
JAPAN-EAST ASIA DIALOGUE

“Cooperation in Environment and Energy ”

Conference Papers

June 9-10 2008 / International House of Japan
Tokyo, Japan

Supported by
The Tokyo Club

Co-sponsored by
The Global Forum of Japan (GFJ)
The Council on East Asian Community (CEAC)
The East Asian Institute, National University of Singapore

In Cooperation with
International Academic Society for Asian Community

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JAPAN-EAST ASIA DIALOGUE

日本・東アジア対話

Cooperation in Environment and Energy 「東アジアにおける環境・エネルギー協力の展望」

June 9-10, 2008 / 2008年6月9-10日
Tokyo, Japan / 東京

助成 / Supported by
東京倶楽部 / The Tokyo Club

Co-sponsored by / 共催
The Global Forum of Japan (GFJ) / グローバル・フォーラム
The Council on East Asian Community (CEAC) / 東アジア共同体評議会
The East Asian Institute, National University of Singapore / シンガポール国立大学東アジア研究所

In Cooperation with / 協力
International Academic Society for Asian Community / 国際アジア共同体学会

June 9, 2008 / 2008年6月9日

LAWRY'S THE PRIME RIB, Tokyo / ロウリーズ・プライムリブ東京

Welcome Dinner *Invitation Only / 開幕夕食会 *特別招待者のみ

18:00-20:00 Welcom Dinner hosted by OKAWARA Yoshio, Chairman, GFJ
大河原良雄グローバル・フォーラム代表世話人主催開幕夕食会

June 10, 2008 / 2008年6月10日

International House of Japan / 国際文化会館

Opening Remark / 開会挨拶

10:00-10:10 ITO Kenichi, President, GFJ / President, CEAC
伊藤 憲一 グローバル・フォーラム執行世話人 / 東アジア共同体評議会議長

Session I / 本会議 I

10:10-12:20 "The Current Situation and Challenge of East Asian Environmental and Energy Problems"
「東アジアにおける環境・エネルギー問題の現状と課題」

Co-chairpersons 共同議長	MURAKAMI Masayasu, Executive Governor, GFJ / Executive Vice President, CEAC 村上 正泰 グローバル・フォーラム常任世話人 / 東アジア共同体評議会常任副議長 Sitanon JESDAPIPAT, Associate Professor, Mae Fah Luang University (Thailand) シタノン・ジェダピパット メーファールアン大学准教授(タイ)
Keynote Speaker (15min.) 基調報告 (15分間)	HIRONO Ryokichi, Professor Emeritus, Seikei University 廣野 良吉 成蹊大学名誉教授
Keynote Speaker (15min.) 基調報告 (15分間)	Simon TAY, Chairman, Singapore Institute of International Affairs (Singapore) サイモン・テイ シンガポール国際問題研究所会長(シンガポール)
Lead Discussant A (5 min.) コメントA (5分間)	Danilo Cano ISRAEL, Senior Research Fellow, Philippine Institute for Development Studies (Philippines) ダニロ・カノ・イスラエル フィリピン開発研究所主任研究員(フィリピン)
Lead Discussant B (5 min.) コメントB (5分間)	GUO Yanjun, Assistant Researcher, East Asian Studies Center, China Foreign Affairs University (China) グオ・ヤンジュン 中国外交学院東アジア研究センター研究員補佐(中国)
Lead Discussant C (5 min.) コメントC (5分間)	YOSHIDA Tsuneaki, Professor, Graduate School of the University of Tokyo 吉田 恒昭 東京大学大学院新領域創成科学研究科教授
Lead Discussant D (5 min.) コメントD (5分間)	SEM Sundara, Director, Department of International Cooperation, Ministry of Environment (Cambodia) セム・スンダラ カンボジア環境省国際協力部部長(カンボジア)
Lead Discussant E (5 min.) コメントE (5分間)	San WIN, Joint Secretary/Director, National Commission for Environmental Affairs, Ministry of Forestry (Myanmar) サーン・ウイン ミャンマー林業省国家環境委員会書記官(ミャンマー)
Lead Discussant F (5 min.) コメントF (5分間)	KAMEYAMA Yasuko, Senior Researcher, National Institute for Environmental Studies 亀山 康子 国立環境研究所主任研究員
Lead Discussant G (5 min.) コメントG (5分間)	Poh-Ai Irene Teh CHEONG, Senior Lecturer, University Brunei Darussalam (Brunei) ポーアイ・アイリーン・ティ・チョン ブルネイ大学上級講師(ブルネイ)
Free Discussions (55min.) 自由討議 (55分間)	All Participants 出席者全員
Summarization by Co-chairpersons (10min.) 議長総括(10分間)	MURAKAMI Masayasu, Executive Governor, GFJ / Executive Vice President, CEAC 村上 正泰 グローバル・フォーラム常任世話人 / 東アジア共同体評議会常任副議長 Sitanon JESDAPIPAT, Associate Professor, Mae Fah Luang University (Thailand) シタノン・ジェダピパット メーファールアン大学准教授(タイ)
12:20-13:20	Lunch Break / 昼食休憩 (会議場外で各自でお取り下さい)

Session II / 本会議 II	
13:20-15:30	"Future Prospects for East Asian Environmental and Energy Cooperation" 「東アジアにおける環境・エネルギー協力の展望」
Co-chairpersons 共同議長	HIRABAYASHI Hiroshi, Councilor, The Japan Forum on International Relations 平林 博 日本国際フォーラム参与 John WONG, Research Director, The East Asian Institute, National University of Singapore (Singapore) ジョン・ウォン シンガポール大学東アジア研究所研究部長(シンガポール)
Keynote Speaker (15min.) 基調報告 (15分間)	Shaharuddin MOHAMAD ISMAIL, Principal Research Fellow, Institute for Environment and Development, Universiti Kebangsaan Malaysia (Malaysia) シャハルディン・モハマド・イスマイル マレーシア・ケバングサーン大学環境開発研究所主席研究員(マレーシア)
Keynote Speaker (15min.) 基調報告 (15分間)	ASUKA Jusen, Professor, Center for Northeast Asian Studies, Tohoku University 明日香 壽川 東北大学東北アジア研究センター教授
Lead Discussant A (5 min.) コメントA (5分間)	Nurul ISNAENI, Lecturer, University of Indonesia (Indonesia) ヌラル・イスナエニ インドネシア大学講師(インドネシア)
Lead Discussant B (5 min.) コメントB (5分間)	KANG Seonjou, Director General, International Economy and Trade Studies, Institute of Foreign Affairs and National Security (Korea) カン・ソンジュ 外交安保研究院国際経済・貿易研究所長(韓国)
Lead Discussant C (5 min.) コメントC (5分間)	MORI Hideyuki, Vice-President, Institute for Global Environmental Strategies 森 秀行 地球環境戦略研究機関副所長
Lead Discussant D (5 min.) コメントD (5分間)	Nguyen Minh NGOC, Research Fellow, Institute of Foreign Policy and Strategic Studies, Diplomatic Academy of Vietnam (Vietnam) ニャン・ミン・ゴック ベトナム外交アカデミー外交政策・戦略研究所研究員(ベトナム)
Lead Discussant E (5 min.) コメントE (5分間)	Malayvieng SAKONHNINHOM, Acting Director-General, Institute of Foreign Affairs (Laos) マライヴィエン・サコンニンホム ラオス国際問題研究所所長代理(ラオス)
Lead Discussant F (5 min.) コメントF (5分間)	HIRONO Ryokichi, Professor Emeritus, Seikei University 廣野 良吉 成蹊大学名誉教授
Lead Discussant G (5 min.) コメントG (5分間)	Raman LETCHUMANAN, Head of Environment and Disaster Management Unit, ASEAN Secretariat ラマン・レッチュマナン ASEAN事務局環境・災害管理ユニット長
Free Discussions (55min.) 自由討議 (55分間)	All Participants 出席者全員
Summarization by Co-chairpersons (10min.) 議長総括(10分間)	HIRABAYASHI Hiroshi, Councilor, The Japan Forum on International Relations 平林 博 日本国際フォーラム参与 John WONG, Research Director, The East Asian Institute, National University of Singapore (Singapore) ジョン・ウォン シンガポール大学東アジア研究所研究部長(シンガポール)
Closing Remarks / 閉幕挨拶	
15:30-15:40	SHINDO Eiichi, Professor Emeritus, Tsukuba University 進藤 栄一 筑波大学名誉教授

[Note] English-Japanese simultaneous interpretation provided / 日本語・英語同時通訳付き

Roundtable Dinner *Invitation Only / 懇談夕食会 * 特別招待者のみ	
18:00-20:00	Roundtable Dinner hosted by ITO Kenichi, President, GFJ/President, CEAC 伊藤憲一グローバル・フォーラム執行世話人/東アジア共同体評議会議長主催懇談夕食会

2. Biographies of the Panelists

[East Asian Panelists]

Sitanon JESDAPIPAT *Associate Professor, Mae Fah Luang University(Thailand)*

Received B.A. from Kasetsart University in 1977, M.A. from University of Pennsylvania in 1980 and Ph.D. from University of Illinois in 1984. Served in various positions including Natural Resources Management Program Director of Thailand Environment Institute (1996-1997), and Chairman of Thailand GEF Climate Change Subcommittee at the Ministry of Natural Resources and Environment (2006-2007). Concurrently serving as Acting Director of the Center for Natural Resources and Environmental Management.

Simon TAY *Chairman, Singapore Institute of International Affairs (Singapore)*

Received LL.B. Hons from National University of Singapore, LL.M. from Harvard University, and Fulbright Scholar at Harvard Law School (1993-1994). Served as Chairman of the National Environment Agency (2002-2008). Attended the 2002 World Summit on Sustainable Development, and the 2007 Climate Change Conference in Bali. Concurrently serves on the ASEAN Regional Forum register of Eminent Persons and Experts, and advisory boards for Asia Society and the Yale University Center for the Environment.

Danilo Cano ISRAEL *Senior Research Fellow, Philippine Institute for
Development Studies (Philippines)*

Received B.S. in Business from Mindanao State University in 1979, M.A. in Economics from University of the Philippines in 1982, Ph.D. in Applied Economics from Clemson University in 1990. Served as Project Scientist of World Fish Center in Cambodia, Head and Chief Science Research Specialist at Philippines Rice Research Institute, Staff Consultant of Asian Development Bank.

GUO Yanjun *Assistant Researcher, East Asian Studies Center,
China Foreign Affairs University (China)*

Received B.A. in English Education from Yantai Normal University in 2001, M.A. and Ph.D. in International Politics from Shandong University respectively in 2004 and in 2007. Held current position since 2007.

