

**INTERNATIONAL TRIBUNAL FOR THE LAW OF THE SEA
TRIBUNAL INTERNATIONAL DU DROIT DE LA MER**



2003

Public sitting

held on Thursday, 25 September 2003, at 10.00 a.m.,
at the International Tribunal for the Law of the Sea, Hamburg,

President L. Dolliver M. Nelson presiding

**Case concerning Land Reclamation by Singapore
in and around the Straits of Johor**

(Request for provisional measures)

(Malaysia v. Singapore)

Verbatim Record

<i>Present:</i>	President	L. Dolliver M. Nelson
	Vice-President	Budislav Vukas
	Judges	Hugo Caminos
		Vicente Marotta Rangel
		Alexander Yankov
		Soji Yamamoto
		Anatoli Lazarevich Kolodkin
		Choon-Ho Park
		Paul Bamela Engo
		Thomas A. Mensah
		P. Chandrasekhara Rao
		Joseph Akl
		David Anderson
		Rüdiger Wolfrum
		Tullio Treves
		Mohamed Mouldi Marsit
		Tafsir Malick Ndiaye
		José Luis Jesus
		Guangjian Xu
		Jean-Pierre Cot
		Anthony Amos Lucky
	Judges <i>ad hoc</i>	Kamal Hossain
		Bernard H. Oxman
	Registrar	Philippe Gautier

Malaysia represented by:

Mr Ahmad Fuzi Haji Abdul Razak, Secretary General, Ministry of Foreign Affairs,

as Agent;

Mr Kamal Ismaun, Ambassador, Embassy of Malaysia, Berlin, Germany,

as Co-Agent;

and

Mr Abdul Gani Patail, Attorney General,
Mr Elihu Lauterpacht, C.B.E., Q.C., Honorary Professor of International Law,
University of Cambridge, Cambridge, United Kingdom,
Mr James Crawford S.C., F.B.A., Whewell Professor of International Law,
University of Cambridge, Cambridge, United Kingdom,
Mr Nico Schrijver, Professor of International Law, Free University Amsterdam
and Institute of Social Studies, The Hague, Netherlands,

as Counsel and Advocates;

Mr Christian J. Tams, LL.M (Cantab), Gonville & Caius College, Cambridge,
United Kingdom,

as Counsel;

Ms Wan Napsiah Salleh, Under-Secretary, Territorial and Maritime Affairs
Division, Ministry of Foreign Affairs,
Mr Jaafar Ismail, Director-General, National Security Division, Prime Minister's
Department,
Mr Hamid Ali, Director General of Survey and Mapping, Department of Survey
and Mapping,
Mrs Azailiza Mohd Ahad, Deputy Head of International Affairs Division,
Attorney General's Chamber,
Mr Haji Mohamad Razali Mahusin, Secretary State of Johor,
Mr Abdul Aziz Abdul Rasol, Assessment Division Director, Department of
Environment,
Ms Khadijah Mahmud, Senior Federal Council, Ministry of Foreign Affairs,
Mr Raja Aznam Nazrin, Principal Assistant Secretary, Territorial and Maritime
Affairs Division, Ministry of Foreign Affairs,
Mr Hasan Jamil, Director of Survey, Boundary Affairs, Department of Survey
and Mapping,
Mr Ahmad Aznan Zakaria, Principal Assistant Director of Survey (Boundary
Affairs), Ministry of Foreign Affairs,
Mrs Almalena Shamila Johan Thambu, Senior Federal Counsel, International
Affairs Division, Attorney General's Chambers,
Mr Yacob Ismail, Director General, Hydrography Department, Royal
Malaysian Navy,

Ms Haznah Md. Hashim, Assistant Secretary, Territorial and Maritime Affairs Division, Ministry of Foreign Affairs,
Mr Nur Azman Abd Rahim, Assistant Secretary, Territorial and Maritime Affairs Division, Ministry of Foreign Affairs,
Mr Mohd Riduan Md. Ali, Assistant Director, Economic Planning Unit Johor,
Mrs Rus Shazila Osman, Assistant Director, National Security Division, Prime Minister's Department,
Mr Hasnan Hussin, Senior Technical Assistant, Boundary Affairs, Department of Survey and Mapping,

as Advisers;

Mrs Sharifah Mastura Syed Abdullah, Professor in Geomorphology, Phd., Southampton University, United Kingdom, Professor at University Kebangsaan Malaysia,
Mr Saw Hin Seang, Director, Coastal Engineering Division, Department of Irrigation and Drainage,
Mr Ziauddin Abdul Latif, Deputy Director, Coastal Engineering Division, Department of Irrigation and Drainage,
Mrs Siti Aishah Hashim, Engineer, Coastal Engineering Division, Department of Irrigation and Drainage,
Mr M. Marzuki Mustafa, Associate Professor, University Kebangsaan Malaysia,
Mr Othman A Karim, Associate Professor, University Kebangsaan Malaysia,
Mr Othman Jaafar, University Kebangsaan Malaysia,

as Technical Advisers.

Singapore represented by:

Mr Tommy Koh, Ambassador-At-Large, Ministry of Foreign Affairs,

as Agent:

Mr A. Selverajah, Ambassador, Embassy of the Republic of Singapore, Berlin, Germany,

as Co-Agent;

and

Mr Sek Keong Chan, Attorney-General,
Mr Vaughan Lowe, Chichele Professor of Public International Law, University of Oxford, Oxford, United Kingdom,
Mr Michael Reisman, Myres S. McDougal Professor of Law, Yale Law School, New Haven, Connecticut, United States of America,

as Counsel and Advocates;

Mrs Koon Hean Cheong, Second Deputy Secretary, Ministry of National Development,

as Advocate;

Mr Sivakant Tiwari, Principal Senior State Counsel, International Affairs Division, Attorney-General's Chambers,
Mr Lionel Yee, Senior State Counsel, International Affairs Division, Attorney-General's Chambers,
Ms Danielle Yeow, State Counsel, International Affairs Division, Attorney-General's Chambers,
Mr Ken Hwee Tan, State Counsel, International Affairs Division, Attorney-General's Chambers,
Mr Marcus Song, State Counsel, International Affairs Division, Attorney-General's Chambers,
Ms Pei Feng Cheng, State Counsel, International Affairs Division, Attorney-General's Chambers,
Mr Peter Chan, Permanent Secretary, Ministry of National Development,
Ms Adele Tan, Assistant Director, Strategic Planning, Ministry of National Development,
Mr Albert Chua, Deputy Secretary (Policy), Ministry of Foreign Affairs,
Mr Hong Huai Lim, Deputy Director, PPA Directorate I (Southeast Asia), Ministry of Foreign Affairs,
Ms Sharon Chan, First Secretary, Embassy of the Republic of Singapore, Berlin, Germany,
Ms Constance See, Assistant Director, PPA Directorate I (Southeast Asia), Ministry of Foreign Affairs,
Mr Kees d'Angremond, Emeritus Professor of Coastal Engineering, Delft University of Technology, Netherlands,
Mr Leo Wee Hin Tan, Professor of Biological Sciences, National Technological University, Singapore,
Mr Michael James Holmes, Research Fellow, Department of Biological Sciences, Tropical Marine Science Institute, National University of Singapore,
Mr Eng Hock Ong, Engineer, Engineering Planning, JTC Corporation, Singapore,
Ms Ah Mui Hee, Vice President, Jurong Consultants Pte Ltd, (Project Manager, Tuas View Extension Reclamation), Singapore,
Ms Say Khim Ong, Deputy Director, Strategic Planning, Housing and Development Board,
Mr Yan Hui Loh, Senior Vice President, Engineering, HDB Corp (Surbana) (Project Manager, P. Tekong Reclamation Works), Singapore,
Mr Way Seng Chia, Vice President, Reclamation, HDB Corp (Surbana), Singapore,
Mr Cheng Wee Lee, Deputy Port Master, Maritime Port Authority of Singapore,
Mr Parry Soe Ling Oei, Deputy Hydrographer, Maritime Port Authority of Singapore,
Mr Chee Leong Foong, Head, Pollution Control Department, National Environment Agency,

as Advisers.

1 **CLERK OF THE TRIBUNAL:** All rise.

2

3 **PRESIDENT:** Please be seated.

4

5 **CLERK OF THE TRIBUNAL:** The International Tribunal for the Law of the Sea is
6 now in session.

7

8 **THE PRESIDENT:** Please be seated.

9

10 **THE REGISTRAR:** On 5th September 2003, a Request for the prescription of
11 provisional measures, pending the constitution of an arbitral tribunal to be
12 established under Annex VII of the United Nations Convention on the Law of the Sea
13 was submitted to the Tribunal by Malaysia against Singapore in a dispute concerning
14 land reclamation activities by Singapore.

15

16 The Request was made under Article 290, paragraph 5, of the United Nations
17 Convention on the Law of the Sea.

18

19 The case was named “Case concerning land reclamation by Singapore in and
20 around the Straits of Johor” and entered in the List of cases as case No 23.

21

22 **THE PRESIDENT:** This public sitting is being held pursuant to Article 26 of the
23 Statute of the Tribunal to hear the parties present their evidence and arguments in
24 the “Case concerning land reclamation by Singapore in and around the Straits of
25 Johor”.

26

27 I call on the Registrar to read out the submissions of Malaysia as contained in its
28 Request.

29

30 **THE REGISTRAR:** The Applicant requests the Tribunal to prescribe provisional
31 measures as follows, I quote:

32

33 “Pending the constitution of the Arbitral Tribunal, the Government of Malaysia
34 requests that the Tribunal prescribe the following provisional measures:

35

36 (a) that Singapore, pending the decision of the Arbitral Tribunal, suspend all
37 current land reclamation activities in the vicinity of the maritime boundary
38 between the two States or of areas claim as territorial waters by Malaysia
39 (and specifically around Pulau Tekong and Tuas);

40

41 (b) to the extent has not already done so, provide Malaysia with full
42 information as to the current and projected works, including in particular
43 their proposed extent, their method of construction, the origin and kind of
44 materials used, and designs for coastal protection and remediation, if any);

45

46 (c) afford Malaysia a full opportunity to comment upon the works and their
47 potential impacts having regard *inter alia* to the information provided; and

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49 (d) agree to negotiate with Malaysia concerning any remaining unresolved
50 issues.”

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THE PRESIDENT: On 5 September 2003 a copy of the Request was transmitted to the Government of Singapore. By Order of 10 September 2003, the Tribunal fixed 25 September 2003 as the date for the opening of the hearing of the case. On 20 September 2003 Singapore filed its response regarding the Request of Malaysia. I now call on the Registrar to read the submissions of the Government of Singapore.

THE REGISTRAR: The Respondent requests the Tribunal to, I quote:

“For the reasons given in its Response Singapore respectfully requests the International Tribunal for the Law of the Sea to:

- (a) dismiss Malaysia’s request for provisional measures; and
- (b) order Malaysia to bear the costs incurred by Singapore in these proceedings.”

THE PRESIDENT: In accordance with the Rules of the Tribunal, copies of the Request and the Response are being made accessible to the public as of today.

The Tribunal notes the presence in court of Mr Tan Sri Ahmad Fuzi Haji Abdul Razak, the Agent of Malaysia, and Mr Tommy Koh, the Agent of Singapore.

