





PHILIPPINES -----



Developing awareness and participation amongst fishers in Sabah, Malaysia of the value of TEDs in conserving sea turtles

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1.0 Background

Marine turtles are integral components of the Sulu-Sulawesi marine ecosystems, and provide tangible eco-tourism related services as well as supporting cultural and traditional values. Marine turtles also possess, through their charismatic qualities, an ambassadorial value to wider conservation issues. The conservation of marine turtles is thus a critical step in promoting conservation of the wider Sulu-Sulawesi marine Seascape.

Turtles are currently being decimated indirectly through mechanised fisheries, at an alarming rate – recent estimates in Sabah alone project mortalities of upwards of 2000 to 3000 animals per year (Pilcher et al. 2009). The reduction of mortality in fisheries, particularly trawl fisheries, is thus a top priority. Trawl fisheries are considered one of the world's greatest fisheries-related threats to sea turtles (NRC 1990) but practical low-cost solutions exist in the form of Turtle Excluder Devices. A TED consists of a metal grid and an escape chute which fits into a shrimp trawl net to allow fishermen to continue fishing while giving turtles a chance. Because sea turtles are reptiles and need



A trawl net being deployed off a Malaysian shrimp trawler

to surface to breathe, they are often drowned unintentionally in trawl fisheries. TEDs are mandatory in the US to protect turtles, and the US is helping other countries get TED compliant, Sabah.

Work on the introduction of Turtle Excluder Devices (TEDs) in Sandakan has been ongoing now since 2007 through the Marine Research Foundation and the Sabah Department of Fisheries, primarily dealing with awareness and pilot trials, and this project contributes towards this effort. This work was funded initially by the GEF Small Grants Programme (SGP) Malaysia and continues now with support from CI Philippines. Following the outcome of the WTO trade issues and the US requirements for compliance with P.L. 101-162 with regard to TEDs and shrimp trawling operations, this project was developed to evaluate the use of TEDs in Sabah, Malaysia in such a manner as they did not conflict with fisher needs and income generation capacity. The project is now implemented by the Marine Research Foundation and the Sabah Department of Fisheries, with the blessing of the Sabah Fishing Boat Owner's Association, to evaluate the effects of TEDs installed on Malaysian trawlers on catches, bycatch reduction and turtle conservation, and to investigate the obstacles that might arise in the their use, and enforcement of their use in Sabah trawl fisheries. This project addresses sea turtle conservation Objective 1 (Reduce direct and indirect causes of sea turtle mortality) of Malaysia's National Plan of Action (NPOA; DoF Malaysia 2008), and the recently adopted tri-partite Regional Action Plan for the Conservation of Marine Turtles and their Habitats in the Sulu-Sulawesi Seascape (Pilcher 2009), and supports the goals of the ASEAN MoU on Sea Turtle Conservation.



The increased exposure to the process, through direct fisherman-to-fisherman interactions, provides greater recognition of the values of TED use and the historical stumbling blocks which were overcome in a TEDcompliant fishery, valuable lessons which brought back and introduced in Sabah can impact fisheries profoundly. Additionally, the awareness generated through a video which documents turtle escapes through a TED, using a local boat with local crews, is expected to foster a greater appreciation and acceptance of the technology amongst local fishers. The long-term goal of this programme is to ensure turtle populations continue to fulfil their ecological roles, through a completely TED-compliant fishery in those areas where it is necessary, possibly linked to time-area closures to prevent turtle mortality in fishing efforts. This TED-compliant fishery will ensure continued stability or growth of turtle populations by reducing at-sea mortality and allowing natural replenishment rates to drive population growth. The activities undertaken as part of this project component (a site visit programme to provide direct fisherman-to-fisherman interactions, and the development of an awareness video on the operation of TEDs) will contribute to the conservation of marine turtles in the Sulu Sulawesi Seascape Marine Turtle Conservation Corridor.

The project component was designed to enlighten key players in Sabah fisheries of the potential benefits of TED use through a site visit to an existing TED-compliant nation, and a larger fraction of the fishing community is exposed to TED applications though a locally-developed film detailing their use and benefits. Plans were also made to showcase the film in Kudat and Sandakan, two key project towns.

Finally, a side objective of the project was to develop and sign a Memorandum of Understanding between MRF and the Sabah Fisheries Department, a government to NGO agreement, which codified and clearly documented the nature of the symbiotic working arrangement.