SEM Sundara *Director, Department of International Cooperation,
Ministry of Environment (Cambodia)*

Received B.A. of Law in 2000 and M.A. in Development Management in 2003 from Norton University. Entered the Ministry of Environment in 1993 and served as various positions including Deputy Director of Personal and Human Resource Development Department, Chief of Environmental Pollution Management and Technological Research Office, and the Deputy Director of Water and Soil Quality Management Office at Department of Environmental Pollution Control.

San WIN

*Joint Secretary/Director, National Commission for
Environmental Affairs, Ministry of Forestry (Myanmar)*

Received M.Sc. and Ph.D. in Forest Management from University of Tsukuba respectively in 1995 and in 1998. Served as Lecturer and Research Officer of Forest Research Institute, Forest Department, Ministry of Forestry (1999-2003), Deputy Project Manager of International Tropical Timber Organization (2003-2006), and Deputy Director of Planning and Statistics Department at Ministry of Forestry of Myanmar (2006).

Poh-Ai Irene Teh CHEONG

Senior Lecturer, University Brunei Darussalam (Brunei)

Received B Sc(Hons) from University of Surrey in UK, M.Sc Chemistry from Monash University in Australia and Ph.D. in Science and Environment Education from Curtin University in Australia. Acted as consultant in international EfSD/EE projects such as ASEAN Youth for Environmental Portal with the ASEAN Secretariat (2007-2008), Education Environment in Asia Pacific Project with the Institute for Global Environment Strategies, Japan in 2000. Works as senior lecturer, teacher and researcher in environment, and science education.

John WONG

*Research Director, The East Asian Institute,
National University of Singapore(Singapore)*

Received Ph.D. from University of London in 1966. Taught Economics at the University of Hong Kong (1966-1971) and National University of Singapore (1971-1990). Served as various positions including Fulbright Visiting Professor at Florida State University in 1979, the Chair of ASEAN Studies at the University of Toronto in 1996, Director of the Institute of East Asian Political Economy, Singapore (1990-96) and the Editorial board of many learned journals on Asian studies and economic development.

Shaharuddin MOHAMAD ISMAIL

*Principal Research Fellow, Institute for
Environment and Development, Universiti Kebangsaan Malaysia (Malaysia)*

Received B.A. from the Universiti Putra Malaysia, MSc. degree from the Australian National University in 1983. Entered the Forestry Department Peninsular Malaysia in 1977 and served in several positions including Deputy Director of State Forestry Department Headquarters, and Deputy Director General of Forestry in charge of Forest Operations. Participated in various ASEAN Forestry projects such as ASEAN Institute of Forest Management (AFIM) and ASEAN-US Watershed Project.

Nurul ISNAENI

Lecturer, University of Indonesia(Indonesia)

Received B.A. in International Relations from University of Indonesia in 1994 and M.A. in Foreign Affairs and Trade from Monash University, Australia in 2000. Served as Permanent Staff at the Center for Japanese Studies (1995-1999), Associate Researcher at the Center for International Relations Studies (2003-2005), Head of the Undergraduate Program of the Department of International Relations (2004-2008) at the University of Indonesia. Held current position since 1997.

KANG Seonjou *Director-General, International Economy and Trade Studies
Institute of Foreign Affairs and National Security (Korea)*

Received B.A. in International Relations from Seoul National University in 1987, M.A. in Political Science from Seoul University in 1992 and from Michigan State University in 1996, Ph.D. in Political Science from Michigan University in 2000. Served as Assistant Professor of Department of Political Science at University of North Texas (2001-2006).

Nguyen Minh NGOC *Research Fellow, Institute of Foreign Policy and Strategic
Studies, Diplomatic Academy of Vietnam (Vietnam)*

Received Certification in American Studies from National University of Singapore in 2003, and B.A. in International Relations from Institute for International Relations, Vietnam in 2007. Served as Facilitator and Teacher Assistant for the OECF British Council Summer Camp Program 2006, Liaison Officer for the US Delegation for APEC Senior Meeting 2006.

Malayvieng SAKONHNINHOM *Acting Director-General, Institute of Foreign Affairs (Laos)*

Received B.A. from Royal Institute of Law and Administration in Vientiane in 1976, and M.A. in International Law from Ukraine University in 1982. Entered Ministry of Foreign Affairs in 1982. Served as Deputy Chief of Division of Press Department, Deputy Director General of Treaties and Law's Department. Concurrently serving as Invited Professor in International Law at National Organization for Studies of Policy and Administration.

Raman LETCHUMANAN *Head of the Environment and Disaster Management Unit,
ASEAN Secretariat*

Received Ph.D. in Trade and Environment from the University of Tokyo. Also qualified professionally as a Chartered Management Accountant of the Chartered Institute of Management Accountants, United Kingdom. Served the Government of Malaysia since 1981 in various capabilities in the Ministry of Science, Technology and Environment, including Director of the Conservation and Environmental Management Division.

[Japanese Panelists]

OKAWARA Yoshio *Chairman, GFI*

Graduated from the University of Tokyo. Entered Ministry of Foreign Affairs in 1942. Served various positions including Director-General of the American Affairs Bureau, Deputy Vice Minister for Administration, Japanese Ambassador to Australia and Japanese Ambassador to the United States (1980-1985). Concurrently serving as President of Institute for International Policy Studies and President of America-Japan Society, Inc.

ITO Kenichi*President, GFJ/President, CEAC*

Graduated from Hitotsubashi University. Entered Ministry of Foreign Affairs in 1960. Studied at Harvard University (1961-1963). Served various positions, including Director of First Southeast Asian Division until 1977. Served as Professor at Aoyama Gakuin University (1984-2006). Concurrently serving as President of Japan Forum on International Relations (JFIR), and Professor Emeritus at Aoyama Gakuin University.

MURAKAMI Masayasu*Executive Governor, GFJ/ Executive Vice President CEAC*

Graduated from the University of Tokyo. Entered Ministry of Finance in 1997. Studied at Graduate School of International Relations and Pacific Studies at University of California, San Diego. Served various positions including Vice Consul of the Consulate-General of Japan in New York (2000-2002) and Deputy Director of Research Division of International Bureau at Ministry of Finance in 2003. Concurrently serving as Executive Director of JFIR.

HIRONO Ryokichi*Professor Emeritus, Seikei University*

Graduated from Morehouse College in 1954, and received M.A. in Economics from Chicago University in 1958. Served as Visiting Professor at National Graduate Institute for Policy Studies and Professor at Teikyo University. Concurrently serving as Director of the Japan Committee for UNICEF and Senior Program Advisor of United Nations University.

YOSHIDA Tsuneaki*Professor, Graduate School of the University of Tokyo*

Received B.A. in Engineering from Tohoku University in 1965, M.A in Economics from London School of Economics in 1978, and Ph.D. from the University of Tokyo in 1992. Served as Civil Engineer at Nippon Koei Consulting Engineers, Manager of Forestry and Natural Resources Division of Asian Development Bank, and Professor of Faculty of International Development at Takushoku University.

KAMEYAMA Yasuko*Senior Researcher, National Institute for Environmental Studies*

Graduated from the University of Tokyo in 1990, and received Ph.D. from Tokyo Institute of Technology in 1997. Served as Researcher at National Institute for Environmental Studies (NIES) since 1992. Also served as Visiting Researcher at the University of Maryland (1999-2000).

HIRABAYASHI Hiroshi*Councilor, The Japan Forum on International Relations*

Graduated from the University of Tokyo. Entered Ministry of Foreign Affairs in 1963. Served as Director-General of Economic Cooperation Bureau at the Ministry of Foreign Affairs in 1993, Director for Cabinet Councillors' Office on External Affairs in 1995, Ambassador to India, and Ambassador to France. Concurrently serving as President of Indo-Japanese Association.

ASUKA Jusen *Professor, Center for Northeast Asian Studies, Tohoku University*

Received M.A. in Agricultural Chemistry from the University of Tokyo in 1986, M.B.A from INSEAD in 1990, and Ph.D. from the University of Tokyo in 1996. Served as Researcher at Laboratory for Experimental Surgery in Switzerland (1987-1989), Project Manager for Management Planning Section of Pharmacia Bio-systems (1990-1992), Senior Researcher for Energy System Group of the Central Research Institute of Electric Power Industry (1996-1997).

MORI Hideyuki *Vice-President, Institute for Global Environmental Strategies*

Received B.A from Kyoto University, and entered Environment Agency of Japan in 1977. Served as various positions including Director of Office of Research and Information at Global Environment Issues Division of Environmental Agency of Japan in 1998 and Project Leader of the Long-term Perspective and Policy Integration Project at IGES (2003-2006).

SHINDO Eiichi *Professor Emeritus, University of Tsukuba*

Graduated from Kyoto University in 1963. Received M.A in Law in 1965 and Ph.D. in 1975. Served as Professor of the University of Tsukuba (1990-2003), Senior Research Fellow at Harvard University in 1987, at Wilson International Center for Scholars (1996-2000) and at Oxford University in 2000. Concurrently serving as Professor at Edogawa University, and Representative of International Academic Society for Asian Community.

(In order of Appearance)

3. Keynote Papers

*Session I : "The Current Situation and Challenge of
East Asian Environmental and Energy Problems"*

HIRONO Ryokichi
Professor Emeritus, Seikei University

IS ASIA'S RAPID ECONOMIC GROWTH SUSTAINABLE ?

Japan-East Asia Dialogue on Cooperation in
Energy and Environment
At
International House, Tokyo

Ryokichi Hirono
Professor Emeritus
Seikei University
10 June, 2008

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CONTENTS

1. Remarkable Economic Achievements in Asian Countries during the Past Few Decades
2. Emerging Threats to Sustainability
 - 1) Economic/Energy
 - 2) Social
 - 3) Environmental
3. Some Suggestions on National and Regional Policies to deal with these Threats to Sustainability

2

1. REMARKABLE ECONOMIC ACHIEVEMENTS IN ASIAN COUNTRIES

3

1A. Remarkable Economic Achievements, 1960-2009

	1960-70	70-80	80-90	90-00	2000-06	08	09
Dvlping	5.2	5.8	3.4	3.6	5.7		
EAP	6.2	7.2	8.0	7.2	8.6	6.4	5.6
China	3.7	5.5	9.5	10.3	9.8	11.2	10.8
Malaysia		8.4	5.1	7.0	5.1	5.8	5.5
SA	4.7	3.0	5.6	5.6	6.9	5.8	n.a.
India	4.6	2.7	5.4	6.0	7.4	8.5	8.4
Japan	8.9	6.8	4.1	1.3	1.6	1.6	1.8
USA	2.2	2.5	3.2	3.4	2.8	2.0	2.2
UK*	2.7	2.3	2.7	2.5	2.4	1.9	2.0
Germany*	6.6	2.2	2.2	1.5	0.9		
World	4.9	3.4	3.2	2.6	3.0	2.4	2.8

Sources: World Bank, WDR 1972, 1982, 1992, 2002 & 2008; UNCTAD, TDR 2007; PECC, State of the Region 2007-2008; OECD, Economic Outlook 82, 2008.

