinated studies have as yet been executed or even proposed.

There was concern in the Evaluation Committee about the lack of focus on the development of a strategic vision/plan for MERCI over the 5-year period of equipment acquisition. The degree of engagement with various potential stakeholders (various ministries, gas companies, health agencies, fisheries) or consultation with other international collaborators for advice is not clear. The management and scientific advisory committee have not developed the overall vision and strategy for fully utilizing the equipment that has been acquired by the various institutions. There are many small groups of marine/ocean scientists scattered throughout the various partners and MERCI has now brought them together in a consortium although it is not always clear how new hires at the

various institutions have been integrated into MERCI. With a potentially wide range of areas for investigation (e.g. deep sea oceanography, physical oceanography and modeling the eastern Mediterranean, biological diversity, biogeochemical cycling, climate change impacts) there is a need to formulate future plans on how they will be addressed in a coordinated manner. The Evaluation Committee noted the concern that the initial 3-year budget had expired but also noted that there did not appear to be a coordinated strategy to secure longer-term funding other than by the usual routes through grant-awarding agencies such as the Israel Science Foundation. Generally these funding awards to faculty in their current form are not sufficient in size to utilize the MERCI infrastructure.

4) Faculty

Existing faculty

A very strong cohort of researchers underpins research within MERCI. Thirty-eight leading researchers are listed and 187 researchers are associated with the Center, distributed across the partner organizations. Of the leading researchers, the information provided in the CVs and individual presentations demonstrates an excellent and in many cases outstanding portfolio of research expertise and achievement.

New faculty

A number of new research faculty positions have been created to complement the infrastructure allocated to MERCI. These represent approximately 21% of the total MERCI budget. An additional allocation of 2.4% funds technical staff related to the infrastructure. Fifteen new faculty members and 3 technical staff have been recruited during 2013-2015. All of the academic staff positions were funded directly by the partner institutions. While on first glance it appears that the majority of these are a direct consequence of the PBC funding for MERCI, it was clear that a number of these positions would have been created irrespective of MERCI funding. The breakdown of new full time equivalent (FTE) staff members per institution is: Haifa University 10, Technion 4, Hebrew University of Jerusalem 1.8, Tel Aviv University 2, Ben Gurion University 1, Weizmann Institute 0.6, Bar-Ilan University 0. This investment represents significant added-value to the PBC funding for infrastructure. It was not, however, possible to assess the stature of the newly appointed staff since their CVs and areas of expertise were not provided.

The overall distribution of research expertise areas matches well the distribution of infrastructures provided by MERCI. The new appointments provide significant resource to address the likely increased requirements for oceanographic expertise in Israel. It is not clear whether the new appointments will address the specific research priorities of MERCI since they have not been properly defined.

Academic staff largely comprise Israeli nationals. There could be opportunities for increasing the international reach of the Centre through the appointment of more international researchers.

Leadership and management

MERCI scientific leadership is provided through the Scientific Committee. The Director of MERCI acts as the Chair of the Committee. Insofar as MERCI leadership will evolve, it was not clear how the individual researchers at different levels contribute to development of strategic direction and setting of priorities. While there were clear signs of collaboration across programs, the level of integration between staff of the partner organizations was often less clear. Most researchers currently work relatively independently in their own institutions. There is significant scope for the formation of focus groups that address specific themes and priority setting. The complement of staff appears to be well equipped to address future needs in terms of expertise available. However, management of that expertise will need to be addressed in order to provide sufficient flexibility to respond to strategic issues as they arise.

Researcher morale and enthusiasm for MERCI, as assessed from presentations and discussions appears to be high amongst all partner organizations. There was strong support for the development of an academic Center of Excellence, or intellectual school that brought MERCI researchers together to address specific science questions.

Staff support

The career development and progression of individual staff members is managed through the individual partners. Newly recruited staff were not selected through a common mechanism and there was no general call for new staff to join MERCI as a Centre. Different organizations appear to have set different criteria, for example in prioritizing individual academic excellence or fit to specific strategic needs in appointing new staff.