2.0 Project Implementation

The site visit was coordinated with the US State Department, the Embassy of the United States in Kuala Lumpur, and the US National Marine Fisheries Service, National Oceanic and Atmospheric Administration, to host the visiting team over a one-week period and discuss implementation of TED programmes, and allow on-board trials to demonstrate the deployment of TEDs in a TED-compliant fishery. The visit took key fishers from Sandakan and Kudat, and two Fisheries Department officials to one of the major fishing areas in the United States (Mississippi, with side visits to Alabama) and provided onboard experiences as well as direct personal interactions amongst both fishermen and



Members of the Malaysian delegation posing with Ambassador James Keith at the US Embassy in Kuala Lumpur

regulators. While the completion of the site visit itself is a measure of success in itself, the fact that the fishers are already sharing their experiences amongst a wider audience in Sabah is undeniably one of the indirect benefits of this approach to technology and knowledge transfer.

The video was developed in Sabah in July 2009, after a long-awaited good weather window, using a fishing vessel and crew provided by Hail Leng Enterprise Sdn. Bhd. who's Managing Director (Chua Yau Tsen) was one of the participants on the site visit. Chua has been a stalwart of the TEDs project since its inception. The video was produced by Scubazoo Images Sdn. Bhd., a world-renown and Sabah based production house. Their films have been widely featured on National Geographic, Animal Planet, the BBC, and a host of other networks, and they have worked with MRF in the past to document projects in Malaysia, the Maldives, Vietnam and Papua New Guinea. The awareness video is some 6-7 minutes in length, and documents the escapes of turtles and debris from a typical trawl fishing net, using local crews and vessels. Many local fishers have suggested that these TEDs were 'designed for foreign boats' and not suitable for local boats. The video aims to now reverse this point of view.

3.0 Project Results

3.1 Site Visit to NMFS Pascagoula laboratory

The US National Marine Fisheries Service liaised on the project's behalf with the US Department of State and the US Embassy in Kuala Lumpur to facilitate an official invitation for the delegation and the issue of visas. The Malaysian delegation were hosted by the US Ambassador to Malaysia, H.E. James R. Keith, on the day visa applications were made, who was extremely interested and supportive of the project and wished all of the members of the delegation a safe and productive visit.



Members of the team aboard the R.V. *Caretta* on day one inspecting a Ted prior to deployment.

NOAA's National Marine Fisheries Service, particularly their Harvesting Systems Branch in Pascagoula MI, has been helping the Marine Research Foundation in Sabah get TEDs acceptable to local fishers, in partnership with the Sabah Fisheries Department since 2007. Amongst ongoing aspects of this work, in May 2009 MRF brought the Malaysian delegation (fishers and fishery officers) over to the Pascagoula lab to learn all about TEDs, how they work, changes needed to vessels and legal processes. The trip was considered a resounding success by both travellers and hosts, with outstanding efforts by NMFS to

share knowledge and an amazing reception by the Malaysian delegation, accentuated by the (often hilarious) coming together of the Down South and the Far East cultures.

The main difference between this site visit and regular overseas visits by NMFS specialists to foreign countries was that the backdrop for the tour highlighted how every boat was TED-compliant, whereas when trainers came to Sabah in 2007 the backdrop was a fishery with not a single TED in sight. This way of sharing expertise – as in the Malaysian team travelling to the US rather than the US coming to visit Malaysia – clearly demonstrated the site visit was amongst the best ways to do things. And while admittedly there were significant costs involved, there were also significant advantages to the learning setting that outweigh any logistical or financial issues: Driving along the shores seeing boat after boat equipped with several TEDs just made the story stick. When the NMFS outreach team came to Sabah in 2007 with one or two TEDs, facing hundreds of boats without them, the message just didn't sink in. Seeing hundreds of boats *with* TEDs, however, made it all so much more real. The Sabah team got to

talk with fishers who use them every day, who were not afraid of them, and who actually would use them even if they were not required. Now there was a message to take home...