I now call on the Agent of the Applicant to note the representation of Malaysia.

MR RAZAK: Mr President, Members of the Tribunal, I have the honour to introduce to this Tribunal the Members of the Malaysian Delegation. They are:

His Excellency Dr Kamal Ismaun, Ambassador of Malaysia to the Federal Republic of Germany as Co-Agent;
The Honourable Mr Abudal Gani Patail, the Attorney General of Malaysia;
Professor Sir Elihu Lauterpacht, CBE, QC, Honorary Professor of International Law, University of Cambridge,
Professor James Crawford, SC, FBA, Whewell Professor of International Law, University of Cambridge, Member of the International Law Commission;
Professor Nico Shrijver, Professor of International Law, Free University Amsterdam and Institute of Social Studies, The Hague, Member of the Permanent Court of Arbitration as Counsel and Advocates.
Professor Roger Alexander Falconer, Professor of Water Management, Cardiff University, Chartered Civil and European Engineer, Chartered Water and Environmental Manager, Fellow of the Royal Academy of Engineering as Technical Expert;
Professor Dr Sharifah Mustapha Syed Abdullah, University of Kebangsaan, Malaysia, as Principal Expert, Technical Adviser, and other Members of the Delegation who act as Advisers and Technical Advisers. Thank you.

1 **THE PRESIDENT:** I now call on the Agent of Singapore to note the Delegation of
2 Singapore.

3
4 **MR KOH:** Mr President, Mr Vice-President, Distinguished Judges, my learned
5 friends representing Malaysia, ladies and gentlemen.

6
7 This is a very important day for me. Like many of the Judges, I have spent over ten
8 years of my life helping to negotiate the landmark UN Convention on the Law of the
9 Sea.

10
11 We had many dreams which inspired and sustained us during our long and
12 sometimes arduous journey. One of our dreams was that disputes between States
13 relating to the law of the sea would be settled peacefully without resort to force. That
14 dream has become a reality.

15
16 Another dream was that the International Tribunal for the Law of the Sea would
17 make an important contribution to the peaceful settlement of disputes, to the
18 progressive development of international law and to the rule of law in the world.
19 I also dreamt, Mr President, that one day I would have the privilege of appearing
20 before this distinguished Tribunal.

21
22 Let me now turn to introduce the Members of the speaking team of the Singapore
23 Delegation.

24
25 Singapore's submissions will be presented in the following order:

26
27 The Singapore's Attorney General Mr S. K. Chan will make our opening statement
28 and outline Singapore's Response. The presence of the Attorney General is a
29 reflection of our seriousness and of our respect for this Tribunal.

30
31 The factual background will be presented by Mrs Cheong, a Senior Official in the
32 Ministry of National Development.

33
34 I will concentrate on the diplomatic history of the case and on Point 20.

35
36 Professor Michael Reisman, Myres McDougal Professor of Law, Yale University, will
37 deal with issues of jurisdiction, admissibility and the principles governing the
38 prescription of provisional measures.

39
40 Finally Professor Vaughan Lowe, the Chichele Professor of Public International Law
41 of Oxford University, will apply the principles to the specific circumstances of this
42 case. He will also deal with Malaysia's four specific requests. Thank you,
43 Mr President.

44
45 **THE PRESIDENT:** Thank you. Following consultations with the Agents of the
46 parties, it has been decided that the Applicant, will be the first to present its
47 arguments and evidence. Accordingly, the Tribunal will hear Malaysia first today.
48 The Tribunal will hear Singapore tomorrow.

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50 I now call on the Agent of Malaysia to begin his statement.

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MR RAZAK: Mr President, Members of the Tribunal

It is an honour for me to appear before this Tribunal as Agent for Malaysia. The underlying dispute before us concerns vital issues, namely the unilateral resort by Singapore to major land reclamation activities in a semi-enclosed area of the sea, without any prior attempt at consultation or any proper assessment, and without any prior delimitation of a disputed maritime boundary.

Malaysia hopes that its resort to Part XV of the 1982 Convention will help settle a dispute which is souring relations between the two neighbouring countries. But as a first and absolutely necessary step, it is for this Tribunal to call on Singapore to cease its continued, hasty unilateral action, and instead to adopt a cooperative approach—in short, to suspend the massive attempt at a *fait accompli* represented by these two projects, projects which self-evidently risk harm to Malaysia.

Mr President, Members of the Tribunal, jurisdiction in the present case is based on Malaysia's invocation of Part XV, Section 2 of the United Nations Convention on the Law of the Sea, which provides a general system of dispute settlement binding on all the parties to the Convention. Singapore considers Malaysia's claim to be premature. As the Attorney-General of Malaysia will explain later, Malaysia has always sought a negotiated settlement of the dispute, something Singapore flatly refused until after these proceedings were commenced.

You will have noted from the diplomatic correspondence the change in the tone of Singapore's language after 4 July 2003. That change is itself a testament to the importance of Part XV of the Convention. Malaysia only wishes there had been an equivalent change in Singapore's conduct. But what we have seen since the filing of this claim has been soft words from my good friend, Professor Koh, but a continuation of hard actions from his Government. That is the fact and it is a fact, which only the binding order of this Tribunal will begin to alter.

Mr President, Members of the Tribunal, let me invite you, right away, to look at the scale of Singapore's reclamations which are the subject of this complaint. Please look first at this picture, which is Tab 1 in your folders. It shows Singapore's reclamation projects as they were in 2000, prior to Malaysia's complaint. Now please look at the following picture, which is Tab 2 in your folders.

The difference is obvious, massive and would be of serious concern to any coastal State. Malaysia is not being unreasonable. It does not deny the importance of the issue of land reclamation for an island State like Singapore. It is not opposed to reclaiming land from the sea, which is one means of accommodating a growing population, and it has followed Singapore's in-shore land reclamation activities during the last decade without protest.

But these two projects mark a new step in Singapore's land reclamation policy. They are different in kind from Singapore's previous projects. They cover an area of five

1 thousand, two hundred and fourteen hectares of sea, three thousand three hundred
2 and six hectares in the eastern sector, and one thousand nine hundred and eight
3 hectares at Tuas in the west. Unlike Singapore's initial reclamation projects, they do
4 not involve shallow inshore areas adjacent to the Singapore coast, but areas of sea
5 of up to 15 metres in depth, previously used for navigation by small boats and for
6 other maritime activities. Once completed, these reclamation works will include a
7 substantial proportion of the sea areas of the Straits of Johor. They threaten to have
8 a massive impact on the marine environment of the Straits, on Malaysia's access to
9 these waters, and on Malaysians living and working there.

10
11 It is obvious to the naked eye that these projects were bound to have serious
12 environmental and other impacts, that they raised issues of maritime access and
13 navigational security. Yet Singapore did not consult, did not share reports or
14 information, did not assess their overall impact on the region; it simply went ahead,
15 unilaterally. And now it refuses even a short suspension to allow some form of joint
16 assessment, initial assessment that could be carried out in a few months. It is that
17 refusal that brings us here.

18
19 Mr President, Members of the Tribunal, Malaysia regrets that this Tribunal, the
20 'cornerstone of the system of dispute settlement', is competent only to address the
21 request for provisional measures. Nevertheless, your Tribunal still has a vital
22 constitutional role to play. You are not simply a back-stop to other bodies; you are
23 *the Law of the Sea Tribunal*.

24
25 Malaysia trusts that you will act as such, at a time when every day nearly a hectare
26 of sea is reclaimed, at a time when, we are told by Singapore, Malaysia has no
27 choice but to watch Singapore complete the massive project represented by the ugly
28 wall of sheet piles you see on the screen. At the moment, the sheet piling can still be
29 removed; it is not yet permanent. The project behind it can still be reconfigured if, in
30 the course of the present proceedings, Singapore agrees to give up its unilateral
31 approach. Yet Singapore pretends both that everything is irreversible and that
32 nothing is urgent; and in the meantime it does whatever it can to delay matters
33 between the parties at this stage of the procedure.

34
35 Mr President, Members of the Tribunal, by granting the interim relief sought by
36 Malaysia, you can notably set the stage for an eventual resolution of the dispute. To
37 do so, it is essential that Singapore provide Malaysia with full information about
38 current and planned projects. In the past, it has repeatedly refused to provide such
39 information. Its attitude is encapsulated, for example, in a short statement contained
40 in its Note of 2 September 2003. Malaysia had asked Singapore to dismiss reports
41 that Singapore planned to build a bridge, barrage, tunnel or other link between
42 Singapore Island and the offshore areas around Pulau Tekong which are being
43 reclaimed. In response, Singapore has only been prepared to say this:

44
45 ".....Singapore is prepared to notify and consult Malaysia before it proceeds to
46 construct transport links between Pulau Tekong, Pulau Ubin and main island
47 of Singapore *if such links could affect Malaysia's passage rights.*" I repeat, "if
48 such links could affect Malaysia's passage rights."

1
2 I emphasise those last words, Mr President, Members of the Tribunal. Even at
3 a time when it seemed clear that the two countries were fast approaching
4 international arbitration, Singapore still claimed to decide unilaterally whether specific
5 projects could affect Malaysia's passage rights, and whether it would provide
6 Malaysia with access to information or even allow for consultation. It will only notify
7 and consult if it thinks Malaysia's passage rights could be affected. But, as its own
8 scientific reports show, it has never even considered whether Malaysia's rights could
9 be affected. That is its constant attitude. By granting Malaysia's request for interim
10 relief, you could help to bring about a change in that attitude.
11

12 Mr President, Members of the Tribunal, before I conclude, allow me to give you an
13 overview over the remainder of Malaysia's presentation. First, the Honourable
14 Attorney-General will show that Malaysia, before seeking recourse to adjudication
15 and arbitration, has long sought to settle the dispute by negotiation, and that there
16 had been an exchange of views, or at least a presentation of Malaysian views, met
17 by a stolid refusal by Singapore to take them seriously.
18

19 This presentation will be followed, I am delighted to say, by a presentation by
20 Sir Elihu Lauterpacht, for long Malaysia's senior counsel in international law matters,
21 who will provide you with an overview of Malaysia's case. A visual presentation by
22 Professor Sharifah of Malaysia's Universiti Kebangsaan, and expert evidence by
23 Professor Falconer, will follow. We understand Singapore wishes to cross-examine
24 both of them. Following that cross-examination, there will be presentations by
25 Professors Crawford and Schrijver on the justifications in law and fact for Malaysia's
26 requested measures.
27

28 Mr. President, Members of the Tribunal, thank you for your attention. I would ask
29 you, Mr President, to call on the Attorney-General, Tan Sri Abdul Gani Patail, to
30 continue Malaysia's case.
31

32 **THE PRESIDENT:** Thank you very much. I now call upon the honourable
33 Attorney-General.
34

35 **MR PATAIL:** Mr President, distinguished Members of the Tribunal, it is a great
36 honour to appear before you today as the Attorney-General of Malaysia. It is my
37 task to outline the history of the present dispute about Singapore's land reclamation
38 activities. Doing so serves a double function. First, it sets out the necessary
39 diplomatic background to the present proceedings. Secondly, and more importantly,
40 in giving an overview of Malaysia's repeated attempts at negotiations, I will rebut
41 Singapore's claim that these proceedings have been instituted without a proper
42 exchange of views and before exhausting available diplomatic means of dispute
43 settlement.
44

45 In its closing statement at the negotiations of 13-14 August 2003, Ambassador Koh,
46 the leader of Singapore's delegation, observed that recourse to adjudication or
47 arbitration under Part XV, Section 2 of the 1982 United Nations Convention on the
48 Law of the Sea was "premature", and that further negotiations were required by

1 Article 283. In the Diplomatic Note of 2 September, Singapore re-iterated this view
2 and stated that the dispute was "at an early stage". Singapore makes the same
3 argument in its Response, arguing that "[t]he first opportunity for Singapore to
4 engage in an exchange" occurred in August of this year. These statements suggest
5 that Malaysia had rushed to the Tribunal, disregarding its obligations under Article
6 283 of the Convention, and it is this claim I wish to examine briefly this morning.