Note: Figures for U.K. and Germany n 2008 and 2009 are for the EU's average.

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1B. Country and Regional Shares of the World GDP

	1950	1960	1970	1980	1990	2000	2006
Dvlping	14.0	16.0	18.0	18.0	17.0	20.9	24.2
EAP	4.0	4.2	4.8	6.2	7.0	7.4	7.5
China	1.3	1.9	1.7	2.5	2.5	3.5	5.5
Malaysia	n.a.	0.09	0.06	0.2	0.2	0.3	0.3
SA	1.8	1.9	2.0	1.9	2.0	2.2	2.4
India	1.2	1.3	0.8	1.4	1.5	1.5	1.9
Japan	1.2	1.7	2.7	9.9	16.3	14.9	9.0
France	3.4	2.4	2.1	5.6	5.7	4.1	4.6
Germany	3.5	2.9	2.5	7.1	7.3	6.0	6.0
UK	3.6	2.9	1.7	4.5	4.8	4.5	4.9
USA	43.7	20.4	13.3	24.7	28.2	31.5	27.4
ROW	9.6	12.4	12.2	11.8	10.0	18.1	23.9
World *	1,100	2,472	7,328	10,674	19,328	30,971	48,245

Source: World Bank, *ibid*;

Note: * US Billion \$.

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1C. Benefits of Economic Growth, 1975-2005

	EAP		SA		SSA	
	1975	2005	1975	2005	1975	2005
Per Capita GDP(US\$)	224	2,119	214	800	205	845
GCF (%GDP)	n.a.	34.0	n.a.	28.0	n.a.	20.0
China,India & Sierra Leone ^{35.0*}	39.0	17.0*	33.0	14.0*	15.0	
Malaysia & Pakistan	24.0*	23.0	13.0*	17.0		
FER (% Imports)**						
China & India	1.24	1.60	1.02	1.30		
Malaysia & Taiwan	0.61	0.67	(1.39)	(1.23)		
Life Expectancy	60.5	70.4	50.1	63.2	45.8	49.1
Adult Literacy Rate	64.7	90.7	49.1	60.9	34.4	59.3
Access to DRWater+	72	79	72	85	48	56
Access to Internet++	ins.	106	0	29	ins.	26

Sources: World Bank, WDR 1972, 1977 & 2007; UNDP, HDR 2000 & 2007/08.

Notes: * for 1970; ** for 2005 & 2007; + for 1990 and 2004; ++ Per 1,000.

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2.

POSSIBLE THREATS TO SUSTAINABILITY IN ASIA

7

2.A Perceived Risks to Economic Growth in Asia

	Low	Moderate	Serious	Very Ser.
High energy prices	12 (12)	28 (24)	42 (38)	18 (22)
Water pollution & shortage	28 (17)	35 (27)	30 (37)	6 (15)
Global warming	35 (22)	29 (25)	26 (28)	10 (22)
Failure of the Doha Round	28 (22)	33 (35)	24 (25)	12 (13)
Protectionism	26 (24)	38 (31)	29 (34)	6 (8)
Terrorists	21 (27)	33 (31)	26 (26)	8 (11)
Sharp decline in asset markets	31 (22)	37 (39)	23 (24)	6 (8)
Natural disaster	34 (30)	34 (32)	24 (24)	5 (9)
Current account imbalance	30 (22)	38 (40)	21 (22)	6 (7)
Avian flu and other pandemics	33 (30)	32 (27)	17 (20)	6 (7)
Proliferation of preferential TAs	40 (22)	36 (39)	18 (20)	4 (5)

Source: PECC, State of the Region, 2007-08, Table 2, pp.45-46.

Notes: Respondents to the above survey taken in 2007 were: 107 businessmen, 68 government officials, 166 academics and researchers, 14 media persons, 5 civil society representatives and 22 others. Of these 382 respondents, 228 are from Asia. Figures are for the next 1-2 years, whereas those in brackets for 3-5 years or longer.

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2.1A Possible Threats to Economic Sustainability

- a) High Dependence on Export-led Industrialization,
- b) High Dependence on Extra-Regional Trade in the Age of Regional Free Trade and Cooperation regimes in North America and Europe,
- c) High Dependence on Short- and Medium-term Foreign Capital Inflow into the Region,
- d) High Dependence on Natural Resources and in Particular on Energy Resources.

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2.1B Risks of Economic Growth under Globalization, 1975-2005

	EAP		SA		SSA	
	1975	2005	1975	2005	1975	2005
Exports(% GDP)*	34	66	10	23	27	33
China, India & Sierra Leone	19	37	7	21	22	24
Malaysia & Pakistan	75	123	16	15		
Net FC inflows (%GDP)*	2.5	5.4	0.3	2.0	0.7	4.1
China, India & Sierra Leone	2.3	4.6	0.6	2.3	5.6	4.9
Malaysia & Pakistan	1.1	1.4	0.4	3.3		
Electricity cons. per capita (kwh)**	253	1,599	132	628	463	478
ASEAN Exports to:	1980	1990	2000	2006		
Asean	17.3	19.0	23.0	24.9		
Japan/China/ROK	31.5	24.0	21.0	22.8		
USA	16.3	19.4	19.0	14.1		
EU	12.5	15.6	14.5	12.9		
Others	21.9	22.0	22.6	25.3		

Sources: World Bank, UNDP, op.cit. and ASEAN-Japan Centre, ASEAN-Japan Statistical Pocketbook 2007.

Notes: * Figures are for 1990 and 2005; ** For 1980 and 2004.

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2.1C Foreign Dependence of Asian Countries, 2006

	A	B	C
Singapore	205.6	81	15.2
Malaysia	107.8	75	2.7
Vietnam	65.0	53	3.2
Thailand	63.3	77	2.2
Cambodia	52.4	97	5.3
Philippines	40.2	89	1.0
ROK	36.7	91	0.5
China	36.3	92	3.0
Indonesia	28.5	47	1.4
Japan	14.9	92	0.07
India	13.3	70	0.7
Dvlping	31.1	64	2.4
HICs	23.1	78	1.9

Source: UNDP, HDR 2007/8; World Bank, WDR2008

Notes: A - Export as % of GDP; B - Manufactured exports as % of merchandise exports; C - Foreign direct investment as % of GDP.

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2.1D Intra-Regional Trade as % of Total Exports, 1980-2006

	ASEAN		China		ROK		Japan	
	1980	2006	1980	2006	1980	2006	1980	2006
Brunei	12.7	26.1	n.a.	3.0	n.a.	13.3	70.9	31.2
Cambodia	76.2 *	6.7	n.a.	0.4	n.a.	0.1	7.1	1.0
Indonesia	12.6	20.0	n.a.	7.6	1.3	7.7	40.3	19.1
Laos	17.2	55.2	n.a.	4.1	ins.	0.2	23.0	1.0
Malaysia	22.7	26.1	1.7	7.2	2.0	3.6	22.8	8.9
Myanmar	27.3	54.7	1.2	5.3	0.2	1.5	9.9	5.2
Philippines	6.7	17.3	0.8	9.8	3.5	3.0	26.6	16.5
Singapore	23.0	30.8	1.6	9.7	1.5	3.2	8.1	5.5
Thailand	17.8	20.8	1.9	9.0	0.8	2.0	15.1	12.7
Vietnam	12.4	13.0	n.a.	5.7	2.6	2.0	26.0	12.3
China	6.6	7.4	-	-	n.a.	4.6	22.2	9.5
Japan	10.4	11.8	3.9	14.3	4.1	7.8	-	-
ROK	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.

Source: ASEAN-Japan Centre, ASEAN-Japan Statistical Pocketbook 2007.

Note: * Figures are for 1990.

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2.1E. Impact of U.S. Sub-Prime Mortgage Crisis on Asian Economies*

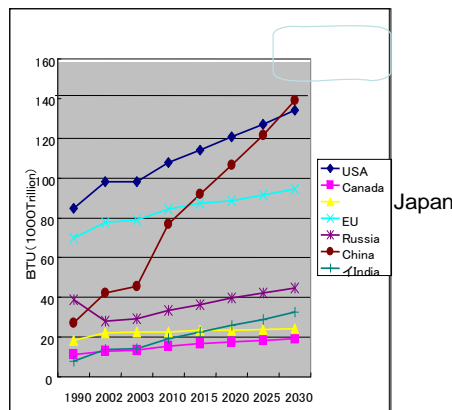
	2007		2008			2009	
	A	B	C	A	B	C	
Asian NIEs	5.5	4.9	2.7	1.7	5.0	3.8	2.1
Hong Kong	6.3	5.5	3.7	3.0	4.8	4.4	3.7
ROK	4.9	4.9	3.1	2.2	5.0	3.8	2.4
Singapore	7.7	6.4	2.0	0.3	5.2	4.5	2.3
Taiwan	5.7	4.0	1.4	0.3	4.9	3.1	0.4
ASEAN 4	6.0	5.6	4.2	3.2	5.3	4.8	4.0
Indonesia	6.3	6.2	4.9	4.2	5.5	5.2	4.9
Malaysia	6.3	5.4	3.4	1.7	5.2	4.2	3.3
Philippines	7.3	5.3	4.4	3.6	5.6	4.8	3.6
Thailand	4.8	4.8	3.5	2.5	5.0	4.4	3.3
China	11.4	10.1	8.3	7.4	8.7	8.5	7.9
India	8.7	8.7	7.9	7.3	9.1	8.4	7.4

Source: NRI, Nomura Fund 21, Table 5, p.7.

Note: * Annual average growth rate of GDP; A growth scenario, B mild recession scenario; and C deep recession scenario.