After introductions of participants of each delegation, day one of work consisted of running paired trials on the NMFS boat R.V. *Caretta*, investigating the impacts of opening location, incorrect deployment angle and numerous discussions between the boat crew and the Malaysian delegation. These informal discussion sessions represented one of the non-measurable benefits of the site visit. Day 2



Sorting the catch aboard the R.V. *Caretta* on day one which landed a sufficiently large fish to dispel any worries of the TED grids fishing selectively.

included a site visit to Alabama to inspect a shrimp packing and processing plant so that the Malaysian delegation could relate further to the processing requirements and ex-vessel product ranges, and a visit to the numerous and busiest bayous which the Gulf shrimp fleet uses as its base. The inspection of the vessels revealed a number of different fishing configurations, each with their own legal requirements for TEDs. The Malaysian team also had the opportunity to chat informally with some of the crews and solicit feedback on TEDs firsthand. Day three saw the team in the classroom, with detailed presentations by Dominiy Hataway, John Mitchell, Michael Barnette and Jeff Gearhart from NMFS Pascagoula on TED history, design, legal issues, enforcement, and introduction to fisheries. These presentations set the theme for later discussions with the NMFS Pascagoula Laboratory Director, and again more informal discussions with crews of the R.V. *Caretta*, other vessels, and lab staff. On day four the Malaysian team had the opportunity to construct a TED from raw materials, learning the intricacies of new sewing, correct design, grid angle, opening dimensions, flap size and attachment, and overall TED structure and construction. Day six was a recovery day, and by day seven the team were once again out on the boat testing various TED configurations, and following up on discussions on fishing technology, bycatch reduction and overall fishery sustainability.



Team member Chua Yau Tsen receiving a Certificate of Attendance from the key instructors at the NMFS Pascagoula lab.

The trip provided valuable firsthand lessons and opportunities for learning in a relaxed, friendly yet focussed setting. As summed up by a short clip from one of the trip's daily logs, testing TEDs with different openings so the Malaysian delegation could compare TED performance: "We had TEDs, shrimp, more shrimp, large fish, lots of laughs, a few crazy moments, more shrimp, and more learning in a day than one could have ever provided in a year. The [Malaysian] guys were all hands-on, helping bring nets in and sort the catch – impressing the local boat crew. We cooked up the shrimp in a southern spicy boil and ate it there and then. Good weather, loads of fun,

photos and video to keep us learning for years, and the welcoming warmth of the NMFS Pascagoula crew. We couldn't have asked for a better start to the trip." The Malaysian crew shared some wonderful moments with the fishing and gear specialists, and took home loads of lessons and advice. If there was ever a definition for 'Sharing without Borders' in the conservation world, this trip was it. Our appreciation goes out to the NMFS Pascagoula Harvesting Systems and Engineering Division staff for their hospitality and generosity in sharing their extensive knowledge.

3.2 TEDs Video

A trip was conducted to Mantanani island (6.71°N, 116.35°E) from 7 to 10 July as part of MRF's ongoing laparoscopy studies, and during this trip four juvenile turtles were collected under permit by the Sabah Fisheries Department so that they could be used in the development of the TEDs film. The four turtles were kept individually in small salt-water pools in a shaded environment in the interim period (10 days) between capture and filming.

The TEDs production was filmed on 20 and 21 July off Mangalum island (6.19°N, 115.60°E), some 35 nautical miles off Kota Kinabalu, Sabah, using a trawler provided by Hai Leng Enterprise Sdn. Bhd. which sailed round from Sandakan to Kota Kinabalu the previous week. The film location was chosen due to water clarity and an extensive clear sandy seabed free of coral or rock obstructions suitable for trawl operations. Filming was carried out by Scubazoo Images Sdn. Bhd. which was subcontracted to produce the film and edit the final production. Backup support (a second vessel for accommodation, a small diving support vessel, and scuba tanks) were provided by MRF.

A final version of the film is available on DVD format and is submitted as a deliverable to this project.

3.3 MoU Signing

An MoU was drafted by the MRF Project leader Dr. Nicolas Pilcher and submitted to Sabah Fisheries Department for review by the Director and the legal counsel in May 2009. Following revisions, the MuO was signed on 15th July 2009, and is appended to this final report as Annex II.

3.4 Meetings with Communities

MRF was also tasked with using the video to liaise with a wider segment of the fishing community at two key ports (Kudat and Sandakan). However, given the video was not completed until the end of July, it was not practical to hold the meetings as planned.