7
8 Mr President, Members of the Tribunal, 4 July 2003, the date on which Malaysia filed
9 its Statement of Claim, represents a watershed in this case. Before that date
10 Singapore had refused to meet to discuss the issues raised by the reclamation
11 projects. Malaysia repeatedly sought a high-level meeting of officials to express and
12 develop its concerns and to listen to Singapore's views. Singapore repeatedly
13 declined such meetings unless Malaysia first proved to Singapore's satisfaction that
14 Malaysia's concerns were justified. In other words, the very purpose of the proposed
15 meetings—the discussion of Malaysian concerns—became Singapore's excuse for
16 not having the meetings.

17
18 Then came 4 July, and suddenly Singapore's position changed. Its diary fell open,
19 even if it was always open at a later date than Malaysia would have wanted. Not
20 merely did Singapore want meeting after meeting; it went so far as to deny that it had
21 ever refused to meet. Suddenly all was conviviality and invitations.

22
23 But the diplomatic record is clear. Before as well as after 4 July 2003, Malaysia
24 sought ways to resolve this dispute, as I will now show.

25
26 The relevant legal text is Article 283 of the Convention. Under Article 283(1), before
27 submitting a dispute to adjudication or arbitration, the parties "..... shall proceed
28 expeditiously to an exchange of views regarding its settlement by negotiation or
29 other peaceful means."

30
31 Mr President, Members of the Tribunal, a quick glance at the material assembled in
32 the annexes of Malaysia's Statement of Claim and its Request for provisional
33 measures shows that Malaysia has repeatedly expressed its views on this matter,
34 and in some detail. For most of the period, Singapore, although it had every
35 opportunity to do so, did not provide much by way of reply, other than indicating that
36 it did not accept Malaysia's position and asserting that it was incumbent on Malaysia
37 to prove its claims. In fact, it is not too much to say that the diplomatic
38 correspondence between the two countries has been dominated, or rather poisoned,
39 by fruitless exchanges of views about the subject-matter of the present dispute.

40
41 For example, let me take you to the item contained in Annex 1(i) to the Statement of
42 Claim (Tab 4). You will see that it contains a Diplomatic Note, issued by the Ministry
43 of Foreign Affairs of Malaysia on 30 April 2002. The second paragraph states as
44 follows:

45
46 "The Government of Malaysia is seriously concerned over all reclamation
47 activities conducted by the Government of the Republic of Singapore in and
48 around Pulau Tekong and Pulau Ubin that have transboundary environmental
49 impact in Malaysian waters."
50

1 After listing the various effects of the reclamation activities (including changes in the
2 water current, erosion and siltation) the Note makes a specific reference to

3
4 "the basic duty [of] States not to carry out activities ... that would injure the
5 rights and interests of neighbouring states".

6
7 And further, in the penultimate paragraph:

8
9 "The Government of Malaysia urges a meeting of senior officials of the two
10 countries be held on an urgent basis to discuss the concerns raised by the
11 Government of Malaysia with a view to amicably resolve this issue".

12
13 This Note provides, in April 2002, a concise summary of the dispute which is now,
14 18 months later, being addressed before this Tribunal. In April 2002 Malaysia set
15 out its main concerns, referred to the relevant legal rules and sought urgent high-
16 level talks. Similar requests can be found, for example, in the Diplomatic Notes of
17 2 April and 10 July 2002, contained in Annex 1(g) and 1(l) to the Statement of
18 Claims. As regards the connected dispute about the maritime boundary in and
19 around Point 20, diplomatic correspondence goes back to the late 1990s. Yet
20 Singapore now says that the first opportunity it had to respond was last month.

21
22 In fact how did Singapore respond to Malaysia's claims? Given its avowed
23 willingness to cooperate and negotiate, as expressed in Diplomatic Notes since
24 4 July 2003, one might have expected it to agree to Malaysia's requests for
25 high-level talks. Similarly, in the spirit of good neighbourliness which it so eloquently
26 professes since 4 July 2003, it would surely have taken seriously Malaysia's
27 concerns? I regret to say that Singapore's earlier replies show neither cooperation
28 nor good neighbourliness. Instead, Singapore "categorically rejected" Malaysia's
29 claims, both with regard to the maritime boundary and with respect to the alleged
30 violations of duties of cooperation. With respect to the question of cooperation, it
31 summarily dismissed Malaysia's arguments as "unsubstantiated and baseless",
32 stating that "[t]he reclamation works have been carried out entirely within
33 Singapore's territorial waters and in accordance with international law". Perhaps
34 most importantly, Singapore repeatedly refused to conduct any consultations,
35 instead stating that:

36 "a meeting will only be useful if the Government of Malaysia can provide new
37 facts or arguments to prove its contentions."

38 I stress the last part of the sentence. It clearly shows that Singapore was not
39 interested in cooperation, but instead claimed as a preliminary matter — without
40 engaging in any discussions — to be the judge of Malaysia's claims. In its view,
41 talks would only be useful if Singapore considered Malaysia's contentions to be
42 proven. But if they were proven, what would there be to discuss?

43
44 Mr President, distinguished Members of the Tribunal, what I have said demonstrates
45 that there had been an exchange of views before Malaysia finally decided that only
46 legal action had any potential to produce results. But even after 4 July 2003, in
47 a spirit of cooperation, Malaysia agreed to bilateral talks, which were held in
48 Singapore on 13-14 August 2003. Indeed, these talks have brought some

1 clarifications. During the meeting, Singapore expressly accepted that as a matter of
2 law both countries have an obligation to protect the marine environment of the
3 Straits, and to ensure that the manner in which they conduct their activities does not
4 adversely impact upon the Straits or the territory of the other State. It also provided
5 Malaysia with some further information about the reclamation works, information
6 which Professor Falconer will discuss in a moment. However, it refused, both then
7 and in response to Malaysia's further letter of 22 August 2003, to suspend works, or
8 even to vary the schedule of works, so as to address Malaysia's concerns.

9
10 This is the factual background against which the present dispute has to be seen.
11 Malaysia had its claims brushed aside and summarily dismissed over many months.
12 For Singapore now to call the present proceedings "premature" seems – on the
13 facts – plainly absurd. In terms of the law, I submit that Article 283 of the Convention
14 (on which Singapore relies) provides no basis for Singapore's claims.

15
16 I refer to the Tribunal's jurisprudence on Article 283, in particular your Order in the
17 *MOX Plant case*, in which you addressed the United Kingdom's argument that no
18 exchange of views had taken place. Indeed, passages of that Order read as if they
19 had been written to fit the present dispute. In para. 55, you noted the United
20 Kingdom's argument that:

21
22 "the correspondence between Ireland and the United Kingdom did not amount
23 to an exchange of views on the dispute"

24
25 – an argument which you rejected, noting Ireland's view that in a Diplomatic Note, "it
26 had drawn the attention of the United Kingdom to the dispute" and that there had
27 been "a further exchange of correspondence ... up to the submission of the dispute".

28
29 In para. 59, you noted Ireland's view that it had commenced proceedings:
30 "only after the United Kingdom failed to indicate its willingness to consider the
31 immediate suspension of the authorization of the MOX plant and a halt to
32 related international transports"

33
34 And you accepted Ireland's argument.

35
36 Finally, in para. 60 of the same Order, you affirmed the position, already put forward
37 in the *Southern Bluefin Tuna case* and accepted in international jurisprudence, that:

38
39 "a State Party is not obliged to continue with an exchange of views when it
40 concludes that the possibilities of reaching agreement have been exhausted".

41
42 Applying to the present case, the position is then as follows. Malaysia has
43 repeatedly drawn Singapore's attention to the dispute. It has only submitted the
44 dispute to arbitration after Singapore had not only "failed to indicate its willingness",
45 but categorically rejected claims for a suspension of works. Finally, on the basis of
46 this, Malaysia has "conclude[d] that the possibilities of reaching agreement [by
47 diplomatic means] have been exhausted."

48
49 Seen against this background, Singapore's assertion that Malaysia had rushed to
50 this Tribunal before giving negotiations a chance is untenable, both in terms of the

1 facts and the law. As I have shown to you, Malaysia, over years, has sought a
2 negotiated settlement. Having had its views first rejected and ignored, and now most
3 recently dismissed, it seeks judicial recourse to this Tribunal, as it is entitled to do
4 under Part XV of the Convention.

5
6 Mr. President, distinguished Members of the Tribunal, this brings me to the end of
7 my presentation. I thank you for your attention, and would now ask you,
8 Mr President, to call upon Sir Eli Lauterpacht to continue Malaysia's presentation.

9
10 **THE PRESIDENT:** Thank you. I now call upon Sir Elihu Lauterpacht.

11
12
13 **SIR ELIHU LAUTERPACHT:** Mr President and Members of the Tribunal, on this,
14 the first occasion in which I have the honour to address this Tribunal, I must confess
15 to a special pleasure in doing so. Twenty-eight years ago, in the company of an
16 number of the distinguished members of this Tribunal, as well as of the eminent
17 leader of the Singapore delegation, I was able to participate in the meetings both
18 within the Law of the Sea Conference in Geneva and at its margins in the Montreux
19 gathering, when the fundamental elements of the novel dispute settlement system
20 were hammered out and so I have observed the subsequent work of the Tribunal
21 with special interest and admiration.

22
23 I must add, in passing, that with all respect to my learned friend Professor Koh,
24 though he played a critically important role in the achievement of the final text of
25 UNCLOS, that does not carry with it any implication that his interpretation of the
26 Convention should be given any special weight. The interpretation of the Convention
27 is a matter for his high Tribunal and for no-one else.

28
29 Of the three environmental cases that have come before this Tribunal, this is
30 perhaps the most important in its general implications. It is therefore appropriate to
31 recall at the very outset the definition of "pollution of the marine environment" which
32 sets the tone for all that follows. It means, in the words of the interpretation clause in
33 Article 1 of UNCLOS:

34
35 "the introduction by man, directly or indirectly, of substances or energy into
36 the marine environment, including estuaries, which results or is likely to result
37 in such deleterious effects as harm to living resources and marine life,
38 hazards to human health, hindrance to marine activities, including fishing and
39 other legitimate uses of the sea, impairment of quality for use of sea water
40 and reduction of amenities."

41
42 That is the framework within which Malaysia invites this Tribunal to consider the
43 allegations of environmental detriment that arise in this case.