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2.1F Energy Consumption by Country, 1960-2030



出所: 米國三十九年一情報局(2007)並
基に IGES 作成

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2.1G World Primary Energy Supply by Source, 1973-2005

	1973	1990		2005	
	World(A)	A	Dvlping (B)	A	B
Primary energy sources*6,034	8,758	n.a.	11,434	n.a.	
Coal (%)	24.8	25.3	30.3	25.3	32.5
Oil	45.0	36.8	30.5	35.0	31.0
Natural gas	16.2	19.1	9.4	20.7	14.1
Nuclear	0.9	6.0	0.8	6.3	1.4
Hydro/solar/wind/geothermal	2.5	2.7	2.6	2.6	2.9
Bimass and waste	13.0**	10.3	26.3	10.0	18.0

Sources: UNDP, HDR 2007/8; IEA, World Energy Statistics 2004

Notes: * Million tons of oil equivalent.

** covers all the renewable sources of energy.

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2.1H Primary Energy Supply in Asia by Source, 2005

	A*	Coal	Oil	NG	HSWG	Bio	Nuclear
China	1,717.2	63.3	18.5	2.3	2.0	13.0	0.8
India	537.3	38.7	23.9	5.4	1.7	29.4	0.8
Japan	530.5	21.1	47.4	13.3	2.0	1.2	15.0
ROK	213.8	23.1	45.0	12.8	0.2	1.0	17.9
Indonesia	179.5	14.2	36.6	17.1	3.7	28.5	0.0
Australia	122.0	44.5	31.1	18.9	1.2	4.3	0.0
Thailand	100.0	11.2	45.5	25.9	0.5	16.5	0.0
Malaysia	61.3	9.6	43.3	41.8	0.8	4.5	0.0
Vietnam	51.3	15.8	24.4	9.6	3.6	46.7	0.0
Philippines	44.7	13.6	35.4	5.9	20.7	24.4	0.0
Singapore	30.1	n.a.	80.3	19.7	0.0	0.0	0.0
New Zealand	16.9	11.8	40.3	18.9	23.8	5.1	0.0
SA (%)	818.9	26.1	28.3	17.9	1.7	25.3	0.6
EAP,2020(%)	4,570.0	40	38	13	3.1	1.1	5.4

Sources: UNDP, HDR 2007/8 and JIEE, Energy Demand/Supply Forecast 2007.

Notes: * Primary energy supply in million tons of oil equivalent. HSWG stands for hydro/solar/wind and geothermal power, while Bio for biomass and waste

2.1I Energy Efficiency in Asian Countries, 1990-2004

	A	B	C	D	E
Philippines	5,137	677	68.8	7.9	-12.7
Japan	35,484	8,459	21.8	6.4	-1.4
India	3,452	618	77.6	5.5	37.1
Thailand	8,677	2,020	141.1	4.9	-14.0
Singapore	29,663	8,685	67.7	4.4	30.6
China	6,757	1,684	212.4	4.4	108.6
ROK	22,029	7,710	178.3	4.2	-6.3
Vietnam	3,071	560	324.4	4.2	26.5
Malaysia	10,882	3,196	129.6	4.1	-5.1
Indonesia	3,843	476	75.0	4.1	-0.1

Source: UNDP, HDR 2007/8

Notes: A – GDP per capita in 2005 (2005PPPUS\$); B – Electricity consumption per capita, 2004; C - % change in 1990-2004; D – GDP(2000PPP US\$) per kg of oil equivalent; E - % change in 1990-2004

2.2 Possible Threats to Social Sustainability

- a) Widening Income, Employment and Social Service Disparities between Urban and Rural Population, generating a sense of social dissatisfaction and, if worst, social unrest; and
- b) Social and Cultural Globalization accelerated by the Rapid Pace of Economic Globalization, generating a sense of frustration with the possible loss of traditional values and national identity, and, if worst, accentuating a sense of “narrow” or “anti-foreign” nationalism.

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2.2A Risks of Economic Growth under Globalization, 1975-2005

	EAP		SA		SSA	
	1975	2005	1975	2005	1975	2005
Poverty (below \$2/day)*	52.6	34.9	86.2	80.4	74.5	74.5
Gini Index+	40.3	46.9	37.8	36.8	62.9	62.9
Urbanization(%)	20.4	41.9	21.2	29.9	21.2	34.3
HIV/AIDS(%)	0.2	0.2	n.a.	0.7	9.0	5.8
Per Capita CO2 (tons)	1.1	3.5	0.8	1.3	0.7	1.0

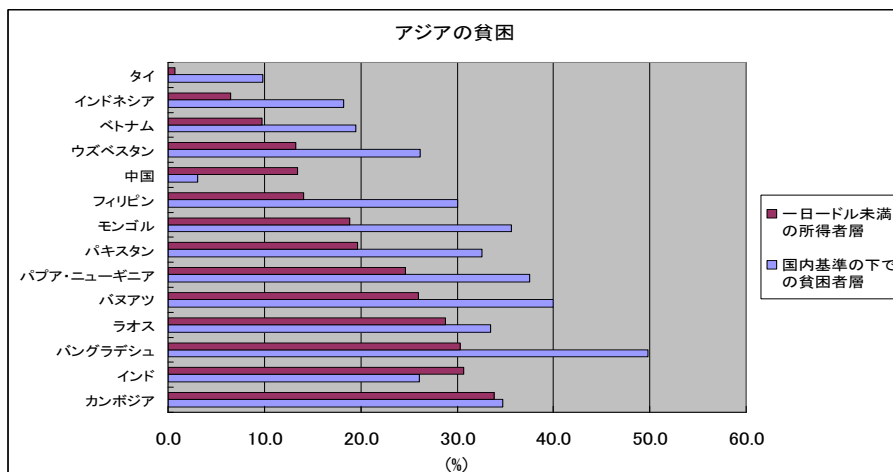
Source: World Bank and UNDP, op.cit.

Notes: * Figures are for 1983-2000 and 1990-2005, with China representing EAP, India SA and Sierra Leone SSA.

+ Figures are for 1998 and 2004 for China, 1997 and 2004-05 for India and 1989 for Sierra Leone.

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2.2B Poverty in Asia, 2005



Source; World Bank, WDR 2008.

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2.2C Confidence of Asian People in Governance Institutions, 2000

	Army	Police	Courts	Parliament	Party	Median
China	95	77	72	86	94	85
Taiwan	58	45	41	20	16	36
Thailand	76	55	60	54	47	58
Mongolia	67	48	47	61	42	53
Hong Kong	63	n.a.	69	52	22	52
Philippines	54	47	50	44	35	46
ROK	59	50	51	15	15	38
Japan	48	48	61	13	9	36
East Asia	65	53	56	43	35	50
Africa	53	45	47	42	46	47
LACs	26	29	20	16	11	21

Source: IDEA(2005), Ten Years of Supporting Democracy Worldwide, Table 5.1, pp. 63-64.

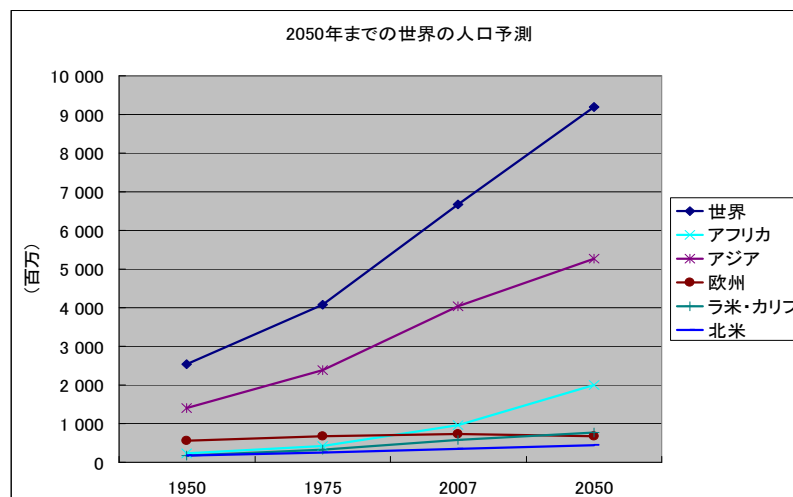
21

2.3 On-going and Possible Threats to Environmental Sustainability

- A Steady Population Increase and Growing Urbanization in most of the developing countries;
- Rapid Economic Growth, Export-led and Energy- and other Resources-intensive Industrialization, and Waste-intensive Lifestyles, contributing to Climate Change dramatically in recent decades;
- Under Globalization, a High Incidence of Poverty particularly in Rural Areas due to a Limited Access to Irrigated Water and Fertile Farmland and in Fishing Villages due to Reduction and Depletion of Fish Stock in the Nearby Sea; and
- Soil Degradation due to Repeated Intake of Chemical Fertilizers and Pesticides.

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2.3A Population Expansion, 1950-2050



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2.3Ba Risks of Economic Growth under Globalization, 1995 & 2025

	1995(A)		2025(B)			B/A	
Water consumption							
Household Use(Billion m3)	354		645			1.8	
Asia	160		343			2.1	
Industrial Use	714		1,105			1.5	
Asia	184		409			2.2	
Irrigation	2,504		3,162			1.3	
Asia	1,741		2,245			1.3	
Deforestation, 1990-2005	World	Dvlped	Dvlping	EAP	SA	SSA	LACs
1000 km2	-1,253	68	-1,382	-76	13	-550	-686
Change (%)	-0.2	0.1	-0.4	-0.1	0.1	-0.6	-0.5
CO2 Emission(Million mt.)							
1990	11,205	6,831	3,414	991	455		1,088
2004	13,319	12,303	6,682	1,955	663		1,423
% of World Total (%)							
1990	49.4	30.1	15.0	4.4	2.0		4.8
2004	46.0	42.5	23.1	6.7	2.3		4.9
CO2 Emission per GDP (kt. per million 2000PPPUS\$)							
1990	0.54	0.64	0.90	0.49	1.0		2.5
2004	11.5	2.4	3.5	1.3	0.57		0.36

Sources: MCLT, Water Resources of Japan, 2004 Edition; and UNDP, HDR 2007/08.

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2.3Bb Risks of Economic Growth under Globalization, 1995 & 2025

Hazardous wastes*	1993	2000	2010		
China	50,000	130,000	250,000		
India	39,000	82,000	156,000		
Indonesia	5,000	12,000	23,000		
Malaysia	377	400	1,750		
Desertification+ Overgrazing					
Asia	197.3	297.8	204.3	46.1	1.4
Africa	243.1	66.8	121.4	62.7	0.2
LACs	67.9	100.0	63.5	12.0	0.0
Europe	50.0	83.8	63.9	0.5	20.6
NA	37.9	17.9	90.5	11.5	0.4
Oceania	82.5	12.3	8.0	0.1	0.0
All	678.7	578.6	551.6	132.8	22.7

Sources: UNESCAP, State of the Environment in Asia and the Pacific, 2000; Secretariat of the Base Convention, The Country Facts Sheets; MOE, White Paper on Recycling Society 2005

Notes: * 1,000 tons; + Million hectares.