In the case of Sandakan, a series of smaller discussions in June and July and one-on-one sessions with vessel crews resulted in substantial interest and understanding of the TEDs project and the potential benefits to both fishers and the environment. These meetings were arranged as informal dinners or 'on the back deck' dialogues, and it is planned that meetings of this type will continue as part of MRF's ongoing project efforts. It was felt that the impact from these discussions was of a similar level as might have been expected from the wider community consultations.

In the case of Kudat the community meeting has been rescheduled for October 2009 given travel commitments of some of the key people from the fisheries sector, MRF and Sabah Fisheries. This meeting will take place at MRF's expense given the timing of the current contractual period.

4.0 Literature Cited

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Annex I: Permit letters for the TEDs film



JABATAN PERIKANAN SABAH Department Of Fisheries, Sabah

IBU-PEJABAT PERIKANAN Aras 4, Blok B, Wisma Pertanian Sabah, Jalan Tasik Luyang (Off Jalan Maktab Gaya) 88624 Kota Kinabalu, SABAH, MALAYSIA



Tarikh: 06 Julai 2009

Ruj.Kami. : JPIN/CPSM:: 700-1/2 klt.1 - (16)

Kepada sesiapa yang berkenaan,

Tuan,

Projek Penyelidikan Penyu Oleh MRF

Dengan hormatnya perkara diatas adalah dirujuk.

2. Sukacita dimaklumkan bahawa Dr. Nicolas J. Pilcher, Pengarah MRF (Marine Research Foundation) dengan restu Jabatan ini, kini dalam rangka melaksanakan kajian pengurangan penangkapan penyu sebagai *"by-catch"* oleh pukat tunda di negeri ini. Kajian ini berkaitan dengan penggunaan alat TED (Turtle Excluder Device) di kalangan nelayan pukat tunda. Kajian beliau yang telah dimulakan sejak tahun 2007 di Sandakan akan dikembangkan dalam tahun ini di daerah Kudat pula.

3. Salah satu usaha yang akan diambil oleh beliau ialah untuk membuat pengambaran filem di dasar laut mengenai keberkesanan penggunaan alat TED berkenaan. Bagi tujuan diatas, beliau perlu mendapatkan spesimen penyu hidup ; menangkap sekurang-kurangnya satu ekor penyu di perairan Pulau Mantanani untuk dibawa ke Kota Kinabalu/Pulau Mengalum bagi tujuan pengambaran filem berkenaan.

4. Jabatan ini menaruh keyakinan sepenubnya keatas Dr. Nicolas, sejajar dengan pengalaman beliau melebihi 20 tahun dalam bidang pengurusan penyu, untuk memastikan penyu yang ditangkap senantiasa berada dalam keadaan baik dan seterusnya dilepaskan ke perairan umum sebaik sahaja pengambaran filem berkenaan selesai.

 Jabatan ini memohon kerjasama daripada pihak tuan untuk turut memberikan sokongan diatas projek diatas.

Sekian dan terima kasih.

"KUALITI TERBAIK TUNGGAK KECEMERLANGAN KAMI"

"BERKHIDMAT UNTUK NEGARA DENGAN BERSIH, CEKAP DAN AMANAH"

Saya yang menurut perintah, [Lawrence Ketua Caya agurusan Sumber Marin anan, Sabah **Bp.** Pergara LKK

Tel: 088-235566 .088 245489. 088 245496; Fax: 088-240511 Victorie: bite Neuron Isteletent schole om rev: Finalt fich dennitschah env om



JABATAN PERIKANAN SABAH Department Of Fisheries, Sabah

IBU-PEJABAT PERIKANAN

Aras 4, Wisma Pertanian Sabah, Jalan Tasik (Off Jalan Maktab Gaya) 88624 Kota Kinabalu, SABAH, MALAYSIA



Ruj. Kami : JPIN/CPSM: 700-1/2klt.1 -(17)

Tarikh: 15 Julai 2009

Kepada sesiapa yang berkenaan,

Tuan,

Penggunaan Kapal Nelayan SN2511/F untuk Sesi Pengambaran Filem Bagi Kajian Penyu di Perairan Pulau Mengalum(18/07/2009 – 20/07/2009)

Dengan hormatnya perkara diatas adalah dirujuk.