44
45 The facts of this case obviously fall within the terms of this definition. It raises the
46 issue of the extent to which a State can carry out extensive coastal reclamation
47 works that are likely to impinge upon the interests of a close neighbour without the
48 prior satisfaction of two fundamental conditions. The first is the requirement of
49 carrying out a public environmental impact assessment within its own territory --
50 I emphasise the word public – and in which the interests of the affected States could

1 be represented. Thus, in 1966, for example, a public enquiry was held in England
2 relating to the proposal for the development of a deep waste repository at Sellafield
3 on the Cumbrian coast abutting the Irish Sea. The Irish Government presented
4 orally a 50-page statement to the Inspector to which, in his final report, he attached
5 significant weight in his final report. No such opportunity has been made available to
6 Malaysia by Singapore; and in its Response Singapore, though describing at length
7 its own internal procedures, has not said otherwise.

8
9 The second, and perhaps even more important, requirement is that of consultation
10 with and warning to the neighbour whose waters, coastline and fishery resources
11 may be adversely affected. It is not enough for the actor State unilaterally and
12 privately to determine what it thinks the environmental impact of its proposals may
13 be. It is bound by its undertakings in UNCLOS to contemplate the likely effect that
14 its activities may have on other States and on the marine environment generally, and
15 to ascertain that effect and take it into account.

16
17 None of that has happened here. As the distinguished Agent and the learned
18 Attorney-General of Malaysia have already told the Tribunal, Singapore has
19 proceeded unilaterally in this matter, without regard to the objectively verifiable
20 interests of Malaysia. Singapore is not entitled to say that Malaysia should first
21 demonstrate the adverse effects of Singapore's action, notwithstanding the fact that
22 Singapore did not initially inform Malaysia of what that action would be. Malaysia
23 cannot be expected to respond to a case that has not been presented in appropriate
24 detail. Yet that is what Singapore has asked Malaysia to do; and it is legally
25 unacceptable. So Malaysia has been obliged to introduce into the close and
26 intensive relationship with its neighbour the divisive element of recourse to litigation.
27 It does so with regret, but in the confidence that an impartial tribunal will uphold
28 Malaysia's position and condemn the continuation of Singapore's arbitrary action.

29
30 It is in this context that Malaysia now seeks the prescription by this Tribunal of
31 provisional measures. My task today is to offer the Tribunal an introduction to and
32 summary of Malaysia's request.

33
34 Before doing so, however, I should very briefly outline the geographical setting of the
35 present case. The Members of the Tribunal will by now be familiar with the map
36 which appears on their screens, a map which shows the island of Singapore lying on
37 the northern side of the Singapore Straits. The island is surrounded on three sides
38 by the territory of Malaysia, from which it is separated by the Johor Straits. The
39 width of these Straits varies. On the western side there is a Johor promontory of
40 which the most relevant marked features are Tanjung Pelepas and Tanjung Piai. At
41 the western end of Singapore island is a point named Tuas. To the north lies the
42 Malaysian mainland of the State of Johor which at one point is linked to Singapore
43 by a causeway that carries vehicular and rail traffic, as well as pipelines bearing
44 fresh water from Malaysia to Singapore. To the north-east of the eastern end of
45 Singapore lie the Singapore islands of Pulau Ubin and, to the east of it, Pulau
46 Tekong. North of these two islands lies the estuary of the Johor River which flows
47 entirely in the territory of Malaysia. To the south-east of Pulau Tekong, on the Johor
48 shore of the Straits, lie Pularek – a military training area – and Tanjung Pengelih.

1 You heard the learned Agent of Malaysia identify the additional information that the
2 map carries about the colours and the dates of the work done by Singapore so it is
3 not necessary for me to repeat what he has said. I need only add that in addition to
4 the yellow coloured areas there have been indications by Singapore that it intends to
5 link by bridges or causeways the reclaimed areas in the Singapore islands with
6 possibly adverse effects on navigation in the Kuala Johor Channel.

7
8 Mr President and Members of the Tribunal, I can now turn to the substance of the
9 present Request. First, a brief word about what Malaysia seeks in the way of
10 provisional measures. There are four elements in Malaysia's request:

11
12 First, and most immediately important, is the request that pending the decision of
13 the Annex VII Tribunal, Singapore should suspend all current land reclamation
14 activities in the vicinity of Pulau Tekong, Pulau Ubin and areas claimed as territorial
15 waters by Malaysia.

16
17 Second, Singapore should provide Malaysia with full information as to its current and
18 projected activities, including in particular their proposed extent, their method of
19 construction, the origin and kind of materials used, and designs for coastal protection
20 and remediation (if any).

21
22 Third, Singapore should afford Malaysia a full opportunity to comment upon these
23 activities and their potential impacts.

24
25 Lastly, Singapore should agree to negotiate with Malaysia concerning any remaining
26 unresolved issues.

27
28 I pass now to a consideration of the conditions governing the prescription of
29 provisional measures by this Tribunal.

30
31 UNCLOS, Article 290, paragraph 5 lays down three conditions.

32
33 The first condition is the need for *prima facie* jurisdiction. This does not require, as
34 hardly needs saying, a firm finding that there is jurisdiction – only that there is *prima*
35 *facie* jurisdiction.

36
37 The elements in such a finding are as follows:

38
39 (1) That both Parties should be Parties to UNCLOS. They are.

40
41 (2) That the dispute is one that concerns the interpretation or application of
42 UNCLOS. There can be no doubt that this is such a dispute, as can be seen from
43 the following summary of the main points in issue.

44
45 First, the conduct of Singapore involves manifest violations of Part XII of
46 UNCLOS relating to the protection and preservation of the marine
47 environment and to the rights of Malaysia. It is only necessary to mention, not
48 to read, to this specialist court the terms of Articles 192, 193, 194, 195, 198,
49 200, 201, 204, 205, 206, 208. However, for the convenience of the Tribunal,
50 those Articles are reproduced at Tab 6 of the bundle of documents before

1 you. The gravamen of Malaysia's charge against Singapore is that the latter
2 is paying no heed to the general concern for the protection and preservation
3 of the marine environment, or to Malaysia's rights, which are reflected in detail
4 in these Articles.
5

6 That I say no more about this aspect of the case should not be seen as in any way
7 diminishing its central importance. The essence of the present case is that it is
8 about the fulfillment of the philosophy of the protection and preservation of the
9 marine environment. The facts on which it is based will be described more fully
10 presently.
11

12 The second manifest violation is Singapore's failure to co-operate or consult
13 over its reclamation projects. This involves, first, consideration of Part IX of
14 UNCLOS regarding enclosed and semi-enclosed seas. That the Straits of
15 Johor fall within this category there can be no doubt, as is evident from the
16 definition in Article 122 and the obligations stated in Article 123(b), that each
17 Party shall endeavour to co-ordinate the implementation of its rights and
18 duties with respect to the protection and preservation of the marine
19 environment and, in Article 123(d) to invite, as appropriate, other interested
20 States to co-operate with them in furtherance of the provisions of this article.
21

22 The third category of violation relates to Singapore's trespass within the limits
23 of Malaysia's territorial sea. This falls within the scope of section 2 of Part II
24 of the Convention, especially Article 15, concerning the delimitation of the
25 territorial sea between States with opposite coasts.
26

27 The third element relative to the prima facie jurisdiction of the arbitral tribunal
28 is that arbitration is deemed to be the appropriate means of dispute settlement
29 between the Parties. This follows from Article 290, paragraph 5, of the
30 Convention and the fact that, as foreseen in Article 287, paras. 3 and 5, both
31 Parties have not committed themselves to the jurisdiction of this Tribunal on
32 the merits of the case.
33

34 The fourth element is that neither Party should have made any relevant
35 reservation to the applicability of UNCLOS, Part XV, Section 2. Neither of
36 them has made such a reservation.
37

38 Fifth, it must be shown that there exists a dispute between the Parties. It is
39 evident, in the light of the diplomatic correspondence and negotiations,
40 already described by the learned Attorney-General, that a dispute exists. On
41 the one hand, Malaysia has pointed to the failure by Singapore (a) to comply
42 with its good neighbourly obligations under UNCLOS, (b) to notify Malaysia of
43 projects that risk serious transboundary impact, (c) to consult with Malaysia
44 thereon and (d) to initiate joint consideration of the environmental
45 consequences of the reclamation project. In opposition to this, Singapore
46 denies that the reclamation projects impinge on Malaysia's territorial waters or
47 that they may adversely affect Malaysia's coastal and maritime environment.
48 It is true that Singapore has acknowledged in its Note of 2 September 2003
49 that, as a matter of law, both countries have an obligation to protect the
50 marine environment of the Straits and to avoid conduct which impacts

1 adversely on the territory of the other State. This is an important admission
2 by Singapore. But it has not led Singapore to suspend the work, or even to
3 agree to take the kind of action contemplated in UNCLOS. To the contrary,
4 there are indications (though denied by Singapore) of an acceleration of work
5 around Pulau Tekong.

6
7 *Lastly, I need take no more than a moment to observe that this dispute has*
8 *not been settled by any of the other means contemplated in UNCLOS, Part*
9 *XV, Section 1, Articles 280-283 – as has already been sufficiently elaborated.*

10
11
12 And so, Mr President and Members of the Tribunal, we may pass to the next major
13 element in Malaysia's case. This is the demonstration that the measures sought by
14 Malaysia are required, following the words of Article 290(1) of the Convention, "to
15 preserve the rights of Malaysia or to prevent serious harm to the marine
16 environment, pending the final decision".

17
18 Only the briefest reference is called for at this stage to the conduct of
19 Singapore that has led to the present proceedings. This will be dealt with
20 presently by my learned colleagues.

21
22 The Tribunal has before it the map which demonstrates visually and in the clearest
23 terms what Singapore is doing and proposes to continue doing. In general terms,
24 Malaysia does not deny the right of a State to reclaim land adjacent to its coasts.
25 But the matter is quite different when the reclamation takes place in narrow waters.
26 This might not be open to objection if it did not adversely affect the interests of
27 Malaysia and of the marine environment, and if it had been carried out after
28 appropriate procedures had been followed so as to ensure the protection of
29 Malaysia's interests and the preservation of the environment generally. Let me just
30 pause to emphasise it is not only a case about Malaysia's interests. I is a case
31 about the protection of the environment, of which this Tribunal is the guardian. But
32 this is not what has happened here.

33
34 The Tribunal will presently be provided with a fuller elaboration of damage to the
35 ecosystem within the Straits of Johor. For now it is enough to say that it is readily
36 apparent – even without going into much technical detail – that the Straits and
37 associated waters form an ecosystem of considerable sensitivity. All the waters are
38 connected to the open sea, and consist of salt water. The various river estuaries
39 (most importantly, the Johor River), however, provide for fresh water inflow and
40 moderate salinity gradients, two important factors increasing the productivity of tidal
41 environments. There are areas of mangrove along the shoreline, which provide a
42 habitat for prawns, crabs and fish; and the local fishery (for example, shrimp farming)
43 is substantial. Additionally, the Malaysian coast facing the Straits is used for
44 dockyards, wharves, jetties and fisheries. On the eastern side there is a Naval
45 Training Base (PULAREK) at Tanjung Pengelih, facing the Singapore island of Pulau
46 Tekong, the site of the most extensive land reclamation projects.