There was a good culture of support for academic staff. Technical support was also strong across the partners. Access to PhD and Masters level students was good and MERCI offered a number of ways in which this could be facilitated. However, academic staff from partner(s) that do not have a strong focus on oceanography noted that support from their host institution could be improved.

It was acknowledged that the sustainability of expertise to address problems relating to the deep waters of the eastern Mediterranean requires continuity of training. This involves the need to captivate potential researchers at the undergraduate level through the development of appropriate study programs through the MERCI partner institutions.

It was suggested that future hiring could be coordinated at the MERCI level rather than through individual organizations, or at least the MERCI scientific management could contribute to the selection of new staff that would align with strategic intent.

5) Local, Regional and International Cooperation

The Mediterranean is a strategic asset to Israel which will only increase in importance in the future providing food, water, commerce energy and security. To manage these resources will require modernization of the countries oceanographic capacity and collaboration across local-regional and international scales. These collaborations will need to span universities, national agencies, and industry. Developing these partnerships will be critical to understand and manage Israel's EEZ, allow access across multiple EEZs, understand global drivers and feedbacks with local systems, enable safe efficient sustainable commerce, and leverage expensive technologies, expertise, platforms and data systems. Historically, the oceanographic community in Israel has been distributed across the many Universities in Israel, and collaboration has generally been on project-by-project basis.

MERCI is making good progress at addressing this historical legacy by fostering collaboration at many scales. Within Israel, MERCI is to be commended for bringing the distributed university community together within a consortium that has acquired modern oceanographic infrastructure. Additionally, the inclusion of the Geological Survey of Israel (GSI) and the IOLR, in particular the housing of key infrastructure at the IOLR ensures active collaboration with national operational entities. This collaborative network should strengthen as MERCI moves into an operational stage. The Eastern Mediterranean is shared with a number of countries and regional collaborations are subject to geopolitical realities, however MERCI is to be commended for efforts to bring together countries to expand dialog and collaboration through two international meetings. Global collaboration is being fostered through international programs being developed by MERCI scientists and through partnering with international partners such Global Ocean Observing System (GOOS) and or joining international research consortiums (such as the European Consortium for Ocean Research Drilling, ECORD). However, it is noted that funding for ECORD membership is not continuing. Sustaining and maintaining these regional and operational partnerships needs to be fostered and expanded. These partnerships will also be critical to ensuring the graduate and undergraduate training is relevant and providing employable skills in the future.

6) Infrastructure

The international Law of the Sea treaty requires that all countries must demonstrate an ability to study and understand the resources of their EEZs. Most of Israel's Eastern Mediterranean EEZ, and new gas fields, are found in water depths of 500 to 2500 meters. Prior to funding through MERCI, no infrastructure was available for Israel to explore and understand biological, chemical and physical conditions of substantial areas of the EEZ. Equipment was required to access deep sea habitats and a substantial platform in the form of a research vessel was required to deploy most equipment. In addition, Israel had poor access to modern highly cost-effective oceanographic equipment, such as fixed oceanography buoys, gliders and AUVs that could provide high resolution oceanographic data through automated instruments over broad spatial scales.

The collection of samples allows some questions on marine resources to be addressed, but laboratory equipment is also required for specialized tasks that include, for example: elemental analyses, genetic analysis, wave and flume tanks, membrane separation techniques and specialized microscopes.

The importance of infrastructure acquisition for marine research was recognized to the extent that it comprised 68% of the total MERCI budget. The Council of Higher Education, through PBC, contributed 17.8 million NIS that in turn successfully levered a further 50.7 million NIS from the seven partner Universities for a total of 68.5 million NIS.