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2.3C Environmental Impact of Agricultural Production in Asia

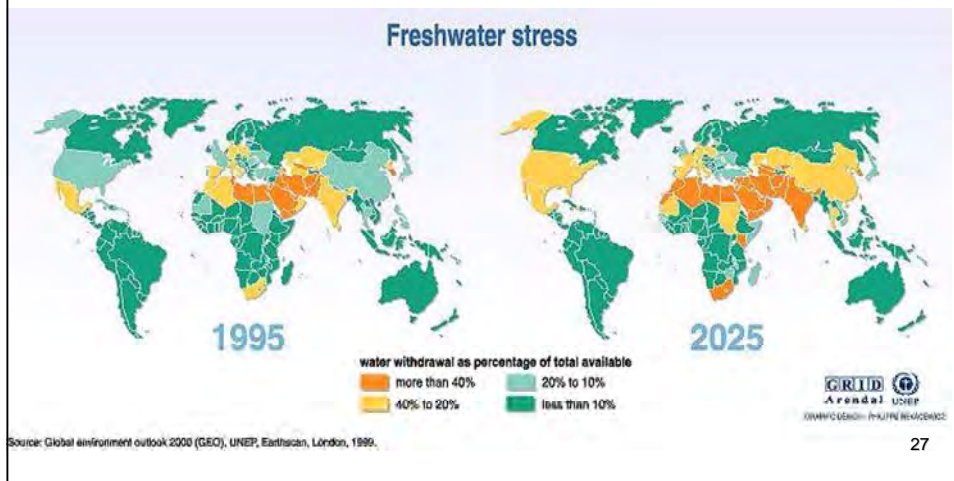
	A	B	C	D
Cambodia	1.3	98	7.0	3
China	-1.7	68	47.5	395
India	-0.4	86	32.7	107
Indonesia	1.6	91	12.7	62
Japan	0.0	62	54.7	364
ROK	0.1	48	47.1	389
Lao, PDR	0.5	50	17.2	n.a.
Malaysia	0.4	62	4.8	203
Philippines	2.2	74	14.5	84
Thailand	0.6	95	26.6	113
Vietnam	-2.5	68	33.9	245

Source: World Bank, WDR 2008.

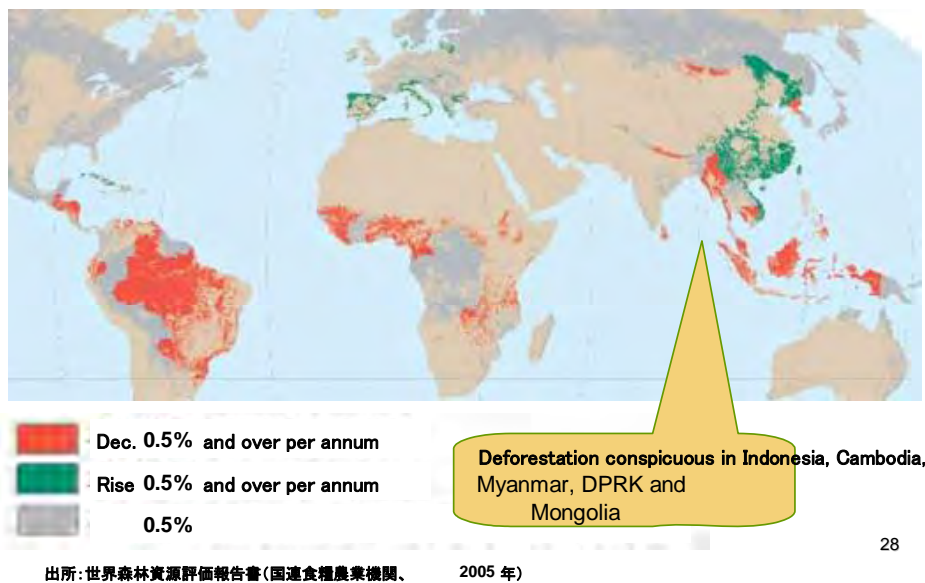
Notes: A – Average annual deforestation as % of total for 1990-2005; B – Annual freshwater withdrawals for agriculture as % of total in 2002; C – Irrigated land as % of arable land and permanent cropland, 2001-03; D – Fertilizer use as shown by kg of nutrients per hectare of arable and permanent cropland, 2003-05.

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2.3D Freshwater Stress, 1995-2025



2.3E Net Change in Forest (2000 ~ 2005)



2.3F. Impact of Climate Change, 21st Century, 2.4~6.4.C

- Increase in Drought, causing Shortage of Fresh Water and in particular Drinking Water,
 - Decline in Crop Production and Farm Productivity,
 - Increase in Forest Fire,
 - Increase in Human Casualties and Physical Damages due to Storms and Floods.
 - Ecological Changes due to Weakened Ocean Under-Currents,
 - Widespread Disappearance of Beaches and Coastal Swamps and Partial Loss of Small Island Developing Countries (SIDCs) under Rising Sea Level due to Melting Icebergs,
 - Higher Risks of Tropical and Infectious Diseases in Temperate Zones, and
 - Increase of Biodiversity Loss
- Source: IPCC, The 4th Report, 2007.

3.

NATIONAL and REGIONAL POLICIES TO DEAL WITH THE THREATS TO SUSTAINABILITY IN ASIA

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3.1 Mainstreaming Economic/Energy Sustainability in National Government Policies

- a) Ensuring Macro-economic Stability through Sound Monetary and Fiscal Policies;
- b) Poverty Reduction through Reorienting Investment into Agriculture and for Productivity Increase and Employment Expansion in Growth Sectors;
- c) Improving Resources and Energy Conservation and Efficiency and Increasing use of Renewable Energy through Domestic Deregulation and Scientific and Technological Innovations;
and
- d) Empowerment of People through Basic Education and Health for All.

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3.2 Mainstreaming Social Sustainability in National and Local Government Policies

- a) Achieving Social Stability through Equitable Distribution of Income and Wealth among People and between Urban and Rural Areas;
- b) Strengthening Government Capacity to Ensure Effective Implementation of Sustainable Development Policies at the National and Local Levels;
- c) Promoting Decentralization of Authority to Ensure Effective Participation of All Groups of Stakeholders in National and Local Decision-making Processes, with a view to installing **Government of the People, by the People and for the People;**
and
- d) Reinforcing Economic, Social and Political Environments under which Human Dignity and Human Rights are fully Respected and under which the Public has a Deep Confidence in their own Governance Institutions.

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3.3 Mainstreaming Environmental Sustainability in All Government Policies

- a) Mainstreaming Environmental Conservation & Protection including Climate Change Concerns in All Development Policies at the National, Local and Corporate Levels;
- b) Strengthening Government Capacity at National and Local Levels to Effectively Implement Environmentally Sustainable Development Policies and Legislation;
- c) Integrating Education for Sustainable Development (ESD) at all Levels of Formal and Informal Education including Community and Corporate Education, with a view to Enhancing Environmental Awareness and Capability among all Stakeholders; and
- d) Promoting Partnership with All Stakeholders and in particular Corporations in Research and Development of Environmentally Sustainable Technology and Enhancing the Professional Capacity of Environmental Experts with Inter-disciplinary Approach to Sustainability.

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3.3A Business Enterprises with ISO 14,000 Certificates, 1999-2005

	Japan	China	ROK	Indonesia	India
1999	2,773	85/50*	463	53	117
2002	8,169	1,085	880	n.a.	n.a.
2005	18,104	9,220	2,610	369	1,500

Source: Forum on Global Environment, Environmental Data 2000/2001 and 2005/2006. (<http://www.ecology.or.jp/isoworld>)

Note: * Mainland China/ Hong Kong.

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3.4A Perceived Impediments and Challenges Facing Regional Economic Cooperation in Asia

	A(%)	B(%)	Total(%)
Uncertain legal environments	36	25	61
Poor intellectual property rights protection	41	20	61
Poor corporate governance	39	20	59
Lack of physical infrastructure	37	18	55
Barriers to investment	34	13	47
Security and political concerns	29	17	46
Lack of mutual recognition of standards	34	12	46
Proliferation of bilateral PTAs	33	9	42
Restrictions on the movement of capital	32	9	41
Restrictions on the movement of labour	27	10	37

Source: PECC, op. cit., Table 5, p.49.

Note: A – Significant impediments; B – Very significant impediments.

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3.4B Top Five Policy Priorities for APEC Leaders to Discuss Now

	2006*	2007
WTO Doha Round		12%
Free Trade Area of the Asia-Pacific		11
Energy Security		9
Strengthening the APEC Organization		9
Climate Change		8

Source: PECC, *ibid.*, Table 9, p. 54.

Note: * Tariff reduction, Counter-terrorism. Investment in physical infrastructure, Preparing for disease pandemics, Reducing corruption and increasing transparency.

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3.5 Promoting Regional Cooperation for Enhancing Sustainability in Asia

a) Implementing the Cebu Declaration on East Asian Energy Security agreed at the Second EAS in January, 2007, the Joint Ministerial Statement of the First EAS Energy Ministers Meeting in August, 2007 and the Singapore Declaration on Climate Change, Energy and Environment at the Third EAS in November, 2007,

- Commitment to common goal of stabilizing atmospheric GHGs by emphasizing both mitigation (halving the global GHG emission by 2050) and adaptation;
- Participation in the post-Kyoto (2013~) consensus-building process for decision at COP15 in Denmark in 2009 on the basis of the Principle of Common but Differentiated Responsibilities and Capabilities);
- Setting in 2009 national energy efficiency target, based on

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the Cebu Declaration, of improving 20 % above the current level by 2020;

- Implementing the collective goal of reforestation of 15 million hectares by 2020;
- b) Promoting further cooperation in Economic, Energy, Environment, Social and National Security areas to:
- i) Turn Asian economic growth sound and sustainable,
 - through Chiang Mai Initiative, and
 - multilateralizing the bilateral Economic Partnership Agreements with ASEAN countries;
 - ii) Promote energy conservation, efficiency and security,
 - through the formulation of an East Asian Common Energy Policy covering all aspect of energy exploration, development, consumption, conservation, efficiency and security including energy pricing policies reflecting the environmental cost;
 - implementing Kuala Lumpur Declaration that recommend among others further action on existing energy conservation efforts such as energy audits and inspections, minimum energy

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consumption efficiency standards for common household electric and electronic appliances, public education on energy conservation and efficiency, energy-efficiency labelling programmes, joint development and transfer of energy conservation technology and know-how;