2. Sukacita dimaklumkan bahawa Dr. Nicolas J Pilcher, Pengarah MRF(Marine Research Foundation) dengan kerjasama Jabatan ini akan menjalankan projek penyelidikan penyu, mengenai keberkesanan pengurangan penangkapan Penyu dengan penggunaan alat TED(Turtle Excluder Device) oleh nelayan-nelayan Pukat Tunda. Dalam usaha tersebut beliau akan menbuat pengambaran filem di dasar laut mengenai keberkesanan alat TED berkenaan. Untuk tujuan tersebut, Kapal Nelayan SN2511/F dari Sandakan akan turut serta semasa sesi pengambaran filem tersebut yang akan diadakan diperairan Pulau Mengalum pada tarikh 18hb Julai hingga 20hb Julai 2009 ini.

3. Dimaklumkan juga, kapal nelayan SN2511/F hendaklah kembali ke daerah Sandakan selepas selesai sesi pengambaran filem tersebut.

4. Jabatan ini mengucapkan ribuan terimakasih di atas sokongan dan kerjasama yang diberikan demi menjayakan projek penyelidikan tersebut.

Sekian dan terimkasih

"KUALITI TERBAIK TUNGGAK KECEMERLANGAN KAMI"

Saya yang menurut perintah,

ωΠ n Pengurusan Sumber Marin Ketna Cax erikanan, Sabah

Tol: 058-295965.058-245489, 088-245490; Faz; 088-240511 Website: Nilp://www.lishdool.sabah.gov.my; Epuelt: lish.dept@sabah.gov.my

Annex II: MoU between MRF and Sabah Fisheries



MEMORANDUM OF UNDERSTANDING



BETWEEN DEPARTMENT OF FISHERIES SABAH AND THE MARINE RESEARCH FOUNDATION (MRF) CONCERNING COOPERATION IN THE FIELD OF FISHERIES AND BYCATCH MANAGMEENT

The **DEPARTMENT OF FISHERIES SABAH** (hereinafter referred to as "**DFS**") and the **MARINE RESEARCH FOUNDATION** (hereinafter referred to as "**MRF**"), both DFS and MRF hereinafter referred to individually as the "Party" and collectively as the "Parties";

Desiring to establish this Memorandum of Understanding (hereinafter referred to as the "MOU") to promote joint collaborative conservation and research efforts in the field of fisheries and bycatch management;

Pursuant to the prevailing laws and regulations in Malaysia as well as State governmental procedures and policies on technological cooperation,

HAVE AGREED AS FOLLOWS:

Article 1 Objectives

The objectives of the cooperation are to provide a framework for promoting research and conservation activities between DFS and MRF by means of exchanging technical information, carrying out joint cooperative studies and researches as well as industrial technology transfer, in the field of marine fisheries and bycatch management.

Article 2

Cooperation Activities

- The activities of the cooperation under this MOU are focused on, but not limited to, the following:
 - a) Scientific training;
 - b) Fisheries bycatch mitigation;
 - c) Sustainable fisheries;
 - d) Fisheries certification programmes and enforcement;
 - e) Exchanging data and information; and
 - f) Joint research programs.
- 2. The scope of research activities will be focused on, but are not limited to, the following research fields:
 - a) Impacts of fisheries on endangered species;
 - b) Applicability of solutions to bycatch entrapment;
 - c) Integrated fisheries management planning; and
 - d) Marine living and non-living resources exploration.

Article 3

Contribution by DFS

In accordance with the prevailing laws, regulations and policies of DFS and subject to its personnel and budget limitation, DFS shall:

- a) Provide necessary basic facilities for the execution of the obligation of DFS as specified in joint research proposals between DFS and MRF;
- b) Assign qualified experts and researchers to assist implementation of activities under this MOU;
- c) Provide in good faith to the fullest extent permissible under the law, support in obtaining necessary permits to conduct joint DFS – MRF projects;
- d) Assist in good faith to the fullest extent permissible under the law in the provision of permits to export research samples obtained through collaborative projects between DFS and MRF for identification / analysis by expert taxonomists.