47
48 In its Diplomatic Note of 2 September 2003, Singapore reiterated its view that
49 "current and planned reclamation works have not caused and will not cause any
50 significant impact on any of Malaysia's concerns" which, as I stated a moment ago,

1 of course, include the protection of the marine environment. It should be noted,
2 particularly, that Singapore's studies have been almost exclusively focused on the
3 effects of measures in Singapore's territorial waters. Seemingly no serious attempt
4 has been made by Singapore to obtain information, or to measure effects, on the
5 Malaysian side of the Straits. In contrast, Malaysia has undertaken such studies,
6 and conducted an in-depth assessment of the effects of the various land reclamation
7 projects. These independent studies, whose main results will be presented to you
8 later today by Professors Sharifah and Falconer, show that the reclamation activities
9 are already causing, and threaten to continue to cause, serious harm to the marine
10 environment, especially in the Eastern sector of the Straits of Johor. Three points
11 seem particularly relevant.

12
13 First, the reclamation works will bring about major changes to the flow regime in the
14 Straits, especially west of Pulau Tekong. A quick glance at the map makes this
15 plain. Malaysia calculates that the sea around the reclamation site has been
16 reduced by 45%, ie from 170 km² in 1968 to 94 km² in 2002 and the current
17 reclamation works will, when completed, cover effectively two-thirds of the area of
18 water separating Pulau Tekong from Singapore.

19
20 Secondly, the increased current velocity will unbalance the relation between tidal
21 inflow and riverine outflow in the Johor estuaries, and more generally affect the tidal
22 range in the Straits. It will also have consequential effects in terms of coastal
23 erosion.

24
25 Thirdly, it will also bring about changes in the sedimentation. In particular, due to the
26 increased current around Pulau Tekong, a higher level of material will be deposited
27 in the area of slack water or in the lee of headlands, most likely on the Malaysian
28 side of the Straits.

29
30 From this summary exposition of what is happening and will continue to happen to
31 the marine environment unless stopped, I turn to mention the impact of Singapore's
32 activities on Malaysia's rights.

33
34 Singapore's activities particularly affect the rights of Malaysia relating to the
35 maintenance of the marine and coastal environment and the preservation of its rights
36 to maritime access to its coastline. The various rights at stake will be presented by
37 Professors Schrijver and Crawford. Essentially, Singapore's conduct violates three
38 types of obligation it owes to Malaysia.

39
40 First, as Professor Crawford will show, land reclamation activities conducted around
41 Point 20, at Tuas in the South West of Singapore, affect territorial waters claimed by
42 Malaysia since 1979. Singapore's conduct therefore is in breach of Articles 2 and 15
43 of UNCLOS.

44
45 Secondly, by failing to notify or consult with Malaysia about its current and planned
46 reclamation activities, Singapore has breached its obligation to co-operate with
47 Malaysia under Articles 123 and 197 of the Convention. This duty of co-operation is
48 at the heart of the present dispute. As Malaysia has made clear in its request for
49 provisional measures, it has throughout sought "a proper system of consultation,

1 notification and exchange of information” with respect to Singapore’s reclamation
2 projects.

3
4 Article 123 reflects the geographic reality that States bordering a semi-enclosed sea
5 are under an enhanced duty to co-operate. That the Straits of Johor fall within the
6 definition of Article 122 is self-evident. They are an area of sea surrounded by two
7 States consisting entirely of their respective territorial seas and are connected by
8 narrow outlets to the ocean.

9
10 Article 197 prescribes a similar duty of co-operation, irrespective of whether
11 particular areas of the sea qualify as semi-enclosed seas.

12
13 This duty to co-operate is further elaborated in Part XII of the Convention, dealing
14 with the protection and preservation of the marine environment. Article 1(4) of the
15 Convention, which I read to the Tribunal earlier, shows that the concept is to be
16 understood in a broad sense. It covers the maintenance of the marine and coastal
17 environment and the preservation of a State’s rights to maritime access to its
18 coastline. And in terms of geographical scope, it expressly refers to “estuaries”,
19 such as the mouth of the Johor river. In short, under both Articles 123 and 197,
20 Singapore is under an obligation to co-operate with Malaysia.

21
22 The duty of co-operation here so clearly laid down is no empty obligation. In the *Lac*
23 *Lanoux* case the arbitral tribunal observed that France’s duty of co-operation with
24 Spain meant that it “cannot ignore Spain’s interests. Spain is entitled to demand that
25 her rights be respected and that her interests be taken into consideration . . . If in the
26 course of discussions, the downstream State submits schemes to it, the upstream
27 State must examine them, but it has the right to give preference to the solution
28 contained in its own scheme, provided that it takes into consideration in a reasonable
29 manner the interests of the downstream State”.

30
31 Again, the International Court of Justice, in the 1974 *Fisheries* case, observed that
32 the duty to co-operate required that “[d]ue recognition must be given to the rights of
33 both parties”. Even more to the point, however, are the observations made by this
34 very Tribunal in para. 82 of the Order in the *Mox Plant* case. There the Tribunal
35 said that “the duty to co-operate is a fundamental principle in the prevention of
36 pollution of the marine environment under Part XII of the Convention and general
37 international law and that rights arise therefrom which the Tribunal may consider
38 appropriate to preserve under Article 290 of the Convention”.

39
40 These observations may now properly be applied to the facts of the present case.
41 Has Singapore complied with the duty of co-operation that it has itself accepted?
42 The answer is no. Singapore’s conduct has been dominated by unilateralism. It has
43 not consulted nor notified Malaysia of the land reclamation projects. Before the filing
44 of Malaysia’s statement of claim, it had not shared its information about the possible
45 impact of the project with Malaysia. It has brushed aside Malaysia’s repeated
46 requests for more information and for high-level negotiations to resolve the dispute.
47 When discussions eventually took place, on 13-14 August 2003, Singapore once
48 more denied Malaysia’s request for a suspension of works at Pulau Tekong, so as to
49 allow both sides to undertake studies and continue negotiations. Instead, precisely
50 in that area, which – as Singapore was well aware – is of the greatest concern to

1 Malaysia, it appears that Singapore has actually accelerated work on the reclamation
2 projects.

3
4 There is no need to repeat again here what I have already said about the impairment
5 by Singapore of Malaysia's rights under the terms of Part XII of the Convention.
6 These will, in any case, be developed in detail later by my colleagues.

7
8 Some words are necessary now about the requirement that the provisional
9 measures requested by Malaysia are appropriate, and indeed necessary, in view of
10 the urgency of the situation and the risk of irreparable harm that Singapore's projects
11 would cause if it was allowed to pursue them at its will.

12
13 I will deal with the risk of irreparable harm first.

14
15 What would be the result of not prescribing provisional measures and thus allowing
16 Singapore to continue to violate Malaysia's rights? If Singapore completes the
17 projects it is currently engaged in, there will be no return. One need only recall the
18 main features of, for example, the reclamation project currently undertaken at Pulau
19 Tekong, to appreciate that, once completed, this land will not be given up again.
20 These projects are not designed to be of a temporary nature. They are intended to
21 be permanent in character and involve a method of construction that is effectively
22 irreversible. They involve the deposit of an estimated 2,000 million tons of sand as
23 part of concrete structures which, for all intents and purposes, simply cannot be
24 demolished or modified. Given these facts, if Singapore were allowed to continue
25 with its current reclamation projects, it would irreparably harm Malaysia's rights and
26 the marine environment. It is therefore crucial that Singapore suspend its current
27 reclamation activities, as requested by Malaysia, and that it provide Malaysia with full
28 information about these projects and allow Malaysia ample opportunity to comment
29 on these works.

30
31 Passing to the question of urgency, Malaysia submits that Singapore's activities
32 must be dealt with urgently. Although some of the work will not be begun for some
33 time yet, Singapore refuses to suspend or even modify its current reclamation works.
34 These continue at full speed, or are even being accelerated. Due to Singapore's
35 refusal to co-operate, Malaysia cannot provide you with exact information about the
36 schedule of works. However, on the basis of its own information, it appears that
37 Singapore intends to reclaim an area of 1,488 hectares of land, in and around Pulau
38 Tekong, by 2005. Assuming that work is carried on for 365 days a year – which is
39 consistent with the conditions laid down in Singapore's Notice to Mariners – the sea
40 is being reduced by 0.8 hectares (over 2 acres) per day.

41
42 The Tribunal will no doubt wish to compare this assessment with the rather guarded
43 terms in which Singapore has expressed the position in para. 161 of its Response.
44 Singapore carefully limits its statement to 'waters available to shipping', thus leaving
45 out of the discussion the effect of its activities on other waters. But even in relation
46 to the areas to which Singapore refers, it seeks to diminish the significance of what it
47 is doing by saying that it 'consists mainly of continued in-filling . . . by the completion
48 of sand filling . . . and in limited areas the stages of trench dredging operations. The
49 works will not involve any significant change of the present reclamation profile which
50 *is already very close to the final reclamation profile*'. The Tribunal could not ask for

1 any more specific acknowledgement of the intention of Singapore to continue the
2 work without interruption or delay. So urgent action is required.

3
4 An additional factor emphasizing the urgency of the request to this Tribunal is that of
5 the delay in the constitution of the Article VII Arbitral Tribunal that will consider the
6 merits of the case. It is unlikely that this tribunal can be rapidly constituted. Given
7 the time required for the tribunal to agree on the organization of the arbitration and
8 dates for the hearings, there is, in Malaysia's submission, a clear case for this
9 Tribunal to act now, rather than to let further time pass.

10
11
12 This leads me straight into a related question. It is necessary to react to the
13 statement in the Singapore Response that only 19 days are left before the Article VII
14 Tribunal will be established and that the present Tribunal does not have authority to
15 prescribe measures that extend beyond that period.

16
17 The statement that only 19 days remain before the Article VII Tribunal comes into
18 existence is misconceived. Even if it were accurate -- and there is no basis on which
19 one can be sure that it is -- it would not mean that the Article VII Tribunal would
20 immediately be in a position to consider the question of provisional measures. No
21 doubt Singapore would raise before that body the same issues that it has raised
22 before this Tribunal, and re-consideration of these issues is bound to take some
23 time.

24
25 As to the assertion that the present Tribunal does not have authority to prescribe
26 measures that extend beyond the constitution of the Article VII Tribunal, this is both a
27 misinterpretation of Article 290, para. 5 of UNCLOS, and is inconsistent with the prior
28 practice of this Tribunal.

29
30 Obviously, Article 290(5) does not contemplate the prescription of measures by this
31 Tribunal once the Article VII Tribunal has been constituted. But there is nothing in
32 Article 290(5) to suggest that this Tribunal's measures must be limited in time. To
33 the contrary, the indication in the last sentence of Article 290(5) that the Article VII
34 Tribunal 'may modify, revoke or affirm these provisional measures' necessarily
35 implies the continuing effectiveness of the prescribed measures even after the
36 constitution of the Article VII Tribunal. How could that tribunal 'modify, revoke or
37 affirm' those measures unless they were still in force?

38
39 The *Southern Blue Fin Tuna* case shows how the system actually works. In the
40 operative part of the provisional measures decision of this Tribunal it used the
41 following words: "The Tribunal prescribes, *pending a decision of the arbitral tribunal*,
42 the following measures". Then, in the operative part of the Article VII Tribunal
43 decision itself, the latter, having decided that it was without jurisdiction to rule on the
44 merits, went on to decide "in accordance with Article 290(5) of UNCLOS, that
45 provisional measures in force by order of the Tribunal [i.e. ITLOS] are revoked from
46 the day of the signature of this Award". How could they be revoked if they were not
47 still in force nearly a year after they were prescribed and nearly eight months after
48 the Article VII Tribunal was constituted?