- through joint Investigation into the possibility of establishing Asian Strategic Stockpiling Scheme for Oil for emergency;
- organizing a unified regional market for oil and natural gas;
- through joint exploration for oil and natural gas reserves in the seabed both inside and outside the region; and
- through the extension of the Trans ASEAN Gas Pipeline and the ASEAN Power Grid to all member countries;

iii) arrest environmental degradation, e.g.,

- Southeast Asian Disaster Relief Centre to provide humanitarian assistance and handle environmental disasters;
- regional agreements to address trans-boundary environment problems of air, river and marine pollution;

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- joint academic research for environmental protection,
- promoting UNU-led RCEs for reinforcing ESD,
- China-Japan Environmental Protection Centre as one of the effective platforms for promoting environmental protection in the region;

● Japan-led Asian Partnership Programme for Environmental Experts Development; and

- through effective implementation of the Bali Action Plan;

iv) Stabilizing climate change through GHG emission mitigation and adaptation measures,

- given the scarcity and rising prices of fossil fuel and other natural resources, the mitigation of GHG emission through improving energy efficiency and the promotion of clean renewable energy sources should be given a top priority in formulating regional cooperation in climate change ;

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● given the adverse impact of climate change on the sea level and other ecological conditions and their consequences on the habitat particularly of the poor in the region, mainstreaming adaptation measures into national and regional development plans should also be given a top priority not only by way of removing institutional, informational and participation barriers in each country but establishing a regional adaptation fund collected by levy on carbon-intensive products and services;

● utmost efforts be made by all stakeholders to maximize co-developmental benefits of climate policies. Exploiting the potentials of the Clean Development Mechanisms (CDM) and enhancing the efficiency of its approval process are crucial as well as sound material recycling;

● to facilitate mitigation, quantitative targets of carbon intensity at the regional level could be introduced based on a thorough analysis of the past trend and future projections of GHG emission;

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- The scope of CDM may be expanded for regional projects under non-UNFCCC regime, if accompanied by significant technology components and effective enforcement mechanism for reducing GHG emission;
 - Japan-initiated sectoral approach for climate change mitigation, if carefully designed and managed transparently by specifically assigned independent body, can be an effective means with equity to all participants to achieve either nationally, regionally or globally agreed quantitative targets for GHG emission reduction;
 - Joint R&D efforts by both exporters and importers of environmentally friendly technologies would facilitate technology transfer, if coupled with a flexible IPR regime providing green subsidies or preferential tax treatment.
- v) promote education, health and people movement, e.g., APT ministerial consensus; and vi) enhance mutual trust and confidence building among people, e.g., ARF statements.

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THANK YOU FOR YOUR KIND ATTENTION !

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Energy Security: Cooperation, Efficiency and the Environment

Introduction: An Interlocking Triangle of Issues

The world is facing a crisis energy that combines spiralling demand, insecurity of supply, and peak prices. This has bred a sense of insecurity that seeks reassurances for reliable, and reasonably priced sources of energy. With demand increasing, a major challenge for developing countries is to satisfy the increasing energy demand in a way that will not absorb excessive amounts of investment, which would 'divert funds from other worthy development goals'.¹ Yet the key aspects in energy security are not only about price and assured supply.

Energy security must be understood today to be fundamentally connected to two additional issues: economic growth and climate change. Energy security, climate change and economic growth are today three corners of a single triangle of issues. To seek to solely address any one corner of the triangle will be detrimental to one or both of the other two. These three factors influence each other, both directly and indirectly, and both immediately but also and especially for the medium to long term future.

Without sufficient supplies of energy, economic growth cannot be sustained within the existing paradigms of development and industrialization, as seen in the history of the developed world. Yet the supply of energy from traditional sources and economic growth and development within these historical paradigms can undermine the environmental foundations of society and economy. Such environmental impacts of energy include local and national scale effect, such as groundwater and air contamination, ecosystem destruction, and even more global scale impacts on climate change and greenhouse gas emissions which will have long-term implications for the very basis of society, progress and security.²

While the issues of energy security, economic growth and environment/ climate change are global and not confined to Asia, there is particular relevance to our region. Asians will face particular challenges from this triangle of issues. The region is growing rapidly. With so many people in the region, and so many still below the poverty line, this economic growth (with equity) is not an option but a necessity. Energy is needed. The surge in world energy needs is being driven by Asia, and especially the growing giants of China and India, but also the still growing needs of the developed Asian states especially Japan and South Korea.³ This thirst for energy will not dissipate, if historical patterns are any indication of the future. Yet the energy to drive that economic growth is not assured. Insecurities for energy are felt in Asia, with all the major economies being dependent on imported sources of energy, and especially oil imports from the Middle East (to a larger degree than, say, the USA).

The International Energy Agency (IEA) predicted that through the year 2010, global energy use will rise 2.1 per cent annually, with East Asian countries' energy use growing more than 4 per cent.⁴ Most of Asia, moreover, is short of the traditional energy resources of oil and gas and heavily and increasingly reliant on imports from outside the region, and often from states that may face instability. Some Asian countries like India and China have considerable resources of coal, but these are of particular concern for their impact on climate change and the environment. As such, Asia's growth and insecurity in energy may well drive global trends and prices for oil and gas, and might augur ill for efforts to address climate change.

For China and India, one option to ease this import reliance is to turn to domestic sources of coal. Yet, while this meets energy needs, generating energy from coal will be highly pollutive at the local level, and much more carbon intensive at the global level and thus hasten climate change. What happens in Asia will affect the future of climate change profoundly.

How can and should states address questions of energy security within this triangle of issues?

This paper will examine climate change and security for Asia in this context. It argues, in this introduction, that the context for understanding and responding to climate change must be within the interlocking triangle of issue relating to energy-environment-economy. Secondly, I warn against some of the immediate dangers and missteps that can arise from the sense of insecurity. As Asian states start to better recognize the challenges, there will be a rush to purported solutions, some of which may, I suggest, actually exacerbate the problems – like increasing competition and conflict for oil and gas, and some dangers from the pursuit of nuclear energy and some types of biofuels. It also outlines some policy approaches that consider cooperation instead of competition between states; energy efficiency in managing demand, rather than increasing supply of energy; and give equal priority to environmental protection and the avoidance of climate change impacts.

Lastly, I examine that agenda in ASEAN and Asia, which has received only limited attention to date. Most of Asia – as most are developing economies – have sought to avoid deeper engagement and any obligations under a climate change regime, and I suggest that this will need to change in the future for both their benefit and to effectively respond to climate change. In so doing, it seeks to point out missteps that some states can and may be taking in their anxiety over energy security, that may – in the medium to longer term – create more and more substantial insecurities for their continued growth and survival.

Cooperation versus Competition for Energy

Vulnerability and insecurities drive attention, urgency and action and promise additional resources. This is often the underlining desire of those who propose that an issue be “securitized”. Yet insecurity can drive us to act imprudently and in the wrong directions. So, as our recognition of insecurity over climate change and energy is growing, we must avoid several policy mistakes that would seem to enhance security, and yet may in reality undermine security further.

There are signs that 'energy nationalism' is rising in Asia and becoming the predominant mentality in addressing the issue. There is ostensible cooperation amongst the states to put regional energy supplies under control in terms of a closer integration between energy and strategic relations.⁵ In spite of institutional attempt by the Asia-Pacific Economic Cooperation (APEC) forum to regulate emergency oil stockpiling in the area, and by the Three-Party Committee, including China, Japan and South Korea that came up with official discussions, "energy nationalism" or "resource nationalism" seems to be ascendant and to undercut cooperation in reality.⁶

Nationalist concerns over securing energy resources are quite understandable. The vast majority of countries in Asia faces growing energy demand and lacks the resources within their own borders to meet that demand. This is especially the case with China and India. They have nearly 37 per cent of the world's population and these are mostly rural and poor. The two countries are undergoing economic reform and the pattern of large coal usage for electricity generation will likely to take place in the next few decades; these states will continue to create transnational and international environmental problems in future.⁷

In particular, rising competition for traditional energy resources of oil and gas is one of the important challenges we face. With the growing demand for energy, and the increased uncertainties and insecurities of supply, there is a notable rise in global competition for access to and supply of oil and has, on preferential terms in either price and/ or assurance of future supply.

There are many analysts and strategists, especially in China and Japan, who view oil and gas as strategic goods, and view energy competition as a zero-sum game that states must play for high stakes. China has led the way in increasing its hold in the oil markets, with Japan, and India following closely.

Part of the rising competition is commercially based, in the acquisition of companies, or preferred contracts. Another part of the competition is directly about territory and exploration for oil. For example, China since 2005 has completed at least one new drilling platform in the East China Sea. It is thought to be tapping into hotly contested natural gas and oil fields, escalating a dispute with Japan over the rights to billions of dollars worth of underwater energy reserves.

Both China and Japan, with South Korea and India, also are competing to court Russia in the hopes of securing an advantageous route for a new trans-Siberian pipeline to the Pacific. Similarly, the competition for influence between China and Japan in Southeast Asia is related not only to the broad questions of political influence but to questions about energy.

National competition over oil and gas is of course not new. They have often colored geo-politics in the past and, to some of his critics, driven the Middle East and Iraqi policies of US President Bush. But what is notable about the competition in Asia and especially between China and Japan over oil and gas is that this builds on a flawed foundation of history and territorial claims, to create what we may term, "resource nationalism". Given this, oil exploration in disputed territories such as in the

East China Sea has drawn attention and can potentially serve as flash points for heightened nationalism and conflict.

The above said is not intended to blame China or any other state for the competition and possible points of tension and conflict. Rather, it is to point to a conundrum in this competitive, zero sum approach to energy security: one state's efforts to secure itself may unintentionally bring competition and conflict with one or more other states, and therefore substitute energy insecurity with other types of insecurity.

Dealing with energy-associated environmental and social issues will need more active cooperation between industrialized countries and developing countries; developing countries do not have strong voice in global environmental issues. Thus, more effort should be voluntarily made by industrialize countries to share and cooperate for more positive prospects (Munasinghe,1996)

Intra-Asian cooperation must also be given priority, despite the tensions and rivalries. In this respect, ASEAN can and should play a leading role. ASEAN should first go ahead with its own intra-ASEAN energy grid and demonstrate the benefits of cross-border cooperation. Many proposals have been suggested in recent years to enhance regional cooperation, often involving joint investments outside the region or joint development of infrastructure such as pipelines, ports, and processing facilities.⁸ As the intra-ASEAN cooperation on energy comes to be realized, the principles and examples of cooperation can be shared with Northeast Asia. Involving ASEAN in this way may help soften some of the tensions and rivalries among the states there.