The infrastructure purchased is dispersed amongst the seven partner organizations (MERCI *Evaluation Report* Appendix 1 – MERCI Resource Allocation). Many items of equipment resulted in leverage of supplementary support funding from a single institution (e.g. ICP-MS, Weizmann Institute), Certain large and expensive items were co-funded by more than one institution (gliders: Weizmann Institute; Bar Ilan University, the Hebrew University of Jerusalem) and most of these are housed at IOLR. The IOLR facility provides easy access to port facilities of Haifa and is a logical location for the technical support required for large equipment such as the ROVs and AUVs. Although funding was provided through CHE, other relevant parties have access to the infrastructure and collaborate (e.g. GSI, IOLR). Accordingly, most of the equipment purchased through the MERCI initiative would be considered to contribute to a national marine science facility.

The infrastructure purchased has clearly enhanced Israel's capability to explore the EEZ and pressing issues concerning the marine environment to be addressed. Furthermore, access to the deep sea is considered critical and, therefore, a sophisticated platform, the RV Bat Galim (38.9 meters long research vessel) was purchased. The vessel was obtained by the Department of Energy from the Department of Defense and is now managed by the IOLR. At the time of the review the vessel had been used (at \$15,000 US per day) for 40 days in 2016 and 60 days in 2017 (50:50; by MERCI researchers and IOLR). This number of days is very

low and does not currently represent value for money, given the investment made, especially given that vessels of this size are almost as expensive when docked as when they are when in use. Although another vessel, RV Mediterranean Explorer, is available at approximately \$5,000 US per day, it is not suitable for deployment of large equipment such as the ROV.

Charges for access to much of the new infrastructure are high, albeit cheaper for MERCI members (p. 16 of the MERCI Evaluation Document). In most cases significant external funding through grants and strategic funding will be required to meet costs and maximize use of the equipment. Existing funding mechanisms, for example through the award of ISF grants cannot provide sufficient funds for existing vessel costs, and there is no alternative agency that could provide funds to address strategic issues relating to the Eastern Mediterranean.

7) Recommendations for MERCI

<u>Recommendations</u>	<u>Essential/Important/Desirable</u>
Scientific Research and Development	
1. The establishment of MERCI offers the opportunity to develop an integrated national program for Israel’s marine sciences. The further development of MERCI should take place in the context of the vision for such a national strategy.	<i>Essential</i>
2. The Scientific Committee should define the scientific questions to be addressed by MERCI grouped in a set of themes. These questions and themes can largely be derived from the overall vision of the initial proposal but require further refinement and specificity. They should be formulated with optimal use of the new infrastructure and international collaborations in mind.	<i>Essential</i>
3. The development of the science plan should commence immediately so that the infrastructure can be used effectively. Similarly, a concept for resourcing MERCI in a fashion that allows utilization of the infrastructure investments to their full capability should be developed on a short time line. The provision of further funding by the PBC (see recommendation 15) should be conditional on meeting the above recommendations.	<i>Essential</i>
Management and Organizational Structure	
4. An international External Advisory Committee composed of experts covering the major disciplines, as well as potential local stakeholders should be established as a matter of priority to help guide and review overall progress and programs.	<i>Essential</i>

5. Working groups established to develop proposals around thematic areas should utilize the expertise of newly hired faculty members. Working groups would report to the Scientific Committee who would in-turn be guided by the External Advisory Committee.	Important
6. A forward-looking communication, media, social media and outreach plan should be developed. This should include improvements to the MERCI website and branding of MERCI to the national and international scientific community, stakeholders and the Israeli public.	Important
7. Networking opportunities should be coordinated in order to better integrate MERCI and other aquatic scientists throughout Israel. These could include focused Town Hall meetings and specific science sessions at the annual Israel Aquatic Sciences Meetings. Networking opportunities with stakeholders and government representatives should be promoted.	Desirable
Faculty	
8. A national marine science program incorporating a MERCI intellectual school to which all MERCI academic staff belong and contribute in a positive way should be established. Appropriate study programs should be developed with the partner institutions in order to provide undergraduate and postgraduate training to meet increasing demands for expertise in marine and related sciences.	Important
9. A plan that defines the role of academic researchers and scientists in developing research strategy and setting priorities across MERCI should be developed	Desirable
10. Activities to improve integration of individual researchers with MERCI in their host institution should be established.	Desirable
11. The international complement of academic researchers should be expanded through wider appointment of international postdoctoral workers and new academic staff. Targeted recruitment should be considered.	Desirable
Local, Regional and International Collaboration	
12. Mechanisms to ensure international engagement should be established and maintained through existing international structures. The recent inability to maintain an Israeli ECORD membership illustrates the need to establish procedures and reserves to maintain continuity and international presence.	Important