49

1 Mr President, Members of the Tribunal, I have reached a point at which I may
2 conclude, by way of summary, with a rather staccato reply to Singapore's own
3 summary of the Provisional Measures rules, as given in its Response.

4
5 Singapore says, first, that there must be a risk of serious harm. Malaysia says that
6 there is, particularly in relation to the ecosystem, as will be more fully demonstrated
7 by my colleagues later.

8
9 Singapore says, secondly, that the harm must be irreversible. Malaysia points out
10 that it is. The reclamation works cannot be undone, and their detrimental effects on
11 the environment cannot be wound back. The situation is comparable to that of a
12 ratchet cog: having moved on a notch, you cannot turn it back.

13
14 Thirdly, Singapore says that the harm must be uncompensable. Malaysia replies that
15 harm to the marine environment is self-evidently uncompensable, as is the continuing
16 damage to Malaysia's own interests. How do you calculate the destruction of
17 mangrove, the erosion of coastline or the pollution of beaches? There is no need to
18 prove that such damage cannot be compensated.

19
20 Fourth, Singapore says that the harm must be imminent. Indeed it is; it has already
21 happened in part and in significant respects will continue to do so.

22
23 Lastly, Singapore contends that the burdens and costs to itself of having to suspend
24 the challenged acts must be balanced against the cost of a possible occurrence of
25 the harm alleged. Malaysia responds that so far as harm to the marine environment
26 is concerned, there can be no question of assessing the cost of a possible
27 occurrence of harm. Only if Singapore could show that the harm, actual and
28 foreseen, to the marine environment is of a minimal and unimportant extent could
29 any kind of balancing be attempted.

30
31 Mr President, it may be that you would wish to break at this point, as I have now
32 come to the end of my contribution. I would therefore respectfully ask you to call
33 upon Professor Sharifah to continue the presentation of Malaysia's case.

34
35 **THE PRESIDENT:** Thank you very much. We started the meeting half an hour late.
36 I think we will take a half-hour break now before calling upon Professor Sharifah.

37
38 **(Short adjournment)**

39
40
41 **THE PRESIDENT:** The next presentation will be made by Professor Sharifah.
42 Before giving her the floor, I would like to make this statement.

43
44 Pursuant to the decisions taken during the consultations held this morning with the
45 Agents of the parties, it was agreed that Professor Sharifah would first make a
46 statement as a member of the delegation of Malaysia. Thereafter, she will be
47 examined by the Respondent as an expert. For this purpose, before being examined
48 by the Respondent, Professor Sharifah will make a solemn declaration provided for
49 under Article 79(b) of the Rules of the Tribunal.

50

1 **PROFESSOR SHARIFHA MASTURA:** President, distinguished judges, good
2 morning. My name is Sharifah Mastura and I am from the Department of Geography
3 at the University of Kebangsaan, Malaysia. My field of specialty is geomorphology,
4 which is the study of long-term landform changes.

5
6 (SLIDE PRESENTATION)

7
8 In my presentation, I shall first introduce Singapore's reclamation projects. I shall
9 then discuss the implications of these projects for Malaysia's coastal and estuarine
10 waters and the risks they present to the aquatic environment.

11
12 Malaysia has undertaken a number of environmental impact assessment studies
13 relating to these reclamations, which I will briefly summarise.

14
15 From these studies, we have been able to make a preliminary assessment of the
16 impact of the reclamations on the flow, sediment transport and water quality
17 characteristics within our coastal and estuarine waters.

18
19 I shall summarise our concerns with some brief conclusions.

20
21 Singapore is located south of Peninsula Malaysia, separated by the Straits of Johor.
22 It is linked with Malaysia by a causeway located here. Malaysia's coastline along its
23 southernmost tip surrounds Singapore from the south-westerly corner of Singapore
24 to the easterly tip of the island, by Changi airport. It is the morphology of this
25 waterway that is of concern to Malaysia.

26
27 The major reclamations of concern to Malaysia are the large reclamation at Pulau
28 Tekong and Pulau Ubin, located to the north-east of Singapore, and shown here. It
29 is the eastern sector. Secondly, in the west, there is the extension at Tuas, located
30 at the south-west tip of the island, and shown here

31
32 Firstly, we shall consider the reclamation works in the eastern sector.

33
34 Here you see the original shoreline as configured in 1968, shortly after Singapore
35 became independent from Malaysia.

36
37 In 1989, Singapore reclaimed a large part of the coastal region to construct its new
38 airport at Changi. In 1997, Singapore almost doubled the size of the reclamation to
39 increase the capacity of the airport.

40
41 In 2002, Singapore commenced construction of a major reclamation in much deeper
42 water around Pulau Tekong, almost doubling the planned size of the island. The
43 eastern edge of this reclamation is located less than 0.75 km from the Malaysian
44 naval base at Tanjung Pengelih.

45
46 Singapore's Concept Plan 2001 also highlights its intention to undertake additional
47 reclamation works to the east of Pulau Ubin.

48

1 Secondly, we shall consider the reclamation works in the western sector. Again,
2 here you see the original shoreline as configured in 1968, followed by some minor
3 reclamation works in 1989.
4
5 In 1997, fairly substantial reclamation works were completed at the south-westerly tip
6 of the Island at Tuas and around the Jurong islands, just east of the headland at
7 Tuas
8
9 In 2002, Singapore commenced the construction of a very substantial extension
10 southwards, thereby increasing considerably the surface area of the Tuas
11 reclamation. Tuas will eventually be expanded, as shown here, extending in a solid
12 column 7 km seawards.
13
14 To summarise, the reclamation work around Pulau Tekong has already led to an
15 increase in the plan area of 35 km², that is, a 184% increase in the surface area of
16 the Pulau Tekong.
17
18 It has already reduced the main shipping channel width from 4.12 km to 2.74 km,
19 a 33% reduction, with the threat of more to come.
20
21 The shortest distance from the Malaysian naval base at Pularek to Singapore has
22 been reduced from 1.8 km to 0.75 km, a reduction of 58%.
23
24 Secondly, Singapore has considerably extended the headland at Tuas. In fact, it has
25 been extended 7 km seawards.
26
27 These considerable reclamation works threaten the integrity of Malaysia's sensitive
28 coastal and estuarine waters, especially near Pulau Tekong.
29
30 Malaysia seeks, as it is entitled to do: to minimise coastal erosion and siltation and
31 morphological change; to protect coastal and estuarine water quality, biodiversity
32 and ecology; to protect the socio-economic aspects of the coastal zone, particularly
33 with regard to fishermen and tourism. Singapore's projects threaten all these aims.
34
35 The key issues of concern to Malaysia can be summarised as follows:
36
37 The sheer scale of these reclamations will undoubtedly lead to significant changes in
38 tidal and flood elevations and particularly water velocities.
39
40 Significant changes to the shoreline and coastal topography will undoubtedly lead to
41 changes in the wave climate and near-shore response.
42
43 Change in the current flow field arising from the reclamations will cause changes in
44 sediment transport rates, the long term bed level and the shoreline.
45
46 Changes in the water elevations and the current flow fields threaten to impact on
47 water quality, cause backwater effects in Malaysian rivers and affect fisheries
48 including aquaculture.
49
50 There will be impacts on ship and small craft navigation. There is a significant

1 amount of tourism in the region using small craft and this industry is likely to be
2 affected by the larger currents and changing wave climates. Impacts on fisheries
3 and the coastal economy will particularly affect local communities. Some of the
4 poorest people in my country live in this region.

5
6 I will now highlight the main impact studies undertaken by Malaysia.

7
8 Three main studies have been undertaken to assess the hydro-environmental impact
9 of these reclamations on Malaysia's coastal and estuarine waters. Malaysia has
10 filed these with the Tribunal. Let me review these briefly.

11
12 The first of these studies was conducted by Delft Hydraulics. The main findings of
13 this preliminary study are as follows:

14
15 Increased velocities would arise due to the reduction in the cross-sectional areas of
16 flow, leading to scouring and erosion.

17
18 There will be a reduction in tidal amplitude and a delay in the tidal times of high and
19 low water, caused by increased bed friction in the Straits.

20
21 There are threats to water quality and the level of contaminated sediments in the
22 water column, caused partly by an increase in the turbidity levels.

23
24 There will be an increase in salinity gradients and retention of pollutants, leading to
25 a decrease in the already critical dissolved oxygen levels.

26
27 There will be large scale loss of important inter-tidal habitats, leading to a reduction
28 in biomass production and fish nurseries.

29
30 There will be increased eutrophication caused by longer residence times, especially
31 in the western sector.

32
33 There will be limitations on the manoeuvrability of larger ships.

34
35 The reclamation at Pulau Tekong could well generate pronounced tidal eddies –
36 which would pose an increased risk to shipping, particularly at low speeds, as well as
37 leading to pollutant trapping and sediment deposition.

38
39 I turn to the second study by the Malaysian Department of Irrigation and Drainage.
40 As to the eastern sector near Pulau Tekong, its findings can be summarised as
41 follows:

42
43 A decrease in tides of between 0.1 to 0.2 m, causing a reduction in the tidal range of
44 about 10%.

45
46 The maximum tidal current near the Malaysian Naval Base at Pularek will increase
47 from about 0.7 to 1.2 m/s, an increase in excess of 70%.

48
49 Waves will be reflected from the sheet piles at Pulau Tekong towards the Malaysian
50 coastline adjacent to Pularek

1
2 There will be an increase in tidal flushing of about 7%.
3
4 There would be an increase of about 2% in salinity levels at the mouth of the Johor
5 River.
6
7 There would be an overall average increase in suspended sediment concentrations
8 of about 20%.
9
10 The channel north of Pulau Ubin and the area north of Pulau Tekong would
11 experience increased siltation of between 10 to 20 cm/year.
12
13 The channel near Pularek would undergo erosion of between 10 and 50 cm/year.
14
15 As to the western sector near Tuas, the Drainage and Irrigation Department's study
16 findings can be summarised as follows:
17
18 There is a reduction in tidal flushing of about 8 to 25%.
19
20 There is a 2% decrease in the level of salinity in the region; this may seem small
21 but, in conjunction with other changes occurring at the same time, can be significant.
22
23 There is an increase in the concentrations of the suspended sediment plumes of
24 about 7.5 mg/l.
25
26 There is an increase in the overall siltation levels from about 2.5 to 10 cm/year.
27
28 The third study was undertaken by my own unit at University Kebangsaan, Malaysia.
29 So far as the eastern sector is concerned, its results can be summarised as follows:
30
31 An increase in wave activities and current velocities, a decrease in channel width
32 and an increase in sedimentation have an impact on: fisheries and aquaculture;
33 mangroves; navigation and berthing of vessels; shoreline erosion; seabed
34 scouring; and, to a lesser extent, the stability of jetties.
35
36 I want to draw your attention to the erosion and sedimentation in the impacted zone.
37
38 As to the western sector at Tuas, our main findings can be summarised as follows:
39 reduction in flushing, reduction in salinity, increases in siltation and suspended
40 sediments, which lead to: degradation of water quality; destruction of corals; and
41 destruction of seagrass.
42
43 This is a mangrove forest that is sensitive to process change. These are coral and
44 seagrass beds that are affected by the reclamation works. This is a close-up view of
45 the seagrass bed in the Straits of Johor.
46
47 In conclusion, these three technical studies all indicate that the recent large
48 reclamation projects being undertaken by the Government of Singapore risk having
49 a significant adverse impact on the environment and economy of Malaysia's coastal
50 and estuarine waters in and around the Straits of Johor.