Article 4

Contribution by MRF

In accordance with the prevailing laws and regulations of Malaysia, and subject to personnel and budget limitation, MRF shall:

- a) Assign resources, qualified experts and researchers to assist in the implementation of activities under this MOU;
- b) Assist the DFS in matters of bycatch reduction, fisheries management, enforcement, technical assistance and other fields where appropriate;
- Develop linkages and source funds from exterior agencies to promote fisheries and bycatch management;
- d) Deal with donors on behalf of the parties in matters pertaining to joint work undertaken under this MOU;
- e) Provide access to specialists and fisheries and bycatch management-related bodies to promote the joint initiatives under this MOU;
- f) Abiding by the spirit of this MOU and in support of article 3(c), MRF shall apply in good faith to the fullest extent, necessary permit(s) related to sample movement between MRF and international taxonomists.

Article 5

Intellectual Property Rights and Publications

1. Any Intellectual Property Right (IPR) brought by one of the Parties for the implementation of activities under this MOU shall remain the property of that Party. However, that Party shall indemnify that the claimed IPR is not resulted from the infringement of any third party's legitimate rights. Further, that Party shall be liable for any claim made by third party on the ownership and legality of the use of claimed IPR which is brought about by the aforementioned Party for the implementation of the cooperation activities under this MOU;

2. The utilization of the applicable result or product of the research activities and their findings under this MOU outside of Malaysia by one of the Parties shall have to get prior written approval from the other Party on a case by case basis;

4. If either Party wishes to disclose confidential data and/or information resulted from 300 peration activities under this MOU to any third party through publication, presentation or any other means, the disclosing Party must obtain prior consent from the other Party before any disclosure can be made;

4. Termination of this MOU shall survive the rights and/or obligation under this Article for the period of 10 (ten) years after such termination.

Article 6 Limitation of the Personnel

The Parties shall ensure that their personnel engaged in the activities under this MOU will not engage in political affairs and any ventures or activities in Malaysia outside the program of cooperation under this MOU.

Article 7

Settlement of Dispute

Any disputes or controversy arising out of the interpretation of application and implementation of this MOU shall be settled amicably through consultation and negotiation by the Parties within the spirit of collaborations.

Article 8

Amendments, Duration, and Termination

1. Any amendments, modifications, alterations or variations to this MOU can be made only in writing and after consultation and mutual consent of both Parties;

2. This MOU shall be in effect from the date of its signing and shall be valid for the duration of five (5) years from that date, and may be extended for successive period of three (3) years each upon an agreement in writing by both Parties;

3. Either Party may notify the other, six (6) months prior to the expiration of this MOU or any renewal period thereof of its intention to terminate this MOU. In each case, any existing projects will be brought to an orderly conclusion;

4. The termination of this MOU shall not affect the contract or activities made during the validity of this MOU until the completion of such contracts or activities.

Article 9

Notice

Every notice, request or any other communication required or permitted to be given pursuant to this MOU shall be in writing, in English and delivered personally or sent by registered or certified post via air mail or by courier of facsimile (which shall be acknowledge by the other Party) to the respective contact point of each Party at the address and facsimile number as stated below:

(a) DFS contact point: Department of Fisheries Sabah
Level 4, Block D, Wisma Pertanian Sabah,
Jalan Tasik Luyang (off Jalan Maktab Gaya),
88624 Kota Kinabalu, Sabah
Attn. The Director
Fax No. 088-250511

(b) MRF contact point: Marine Research Foundation 136 Lorong Pokok Seraya 2, Taman Khidmat 88450 Kota Kinabalu, Sabah Attention: Executive Director Fax No.: 6088-386136

Article 10

Miscellaneous

1. This MOU is not intended to be legally binding. It is a written form of understanding made between two Parties. It merely expresses the intentions and understanding of the Parties which will form the basis of any legally binding agreement to be drafted and executed in the future.

2. The Parties hereby agree that they are not bound exclusively by this MOU and shall be at liberty to enter into any separate agreements or arrangements with any third party without reference to the other Party. However, any such arrangement shall be notified to the other party as a courtesy.

IN WITNESS WHEREOF, the undersigned, the Authorized Representatives of each Party, have signed this Memorandum of Understanding.

Done in duplicate in Kota Kinabalu on this 15th day of July in the year two thousand and nine, in the English Language, both texts being equally authentic.

For and on behalf of Department of Fisheries Sabah (DFS), by For and on behalf of the Marine Research Foundation (MRF), by

Rayner Stuel Galid Director Dr. Nicolas J. Pilcher Executive Director