13. Key science themes of MERCI, when established, should be publicized to the international community to entrain the relevant leading researchers.	Important
14. Mechanisms should continue to enable Israeli graduate students to attend international/meetings through fellowships and related funding schemes.	Desirable
Infrastructure	
15. Resources for the operation of the new infrastructure are urgently needed and should be made available to MERCI. The allocation of these resources can be via a number of possible funding models. Operation of some of the major infrastructure components (e.g., the research vessel) or platforms (e.g., ROV and gliders) require a funding model that is tailored to their specific requirements. The resources for the operation of these infrastructures should be separated from conventional individual research proposals that typically have budgets too limited for operation of large equipment. Determination of the amount of funding required for the large infrastructure components should be guided by the science plan developed by the Scientific Committee.	<i>Essential</i>
16. A mechanism should be developed by the Scientific Committee with the vessel operators for increased ship time on the RV Bat Galim so that infrastructure such as the ROV can be deployed and value of the vessel maximized.	Important
17. The Scientific committee should foster greater engagement with industry (especially oil and gas) would help to support the use of high value deep-sea equipment; this in turn would create opportunities for researchers and help to cover costs.	Desirable
18. Infrastructure available, costs and operational issues (e.g. vessel bookings) should be a component of the developing communication strategy (see recommendation 6).	Desirable

Signed by:



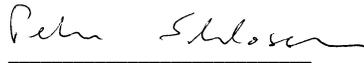
Prof. Colin Brownlee - Chair



Prof. Oscar Schofield



Prof. Linda Duguay



Prof. Peter Schlosser



Prof. Michael Kingsford

Appendix 1: Letter of Appointment



Prof. Colin Brownlee
Director, the Marine Biological Association of the United Kingdom
Professor within Ocean and Earth Science
National Oceanography Centre Southampton at the University of Southampton,
UK
Committee Chair

October 2017

Dear Professor Brownlee,
The Israeli Council for Higher Education (CHE) strives to ensure the continuing excellence and quality of Israeli higher education through a systematic evaluation process. By engaging upon this mission, the CHE seeks: to enhance and ensure the quality of scientific research and academic studies, and to ensure the continued integration of the Israeli system of higher education in the international academic arena.

As part of this important endeavor, we reach out to world-renowned scholars to help us meet the challenges that confront the Israeli higher education by accepting our invitation to participate in our international evaluation panels. This process establishes a structure for an ongoing consultative process around the globe on common academic dilemmas and prospects.

We therefore deeply appreciate your willingness to join us in this crucial enterprise.

It is with great pleasure that I hereby appoint you to serve as the Chair of the Council for Higher Education's Committee for the Evaluation of Research Centers in the field of Marine Sciences in Israel. In addition to yourself, the composition of the Panel will be as follows: Prof. Oscar Schofield, Prof. Linda Duguay, Prof. Peter Schlosser and Prof Michael Kingsford.

Ms. Alex Buslovich-Bilik will be the coordinator of the Committee.

Details regarding the operation of the committee and its mandate are provided in the enclosed appendix.

We wish you much success in your role as a member of this most important committee.