1
2 The reclamation works are predicted to have an adverse effect on: coastal
3 hydrodynamics and wave characteristics; sediment fluxes, erosion and siltation
4 rates; tidal flushing, salinity and water quality; hydro-ecology, habitats and fisheries;
5 navigation, moorings and jetty stability; and further consequences on the economy
6 and on coastal villages.

7
8 Mr President, would you please call on Professor Crawford to continue Malaysia's
9 presentation?

10
11 **THE PRESIDENT:** Professor Sharifah, before leaving, I read in the earlier statement
12 that you are now to make a declaration under Article 79(b) of the Rules, and then
13 you will be examined by the Respondents.

14
15 **PROFESSOR SHARIFAH MASTURA, declared and affirmed**
16 **Cross-examined by MR REISMAN**

17
18 Q Professor Sharifah, on behalf of Singapore, I would like to ask you a few
19 questions. It is the ordinary practice to receive curriculum vitae. Although you were
20 not a witness, yesterday we thought you were to be a witness. Beyond your work as
21 a geomorphologist and as a professor, are you a consultant to your government?

22 A I am not a consultant but I do work for the government.

23
24 (Problems with microphones not being switched on)

25
26 Q I had asked you whether, in addition to your role as a professor of
27 geomorphology, you were a consultant to your government. You had reflected on it
28 and said you do work for your government. Is that correct?

29 A Yes.

30
31 Q And you have attended meetings?

32 A Yes.

33
34 Q Your government is engaged in other land reclamation projects in Malaysia; is
35 that correct?

36 A Can you repeat the question, please?

37
38 Q Yes. The Malaysian Government is engaged in land reclamation projects?

39 A Yes.

40
41 Q Have you been consulted on them?

42 A Most of them, on expert panel, yes.

43
44 Q To your knowledge, have those projects been communicated to Singapore or
45 has Singapore been invited to consult on any of them?

46 A Can you repeat the question, please?

47
48 Q To your knowledge, has the Government of Malaysia or in any way consulted
49 with the Government of Singapore on the land reclamation projects on which you
50 have been engaged?

1 A I do not know about that one.

2

3 Q You do not know, thank you. Did it occur to you at any point to ask, since
4 you seem to be very sensitive to the notion of a need for consultation for land
5 reclamation projects in an enclosed area, did it occur to you to ask?

6 A No.

7

8 Q You stated that the activities of the Government of Singapore in its land
9 reclamation project risked having a significant and adverse consequence and in the
10 conclusion to the UKM Report, which I believe you were an author of or co-author of,
11 the report acknowledged that only some of the consequences that you were
12 discussing could be attributed to Singapore. Is that correct? Would you like me to
13 read the conclusion to you? "Some of this degradation such as in physical
14 environments can clearly be linked to the land reclamation work carried out by
15 Singapore. However, linking impacts of reclamation work on biological and marine
16 ecosystems are more difficult as these ecosystems are subjected to cumulative
17 impacts contributed both by Singapore reclamation work and various activities
18 carried out on the Malaysian side".

19 A I believe that is why we need the Impact Assessment.

20

21 Q But do you still share that view? This is still the view?

22 A Yes.

23

24 Q In the interests of clarifying precisely what are the relative contributions,
25 I would ask you to look at a brief selection that I will read to you. I will put it on the
26 screen and I will also give you a copy of it so you can consult it yourself, Professor.
27 I believe the Members of the Tribunal will be able to observe this on their screens:

28

29 "In the last few decades, the sediment lode of rivers has increased tremendously
30 over the conversion of forest for agriculture, logging, mining, urbanisation and other
31 infrastructure development activities. Between 1972 and 1983 4.24 million hectares
32 of forest land in Peninsular Malaysia was allocated for development of plantation
33 crops and other facilities under the seven regional land development schemes by the
34 Ministry of Land and Regional Development. Consequently the status of the river
35 water clarity and percentage clean for suspended solids showed that almost 90% of
36 the rivers in this country are polluted by silt.

37

38 With the exception of Matang mangrove forest reserve, which is well managed,
39 others are managed badly. Some of these mangrove forests have been reclaimed
40 for agriculture, housing, aquaculture and for industrial purposes. As a result, there
41 is a depletion of mangrove forest and this need management with its continuous
42 depletion would be disastrous to the ecosystem.

43

44 Coastal erosion is another serious problem facing the Malaysian coast. National
45 Coastal Erosion Study reports that coastal erosion affects every state in Malaysia. It
46 occurs along more 1300 km of Malaysia's 4800 km shoreline. In eroding areas the
47 average rate of shoreline retreat ranges from less than 1 metre per year to more
48 than 10 metres per year. Along 140 km of shore, coastal erosion seriously threatens
49 important facilities. Along another 240 km it may seriously threaten other important
50 facilities in the foreseeable future.

1
2 Fish landings, which increased threefold from 200,000 tons in the early 1960s to
3 700,00 tonnes in 1980, show a sharp decline. This situation, together with a high
4 percentage of trash fish land that indicate that the inshore resources are over-
5 exploited.

6
7 Pollution is being caused by indiscriminate dumping of non-biodegradable and
8 biodegradable waste from urban areas, industries and other human activities.
9 Pollution from sewage is caused by untreated discharge from refinery industries,
10 housing and other development. In Malaysia between 35 to 60% of the faecal
11 coliform counts in the state coastal water are higher than the standard permitted.”

12
13 Professor Sharifah, you wrote that in 1992 and published it in a peer review book,
14 did you not?

15 A Yes.

16
17 **MR REISMAN:** Mr President, Members of the Tribunal, I have no further questions.

18
19 **THE PRESIDENT:** Thank you, Professor Reisman.

20
21 **Mr CRAWFORD:** Mr President, I have no questions to ask Professor Sharifa and so
22 Professor Sharifa can now sit down in her capacity as a witness or indeed in any
23 capacity.

24
25 The examination-in-chief of Professor Falconer will take perhaps just a little over ten
26 minutes. I am in your hands, Mr President, but I think that there have been some
27 delays this morning it would probably be efficient if I examined Professor Falconer in
28 chief now, and if the cross-examination, I am sure Singapore will not object, the
29 cross-examination can occur after the lunch break.

30
31 **THE PRESIDENT:** Thank you. We are hoping to end this session at 1.30.

32
33 **MR CRAWFORD:** In that case, they will have at least some period of cross-
34 examination before the lunch break. We will just have to go and get him.

35
36
37 **PROFESSOR FALCONER, affirmed and sworn**
38 **Examined by MR CRAWFORD**

39
40 Q Professor Falconer, you have produced a report reviewing some of the
41 Malaysian reports to which your CV was attached and which was attached to our
42 Statement of Claim. Do you have anything to add either to your CV or to that
43 Report?

44 A I have nothing to add specifically to my CV other than perhaps to comment
45 that I have been involved with not far sort of about a hundred Environmental Impact
46 Assessment Studies worldwide, and many of them are major projects. For example,
47 Po Hi Bay which is a major study at the moment I am involved with.

48
49 Q Professor Falconer, briefly, what in your view are the most immediate
50 consequences of Singapore's reclamation activities?

1 A In the context of Malaysia I believe that geographically the Pula Tekong
2 reclamation is the bigger issue. It is nearer to the Malaysian coast and, more
3 specifically, on the technical front I believe that the issues relate particularly to the
4 velocities and sediment transport rates between Pula Tekong and Pularek. I think
5 this will have the biggest impact on the Malaysian coastline.
6

7 Q Can you explain to the Tribunal why the increased movement of sediment is
8 important?

9 A In the region between Pularek and the reclamation just to the south of Pula
10 Tekong, both studies carried out by the Department of Irrigation and Drainage in
11 Malaysia, and studies by Singapore have indicated almost exactly that the velocity
12 will increase from about .7 to 1.2 metres per second; a 70 per cent increase in
13 velocity. Sediment transport moves at a much higher rate than velocity. This would
14 result in a threefold increase in mud transport and a 15 fold increase in sand or silt
15 transport using standard international theories.
16

17 Q You were asked to come as an independent consultant by the Department of
18 Irrigation and Drainage to comment on the reports which have since been presented
19 to the court. Are you satisfied with the content of those reports?

20 A Yes. The Department of Irrigation and Drainage have used an internationally
21 recognized computational model to assess the environmental impact aspects around
22 their coast. This is the Danish Hydraulic Institute model (MIK21). They have, in my
23 view, been cautious in their predictions on a number of aspects. May I take
24 sediment transport as one example? They have predict mud transport only which
25 means that the sediment transport predictions are threefold bigger as a result of the
26 reclamation south of Pulau Tekong. Had they assumed sand or silt transport then
27 they would have predicted changes of the order of 15 fold. Surveys have indicated
28 that half the area is covered with sand and half is covered with silt and mud.
29 Therefore, their predictions on sediment transport alone are undoubtedly cautious.
30

31 Q What immediate effects in your view are the land reclamations likely to have?

32 A If you look at the flow structure and you do not need computer simulations to
33 look at this, but if you imagine the flow coming around the headland by Tangung
34 Pengali, the current reclamation disrupts the flow. It is not streamlined to match the
35 flow. The narrowing of the channel at Tangung Pengali then subsequently leads to
36 eddies downstream which have been predicted in computer simulations both by
37 Malaysia and Singapore. These eddies trap sediments, they redeposit sediments in
38 all probability along the beaches at the edge of the eddy and they will cause
39 deposition. I have seen this myself. I have visited the site and what appears to be a
40 sandy beach in parts is now covered with mud and you get very much a stratified
41 effect. Sand below, and mud on the surface. These eddies caused by the narrowing
42 of the channel at Tangung Pengali, in my opinion, have led to this mud in all
43 probability being deposited there. If one were to look more comprehensively at
44 computer simulations, one could perhaps reduce the effects of these eddies, reduce
45 the effect of sediment deposition and reduce the effects of deposition on the coast.
46 So, in my view, it can be reversed.
47

48 Q Confronted with this situation in which these various forms of sediment
49 transport are occurring, what should the immediate response be in your opinion?

1 A My personal suggestion would be to carry out interim measures in terms of
2 interim computer model simulations using the models that have already been set up
3 and to look at how the shape of the reclamation where the sheet piles are could
4 possibly be modified to minimize the adverse hydro-environmental impact along the
5 coastline.

6

7 Q Is this going to be a very lengthy process in your opinion?

8 A Not if one uses the existing models. It could be done within typically three
9 months from the start of agreeing to go ahead.

10

11 Q Turning to other effects that the reclamation projects may have, other than
12 siltation which we have been discussing which, in your opinion, are the more
13 important ones?