The False Dawn of Biofuels

In the nexus of concerns with climate change and energy, an issue that has come to prominence is that of biofuels. The term biofuels is broad, to include everything from re-using cooking oils to the variety of food- and plant-derived supplements or substitutes for vehicles. Many of these were too costly until the recent rise in oil prices and the growing concern with carbon based fuels and climate change created the potential for a premium to be paid for substitute energy sources.

Among biofuels, one possibility that has received considerable attention in Southeast Asia is that of palm oil. On paper, the prospects of palm oil are considerable, as the crop has a high caloric value. However, concerns can and should arise in the context of both economics and climate change.

On the economics of the issue, there are subsidies in Indonesia and Malaysia, where 85 percent of commercial palm oil is grown, for agriculture and palm oil, and these subsidies make the crop cheaper than it might otherwise be. The use of palm oil or other foods for fuel is also questioned increasingly as food prices begin to rise.

On questions of the environment, green groups have long warned that many plantations in Indonesia and Malaysia are planted on cleared rain forest. This clearance of forests threatens the habitats of endangered animals like the orangutan and the Sumatran tiger. Moreover, these forests

and lands are often cleared with the use of fires, which releases carbon dioxide into the atmosphere. According to some calculations, the emissions are so great that, if these gases are included, Indonesia jumps into the top three climate change gas emitters in the world. A report late last year by a Netherlands-based research group claimed some plantations produce far more carbon dioxide than they save. Seeded on drained peat swamps, they unleash a warehouse of carbon from decomposed plants and animals that had been locked in the bogs for hundreds of million years, which one biologist described as "buried sunshine."

Now, amid global efforts to curb emissions of greenhouse gases, power companies have joined conservationists in calculating the carbon count of producing palm oil fuel -- and found the balance increasingly negative. A few companies have put plans on hold to switch to palm oil.

There are efforts within the industry to provide reassurance that the palm oil can avoid these problems to be an environmentally responsible product. The Roundtable on Sustainable Palm Oil has developed a code of conduct in these past years and is soon moving towards certification to verify that the products and companies that are certified are not involved in the environmentally harmful practices mentioned above. Problems and issues however remain with certification.

As such, because of the regional environmental disaster of the haze and the global impact on climate change, the concerns with energy security and climate change should not lead to a rush towards palm oil. Yet there continues to be a glow of biofuels as a promise to provide new fuels to increase security, and to be "greener" than oil and gas. In this glow, companies in both Indonesia and Malaysia continue with considerable plans for expansion.

The issue of palm oil also connects to the haze. This issue is predominately framed in terms of pollution that affects the local communities in Indonesian provinces and the region, impacting air quality and public health. The primary mechanism for addressing the fires has been between the Environmental ministers of ASEAN, with a sub-group of the affected countries. While this is valid, looking at climate change brings in an additional dimension. The fires contribute to the climate change gases. Some estimates suggest that, if the impact of fires is included, Indonesia rises to be among the world's largest emitter of climate change gases. This makes the haze a truly global issue, which deserves international attention.

Nuclear Energy in Southeast Asia

Many more countries in Asia are looking the option of nuclear power. In Southeast Asia, Indonesia, Vietnam, Thailand and, most recently, Myanmar have declared plans to develop nuclear power plants. A number of these will likely involve and depend upon the involvement of other Asian states that have the technology and are willing to help fund the nuclear plants – South Korea and Japan – and those that are willing to supply the raw materials – Australia.

The economics of nuclear power seem favourable in the short term. Nuclear plants are calculated to currently generate power at US1.5 cents per kilowatt-hour (2.3 Singapore cents). This is less than half than the cheaper fossil fuels like coal and natural gas. There are considerable (some say incalculable) costs in terms of the safe, long term storage of waste and in the potential damage that would arise from improper storage of waste, or a nuclear incident.

While several countries are also interested, Indonesia is perhaps at the forefront of this trend, having revived its long held plans for a nuclear power plant. What is happening in Indonesia may therefore be a precursor for others.

The country plans a US\$8 billion (S\$12.2 billion) investment to construct four 1000-megawatt plants by 2016 or 2017, with candidate sites on the Muria peninsula in the Gorontalo province. This plan has recently received the helping hand of Russia, South Korea and Australia and even an endorsement by the International Atomic Energy Agency, where Indonesia has consciously developed a good standing. A study conducted few years ago showed that the first power plant could be in operation by 2004 with a second due in 2019, at which time nuclear power generation would account for approximately 10 per cent of the country's total electric supply.⁹

Environmentalists both in Indonesia and globally however remain unconvinced that Indonesia is prepared for nuclear power. There are concerns over possible natural disasters, given the seismic activity in Java and other parts of the country. More, there are issues of cost and waste disposal, and manmade disasters. Parts of Indonesia's main island, Java, is still affected by 'lava flows' that are thought to have been caused, at least in part, by nearby drilling that did not take enough precautions. Mistakes with nuclear plants have been made, after all, by the former Soviet Union, Japan and the USA and safety concerns for plants in developing countries must be as real, if not more so.

In Indonesia and many parts of the region, there is another factor that intersects the environment and energy with security concerns. This is that these nuclear plants would be prime targets for terrorist attacks. There seems to be little realistic danger of nuclear weaponization. But there can be concerns that the misuse of uranium enrichment and spent waste from the plants can lead to radiological devices known as 'dirty bombs'.

In this context, what Indonesia and also Australia do will be a litmus test. Australia faces a watershed moment with plans to link uranium development and exports with its own nuclear development plans. These look set to feature in Australia's coming national elections. Australia's policies can heat or cool Indonesian and the region's nuclear ambitions – the Aussie-RI Lombok Agreement two months ago and exports of Aussie uranium to China worth A\$1 billion (S\$1.2 billion) in the coming months being cases in point.

Despite the concerns with climate change and energy, the options for nuclear power should not be rushed. More should be done to consider how policies for security, energy and environment should best intersect. More efforts to manage risk are needed, and some are already being started. These

include the decision to establish a new study panel for cooperation in nuclear energy in Asia at the Seventh Ministerial Meeting Forum for Nuclear Cooperation in Asia some months ago and an inaugural regional seminar hosted by Japan and the IAEA to discuss measures against nuclear terrorism in Asia. ‘

ASEAN itself has a strong record against nuclear weapons, in the Southeast Asia Nuclear-Weapon Free Zone, which also outlines a regime to help ensure high safety and security measures for nuclear energy. This treaty has been anchored by the accession of China in October 30 last year. Such efforts favour regional dialogue and cooperation, with increased public awareness, rather unilateral and hush-hush maneuvers to hasten down the nuclear path.

This is especially as Indonesia has only begun to acknowledge these concerns in the region. At an APEC energy ministers’ meeting last month, it has promised to begin to provide transparency on its nuclear plans to regional states. This is a welcome, even if belated, recognition of its obligation to consult with other states. Looking ahead, we can hope for Indonesia and the region to develop a protocol to SEANWFZ, now in its 10th year, to deal specifically with nuclear safety and to give greater assurance on the security issues before Indonesia or other states proceed to build their nuclear plants. This would help ensure that if and when states proceed with nuclear energy, the highest possible standards of safety in design and practice are observed.

However, some in Indonesia have raised other issues that, in many ways, precede the question of nuclear energy. Indonesians environmentalists and energy experts question whether there is, in the first place, a clear need for nuclear energy. They instead suggest that more work on energy efficiency and on alternative, clean energy is much needed. For larger countries like Indonesia and Vietnam too, the issue often is also the efficiency and cost of distribution and the energy grid, and not simply its generation, and to explore more opportunities to develop energy resources. Such efforts, which the next section will explore, can potentially balance energy needs with security and environmental concerns. They argue that other efforts like nuclear power can otherwise worsen environments both regionally and globally and even inadvertently worsen insecurities of another, more traditional kind. A greener path to energy security needs to be explored, rather than rushing towards nuclear power.

Japan can have a special role to play in the region and Indonesia’s emerging plans to proceed with nuclear energy. As a leading and pacific country in nuclear energy, Japan can help re-look at the plans to ensure that the paths forward are in the first place necessary and, if so, are explored with the maximum assurances for both public safety and non proliferation. Japanese companies that may wish to play a role in developing nuclear energy in Indonesia and other ASEAN member states should in this regard be expected to observe the highest possible standards in transparency, anti-corruption and safety. Japan, as the world’s most energy efficient economy, can also help ensure that, in the first place, Indonesia and other energy insecure countries take steps to maximize the energy and benefits from the resources that are available, before turning to a nuclear option.

Energy Efficiency and Managing Demand

To increase and secure supplies of oil and gas whilst reducing carbon emissions and controlling, we should highlight energy efficiency; to do more with less energy and therefore leave a lighter carbon footprint.

Energy efficiency can bring immediate results. In comparison, many efforts to develop alternative energy will likely need investment and further innovation into the middle term (see below). The use of modern electricity generation with high technical efficiencies like combined-cycle power stations, for instance, requires high investment and technical expertise; this leaves financially challenged developing nations an unrealistic solution to the problems.¹⁰

Studies suggest that energy efficiency can provide on average, a 30% improvement. This is a sizeable benefit in terms of both improving a state's energy security and limiting its impact on climate change. Other studies suggest that the benefits of energy efficiency can be even greater if we re-imagine industrial and other processes and architectures. Some American expert institutions like the Rocky Mountain Institute, suggest that there can be four-fold or even ten-fold benefits.

Looking at energy efficiency in this way, we can untie the relationship of energy and economic growth, or at least ameliorate the ratio. Notable gains in energy efficiency can also be sought by conservation on the demand side.¹¹ End-use technologies can be applied to achieve more efficient air conditioning, lightening and refrigerating.¹² There are countries in the region, especially Japan, that have shown how greater economic growth can be achieved with proportionally less energy. Previous decade's research indicates that Japan's end-use efficiency which influences the energy consumption culture in the region is remarkable; despite the 84 per cent energy imports, Japan has succeeded in producing two and a quarter times the real output as 15 years prior to the research.¹³ The relation between energy demand and economic growth is strong in the ASEAN countries regardless of the variations in different periods of time; the uncertainty regarding the future energy demand in ASEAN is greater than that in many world regions.¹⁴

In promoting energy efficiency, governments need to recognize that the keys for energy efficiency are not merely better technology and engineering. Pricing is a key. Dramatic expansion of energy use is due to 'subsequent reduction of the cost of energy, expanding areas of energy utilization', the population growth and industry expansion.¹⁵ Increasing (or decreasing) energy prices therefore can reduce (or raise) energy demand for a given level of economic activity.¹⁶ Too many countries still underprice energy and other resources. This is detrimental to efforts and capital costs to promote efficiency. Higher energy prices would give rise to technological changes improve the efficiency in energy usage bringing about higher standards for a given consumption of energy; it would also result in alternative products of 'patterns of demand' that reduce the growth rate of energy consumption.¹⁷ Energy prices will need to be raised to reflect their full, long term costs, including pollution and carbon footprint. This can be done progressively to avoid sudden and adverse effects on the economy, but they must be done.