Sincerely,

Prof. Ido Perelman
Vice Chair,
The Council for Higher Education (CHE)

Prof. Yaffa Zilbershats
Chair,
The Planning and Budgeting Committee (PBC)

Enclosures: Appendix to the Appointment Letter of Evaluation Committees

cc: Dr. Varda Ben-Shaul, Deputy Director-General for QA, CHE
Ms. Alex Buslovich-Bilik, Committee Coordinator

Appendix 2: Visit schedules

Schedule of site visit MERCI		
Monday, 16.10.17		
Time	Subject	Participants
09:30-11:00	Meeting with the Head of Merci	Prof. Zvi Ben-Avraham, Mrs.Sharon Liper, Dr. Yizhaq Makovsky, Mrs. Linur Liebes A 20 min presentation can be present after that Q&A Room 108 Haifa University
11:00-12:00	Meeting with president and Rector of Haifa University (founding member) *	Prof. Ron Robin, Prof. Gustavo Mesch Room 108 Haifa University
12:00-13:00	Lunch	Closed-door meeting of the committee
13:00-15:00	Meeting with the Scientific committee	Room 108 Haifa University
15:00-15:45	Meeting with leading researchers (Weizmann) *	Prof. Aldo Shemesh Room 108 Haifa University
15:45-17:15	Meeting with leading researchers (HU) *	Dr. Michael Lazar, Dr. Dan Tchernov, Dr. Gil Gambash, Dr. Yizhaq Makovsky, Dr. Tali Treibitz Room 108 Haifa University
17:15-18:00	Meeting with the Head of Merci	Prof. Zvi Ben-Avraham, Dr. Yizhaq Makovsky, Room 108 Haifa University
Tuesday, 17.10.17		
09:30-11:00	Tour in major Merci facilities	Location Technion Uri Shavit's lab - Agricultural Engineering Building
11:00-12:00	Meeting with leading researchers (Technion) *	Prof. Yehuda Agnon, Prof. Yoav Schechner, Dr. Uri Kushnir, Professor Emeritus Miky

		Stiassnie, Assoc. Professor Uri Shavit, Assis. Professor Guy Ramon, Assoc. Professor Nitai Drimer. Technion - Water Institute 4 th floor
12:00-13:00	Meeting with leading researchers (HUJI) *	Prof. Hezi Gildor, Dr. Yeala Shaked, Dr. Nir Keren, Prof. Amotz Agnon Technion - Water Institute 4 th floor
13:00-14:00	Lunch	Closed-door meeting of the committee
14:00-14:45	Meeting with leading researchers (BGU) *	Prof. Sigal Abramovich, Prof. Orit Sivan (?), Prof. Uval Golan Technion - Water Institute 4 th floor
14:45-15:45	Meeting with leading researchers (TAU) *	Dr. Yaron Toledo, Prof. Micha Ilan, Prof. Moshe Reshef Technion - Water Institute 4 th floor
15:45-16:30	Meeting with leading researchers (GSI)*	Dr. Zohar Gvirtzman, Dr. Oded Katz, Dr. Orit Hyams, Dr. Onn Cruvi, Dr. Rivka Amit Technion - Water Institute 4 th floor
Wednesday, 18.10.17		
09:00-10:30	Tour in major Mercia facilities	Location IOLR
10:30-11:30	Meeting with leading researchers (Israel Oceanographic and Limnological Research) *	Prof. Herut Barak, Dr. Kress Nurit, Dr. Rahav Eyal, Dr. Rilov Gil, Dr. Silverman Jacob (Jack), Dr. Tibor Gideon IOLR
11:30-12:30	Meeting with leading researchers (BIU) *	Prof. Yishai Weinstein, Prof. Steve (Shlomo) Brenner, prof. Ilana Berman-Frank, prof. Zvy Dubinsky, Dr. David Iluz IOLR

12:30-13:30	Lunch	Closed-door meeting of the committee
13:30-14:30	Meeting with educational committee	Prof. Ilana Berman-Frank, Dr. Michael Lazar, Prof. Sigal Abramovich, Assis. Prof. Dan Liberzon, Prof. Gitai Yahel, Dr. Rilov Gil, Dr. Oded Katz IOLR
14:30-15:15	Graduate students	
15:30-17:00	Summation meeting with the Head of Merc	Prof. Zvi Ben-Avraham, Mrs. Sharon Liper, Dr. Yizhaq Makovsky, Mrs. Linur Liebes IOLR