14 A Three, the tidal range will change upstream of Pularek by typically 20 cm
15 predicted by computer simulations, conservatively predicted by computer
16 simulations. That, in context, is changing very rapidly as a result of the
17 implementation of the reclamation. We, in Europe are concerned about arguably
18 a 30 cm sea level rise over the next century so the change in the tidal range here is
19 of a not dissimilar order of magnitude to what we, in Europe, are concerned with,
20 a sea level rise occurring over the next century. Therefore, in my view, it is not
21 insignificant. It will affect the flow in the rivers, it will affect the groundwater flow, it
22 will affect salinity intrusion and 20 cm is not small.

23

24 Q You mentioned salinity; a layman would think that, with a major river flowing
25 into this area, and the sea coming from the other direction, there is going to be a
26 rather variable situation in terms of salinity. How could you predict what could
27 happen, and how could such a prediction make any real difference?

28 A Again, I would like to make the point first that I believe the DID Malaysia
29 simulations of salinity are conservative. They predict variations of 2 per cent, which,
30 again, on the surface sounds small, but a 2 per cent change in salinity can be quite
31 significant in many contexts, and one has to look at the aspects in a relative context.
32 This is an area which is highly sensitivity to salinity. I have worked in mangroves,
33 and published papers on mangroves. Mangrove forestation is highly dependent
34 upon salinity. The whole aquatic ecosystem in this region is highly dependent upon
35 salinity, so small changes in salinity could have a major impact on the eco-aquatic
36 system in the area.

37

38 Q You have suggested that computer modelling might be carried out which
39 could modify the form of the land reclamation project. If that is not done, if the land
40 reclamation project maintains its present footprint, what would you regard as the
41 likely long-term effects?

42 A I think it is the long-term effects which are important too because, as far as
43 I am aware, these have not been studied by either country, either by Malaysia or
44 Singapore, and it is the long-term effects which need to be investigated over the
45 longer term. They certainly could not be addressed in the three-month period. In my
46 view, to look at the long-term effects, one needs a much more comprehensive,
47 longer, study, probably carried out by an international organisation. But the longer-
48 term effects are changes in the bed topography: once a river starts to meander, for
49 example – you can have submerged rivers on the bed topography – you cannot stop
50 it. Therefore, I think it is essential that the long-term morphological processes – in

1 other words, bed level changes – are established. What would be the changes over
2 the next 50 years? What would be the changes over the next 100 years? Also, the
3 sustainability of the aquatic environment: what will be the impact of these
4 reclamations 100 years from now? They are not reversible; once they are put in
5 place, they cannot be removed. There are modelling tools that can be used to make
6 these predictions and in my view they should be used.

7
8 **PROFESSOR CRAWFORD:** Thank you, Professor Falconer. I have no further
9 questions.

10
11 **THE PRESIDENT:** Does the agent for Singapore want to cross-examine the
12 witness?

13
14 **MR KOH:** Mr President, we accept Professor Crawford's earlier suggestion that we
15 break for lunch now. My colleagues and I will look forward with great pleasure to
16 putting some very friendly questions to Professor Falconer after lunch.

17
18 **PROFESSOR CRAWFORD:** Mr President, the offer stands. I thought you had
19 rescinded it. If it would be convenient to the Tribunal, I would be happy now to make
20 the presentation on the maritime delimitation issue, so as to enable Singapore to
21 think about its questions over the lunch break. I anticipate that my next presentation,
22 which we thought would happen after Professor Falconer had been released, would
23 take about 25 minutes. I can go until half past one and we can resume with
24 Professor Falconer at 3 o'clock.

25
26 **THE PRESIDENT:** Would that be acceptable?

27
28 **MR KOH:** Mr President, if you have no objection, we could either cross-examine
29 Professor Falconer now and adjourn for lunch or we could adjourn now and return at
30 a time to be fixed by you and cross-examine Professor Falconer later. We are in
31 your hands, Mr President.

32
33 **THE PRESIDENT:** I suggest that we break now and come back in two hours.

34
35 **PROFESSOR CRAWFORD:** Sir, if we were going to go until 1.30 and then resume
36 at 3.00, I am concerned that, because of delays that have occurred, we do not keep
37 the Tribunal too late tonight. Clearly, we want to finish tonight, and the allocation of
38 four hours, as the one we planned on for our own presentations, we are sticking to.

39
40 **THE PRESIDENT:** I think we will continue until 1.30.

41
42 **MR KOH:** If we are to go on, I would like to cross-examine Professor Falconer now.

43
44 **Cross-examined by MR LOWE**

45
46 Q Professor Falconer, I should thank you on behalf of the Singapore side for
47 coming here to give evidence. The questions will not be long. I understand that you
48 trained as an engineer and that your report is only on the hydraulic model study of
49 the Straits of Johor. Do you hold yourself out as having any expertise in fisheries or
50 marine biology?

1 A Yes. I have been involved in fisheries with regard to hydro-environmental
2 studies. My computer models are used by the Irish Government for aquaculture
3 planning along the west Irish coast. We have been concerned here with a number of
4 issues relating to fish waste, for example, etc.
5

6 Q Your CV lists you as an expert adviser to the Department of Irrigation and
7 Drainage of the Malaysian Government. Is that a paid position?
8 A That is with regard to this study. I have not worked with them before, other
9 than this study.
10

11 Q That is a paid position?
12 A I was paid by the Department of Irrigation and Drainage to comment, to give a
13 technical assessment of their report.
14

15 Q Are you still retained in that capacity?
16 A No, not by the Department of Irrigation and Drainage.
17

18 Q The references in your report include the two volumes of the DID report and
19 five other papers that were written after 1973. Were you asked to assess any other
20 reports on the Straits of Johor?
21 A Not by the DID.
22

23 Q Were you asked to report on Volume 3 of the DID report?
24 A No.
25

26 Q Did you see Volume 3 of the DID report before you wrote your expert review?
27 A No.
28

29 Q Do you know what is in Volume 3 of the DID report?
30 A No.
31

32 Q Did you notice the reference in the DID report to Volume 3?
33 A Volume 3 is just the data.
34

35 Q Do you usually make expert evaluations of reports without seeing the data
36 upon which they are based?
37 A Yes, all the data that was necessary for me to comment on was related to the
38 numerical model. I was asked specifically to comment on the numerical model, the
39 quality of the work undertaken with regard to the numerical modelling. I saw all the
40 data that was necessary to be included in the numerical model, so far as I am aware,
41 and I feel quite confident about commenting on the quality of the work undertaken by
42 DID.
43

44 Q Do you feel that you have been asked to comment on the use to which that
45 data was put, and that was your remit, and you have not been asked to comment on
46 the quality of the data itself?
47 A Some of the data was collected by other organisations, commissioned by the
48 DID. It is virtually impossible for any independent expert witness to comment
49 specifically on such matters as the data with regard to the bed topography, unless
50 you physically take the data yourself. Similarly, with the soil surveys, I was not a

1 party to the organisation collecting the soil surveys, so I cannot comment specifically
2 on the accuracy, but I do not think any independent expert could either.

3

4 Q I understand that. So you are not commenting on the data which you did not
5 see, which is fair enough. Can you clarify one point for us: are the statements that
6 are made in the DID report on the impacts of the reclamation work based on
7 measured impacts, or are they based on mathematical predictions of what the
8 impacts will be?

9 A Most of the predictions in the DID report are based on mathematical mode
10 predictions. They were commissioned to undertake the study. I forget the exact
11 date. I think it was January 2002, with a remit to submit the report by
12 August/September 2002, or whatever. During that time period, it would be
13 impossible to take field measurements to ascertain the impact of the reclamations. It
14 is too short a time period. You would have to take field measurements over a period
15 of two or three years, typically, to ascertain the impact of reclamations.

16

17 Q You read two of the three volumes of the DID report, and you looked at the
18 sites from Malaysian territorial waters on, I think, Monday 7 April this year, and you
19 met DID staff on Tuesday 8 April. Did you visit the actual sites in Singapore?

20 A No.

21

22 Q Did you try to visit the sites in Singapore?

23 A No. my brief was to comment on the quality of the work undertaken by DID.

24

25 Q Did you visit the Malaysian reclamation works at PTP?

26 A No.

27

28 Q Did you visit the Malaysian project at Tanjung Langsat.

29 A No, that was not part of my brief.

30

31 Q You refer in your paper to a number of hydro-environmental and
32 morphological changes. Again, to adopt Professor Crawford's layman's pose, if
33 I can ask you the question in this way: are the changes that you describe there
34 incremental, in the sense that they proceed gradually over a period of time, or do any
35 of them have a certain critical point at which there is a dramatic change in the way
36 that, for example, an over-exploited fish stock may suddenly collapse?

37 A The main factor which would change significantly quite suddenly would be
38 sediment transport rates. Sediment transport is highly dependent upon velocity.
39 You change the velocity field in any flow structure, and you may only increase it by a
40 relatively small amount, but you can change the sediment transport rates
41 dramatically. When the sediments are contaminated, this can often have a
42 significant effect on aquatic life.

43

44 Q The transport and the velocity rates would be affected by the configuration of
45 the reclamation works?

46 A They could be.

47

48 Q You said towards the end of your testimony that there would be certain effects
49 that would be felt in 50 or 100 years' time, and that had to be taken seriously. Could
50 you tell us what effects you expect to happen by a week on Thursday?

1 A I did not say that, if I can clarify. I said that no long-term environmental impact
2 assessment or morphological studies had been undertaken. I am sorry.

3

4 Q I am grateful for that clarification. Can you tell us now....

5 A I do not have the power myself to predict what changes will occur in 50 or 100
6 years. I am sorry.

7

8 Q Could you have an attempt at the more modest task of predicting what will
9 happen by a week on Thursday?

10 A That could be dramatic. I could take a teacup here now, I could put tea at the
11 bottom of the teacup at a uniform level, I could stir the teacup and in seconds the tea
12 would all pile up at the centre of the teacup. That appears from computer model
13 predictions undertaken by Malaysia and Singapore to have already occurred in the
14 headland in the lee of Tanjung Pengelih, and that has happened over a very short
15 period of time.

16

17 Q Can I pause there, because I think you have misunderstood the question.
18 I am not asking what may have happened already; I am asking, because this is
19 actually the task that is before the Tribunal, what you think, on the basis of the
20 evidence that you have seen, accepting that you have not seen the data, is likely to
21 happen between now and 9 October, so taking the situation now as the base and
22 9 October as the terminus.

23 A The amount of mud that will pile up on the shoreline south of Tanjung
24 Pengelih could increase quite significantly, even in a relatively short period of time.

25

26 **Re-examined by PROFESSOR CRAWFORD**

27

28 Q Is mathematical modelling of these sorts of situations a usual way of
29 addressing questions of impact?

30 A Yes. Every environmental impact assessment study that I have been involved
31 with in recent years involves the use of complex mathematical model tools, as we
32 are talking about here, to ascertain both the short-term and the long-term.

33

34 Q Since your initial consultancy with the Department of Irrigation and Drainage
35 and during the period of the preparation for these hearings, have you had access to
36 other Malaysian reports in relation to this situation?

37 A Yes.

38

39 Q The evidence you have given today is based on an assessment of the
40 material you have seen up to date?

41 A Yes.

42

43 **(The witness withdrew)**

44

45 **THE PRESIDENT:** We will adjourn for lunch.

46

47 **(Adjourned at 1.15 p.m.)**

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