To make policies that improve the relationship between supply and demand, the joint ventures with energy producers must be initiated, transportation bottlenecks should be reduced, energy consumption through should be limited through conservation measures, and the efficiency of energy markets should be improved.¹⁸

Efficiency is not only important to consider in the use of energy; it is also important in terms of the generation and transmission of energy. Multi cycle energy plants that capture and re-use “waste” energy are an important investment to make; this is especially as energy plants are usually long term, big-ticket items that (once decided) remain with us for some 20 years. There is also a lot of wastage in transmission, especially in larger countries like Vietnam and Indonesia. In many ways, for provinces, towns and villages in such countries, true energy security would be better met by dispersed energy generation that is closer to them, rather than long, insecure and wasteful transmission.

If these steps are taken, much more can be done with the energy resources that already exist and are available. This would improve energy security and lessen the impact on climate change, with real changes that are, in many ways, realistic and readily available.

Japan, as already noted, is the most energy efficient country in the world, as measured in terms of its GDP: energy use ratio. As a major partner, donor and investor in the ASEAN economies, there is much that Japan can do to foster energy efficiency in the region. This is both in terms of the Japanese government as well as its private sector companies. The drive for energy efficiencies moreover, should not cover only manufacturing and industry, but also the development and design of infrastructure.

Investment and Innovation

But while much more can be done with the energy we have, efforts must also be made to find new resources and also alternative sources of energy. In terms of new resources, part of the sense of insecurity in some countries reflects not their actual vulnerabilities but a lack of recognition of their potential riches. We can see this in the case of Indonesia.

While it exports oil and natural gas, the country’s production of oil is falling and proven reserves are dwindling. Oil production has fallen from a high of 1.4 million barrels per day in 2000 to less than 900,000 barrels per day in mid-2006. This is the lowest level in 35 years. Since 2003, while Indonesia is Asia’s only member of the Organization of Petroleum Exporting Countries (OPEC), it has become a net importer of oil and is unable to fill its quota of 1.45 million barrels per day that it.¹⁹ An increasing reliance on oil imports means that the government has spent heavily on subsidies to keep prices below the market rate.²⁰ Because of this, Indonesia currently may feel an energy insecurity.

Yet such an apprehension about energy fails to take into account the potential riches that remain in Indonesia. In the past ten to 15 years, there has been a recurring under investment in exploration in Indonesia. This is partly due to weaknesses in the state monopoly, Pertamina, and to the reluctance

(indeed refusal) to open up sectors to the oil and energy giants to explore and/ or exploit. An opening of the market, coupled with the higher prices for oil and gas, can dynamically transform the present scene. What may have been neglected or found not to be economically viable may be discovered and found profitable as the parameters of technology and price change.

If this is truest of Indonesia, there are also similar possibilities in other countries, including Vietnam, Myanmar, Malaysia and others. There are also possibilities for cross-border cooperation. This should be for the joint exploration and exploitation of energy sources in territories under dispute. The development of cross-border and potentially intra-ASEAN energy grids also deserve attention.

The above possibilities in the traditional energy sector also sketch the possibilities for alternative energies. There is potential in different forms of alternative energy – solar, biofuels, biomass and “waste-to-energy”, wind, geo-thermal, and tidal. An evaluation of these different possibilities is beyond the limits of this paper, and indeed they are often speculative or even skewed by economic interests. But what can be said is that Asians and Southeast Asians have not really begun to explore these possibilities sufficiently.

Part of the problem is technology; much of these technologies has been pioneered in the Western and developed economies. But other obstacles relate to the lack of priority, the failure to open markets to private sector companies and inability to innovate policy and administer the right projects. For instance, many Asian and ASEAN cities struggle with the problems of waste and landfills. There are makeshift settlements on some landfills, that suffer from poor conditions of life and are susceptible to fires from the escaping gases from the landfill. Yet the potential of “waste to energy” plants and policies has not been explored to resolve this problem of urbanization and, at the same time, supply energy.

Asia and ASEAN should give much greater emphasis to utilizing both existing technologies for such alternative energies, as well as to research and test bed emerging technologies. The East Asian grouping includes countries that have good initiatives in alternative energies, like Japan, South Korea, Australia and India, and cooperation should be explored.

ASEAN has been rich in resources, and in many ways is rich still. The difficulties are to recognize and harness these resources in a sustainable way in tandem with technologies and the involvement of the private sector.

As Japan is a high technology country that has a strong tradition in research and engineering, it is well poised to join and even lead ASEAN and Asia in the search for innovative technologies that can be test bedded.

Regional Response to Natural Disasters

In almost all climate change scenarios, there are predictions of severe weather phenomena, that become more frequent or become even more severe. The recent incidents like Cyclone Nargis and

mass floodings, are therefore perhaps the tip of a (melting) iceberg. These have tested and often overtaxed the resources of any single state. Regional cooperation has been needed to respond to a number of them.

ASEAN leaders should therefore give priority to working out regional arrangements to facilitate and strengthen shared responses to such disasters and indeed to share information and best practices to prevent and mitigate such disasters.

How will ASEAN member states fare with such severe weather phenomena, and other effects of climate change? Do we face a future of recurring disasters, with an increasing toll on the peoples and economies of the region? These are important questions that the governments of the region must begin to answer through enhanced cooperation. As these will involve military forces, there are also possibilities for enhancing understanding and confidence between the military forces.

A First Priority: Water?

Almost all recognize that climate change is likely to trigger a rise in the oceans. Given the available hydropower sources in ASEAN region, some argue that hydropower could provide an environmentally benign solution to the provision of energy and have less impact on the development of natural resources than that typically associated with the use of fossil fuels (Jaafar, 2000); it is also suggested that hydropower can help augment the electrification of remote villages and in the process stimulate employment and improve living standards.²¹ What is less well recognized is that while there will be more water where it is not presently, existing water resources will also be negatively affected. Rivers and other water resources will be salinized. Droughts (as seen in Australia) will recur. There is already a shortage of water of the right quality and in the right places in cases, especially China and India. Water demand is likely to increase with industrialization and urbanization.

Technology and processes to treat and recycle water have been transformed in recent years and have been test bedded in a number of countries. The economic cost of treatment has become viable in a number of countries. As such, it may be timely for²²many more in Asia and ASEAN to secure existing water sources and to move further in utilizing technologies for water.

Japan, which is hosting the international water forum in 2007, can work with others in the region like Singapore on this important issue.

ASEAN and Asia's Attention

In the run up to the 12th ASEAN Summit, climate change was not a focus for the grouping. This however seems to be changing. Much of this is being carried by the shifts in international opinion, as in 2006-07, the global community has experienced a sea change in attitudes. For the region itself, the 2006 ASEAN and East Asian summits may be seen as markers of change. Notably, the Cebu Summit itself, originally scheduled for Dec 2006, was put off because an incoming tropical storm might have turned into a full blown typhoon.

The Cebu Summit, when convened in Jan 2007, took a significant step forward on the issue of climate change. This was neither direct nor focused on ASEAN. Rather, the issue was raised in the context of energy security and in the wider East Asian Summit framework, which brings together the “+3” countries of China, Japan and South Korea; Australia and New Zealand; and India, under ASEAN chairmanship.

In the Cebu Declaration, these countries pledged to work closely together to mitigate greenhouse gas emission through effective policies and measures, thus contributing to global climate change abatement. But the declaration avoided any talk about binding commitments or caps on emissions. Rather, the parties emphasize voluntary measures that involve private sector involvement and the introduction of more efficient and innovative technologies. In this context, it proposed (inter alia) measures to (1) encourage the use of biofuels and work towards freer trade on biofuels and a standard on biofuels used in engines and motor vehicles; (2) encourage collective efforts in intensifying the search for new and renewable energy resources and technologies, including research and development in biofuels; and for improving efficiency and conservation, while enhancing international cooperation through intensified energy efficiency and conservation programmes;

Efforts to increasing energy security though cooperative measures were also recommended. These, the states agreed, would aim to (1) ensure availability of stable energy supply through investments in regional energy infrastructure such as the ASEAN Power Grid and the Trans ASEAN Gas Pipeline; (2) encourage recycling of oil revenues and profits for equity investments and long term, affordable loan facilities for developing countries in the region; and (3) explore possible modes of strategic fuel stockpiling such as individual programmes, multi-country and/or regional voluntary and commercial arrangements.

Another step forward in 2006-07 was taken in the Asia-Europe meeting. The ASEM-6 Helsinki meeting resulted in a declaration on climate change. The two sides of the ASEM process recognized the possibilities of working together within the frameworks provided by the Kyoto Protocol to foster technology and investment to deal with climate change.

While they should not been seen as a substitute for the Kyoto Protocol, these frameworks for East Asia and Asia-Europe on the issue can be useful. They would also complement the Asia-Pacific-6 dialogue that already links regional countries like Australia, China, India, Japan and South Korea to the USA, and is quite similar in tone and aim.

More can and should however be done by ASEAN and Asian states. But while more can be done, more is not always better. There are, in looking at climate change insecurities, a number of dangers that should be avoided. Otherwise, our insecurities over energy and climate change can drive us to actions that might, in the long run, increase our insecurities.

With Kyoto itself due to renewal after 2012, we are entering a phase of heightened activity and attention at the international level. Between 2008-2012 we should expect to see negotiations on climate change at the international level with an attention and expectation that has not been witnessed before.

A central concern for ASEAN and Asia, especially China, India and also Indonesia, is whether there will be commitments and caps on their emissions and, other things being equal, their potential economic growth. While these are potential dangers, Asians must go beyond denial and refusal.

The focal point is to give attention to climate change without undermining security and economic growth. All ASEAN member states except Brunei are now parties to the Kyoto Protocol to the Framework Convention on Climate Change, and negotiations will soon begin with the aim to start a new regime in 2012.

Climate change is a profound challenge to our security in the long term. But while profound and long term, there are steps that can be taken in ASEAN and Asia more immediately. Moreover, these need not be futuristic grandiose schemes or schemes to deny economic growth and opportunities in the emerging Asia. Dealing with climate change for Asians can and should start with what is sensible and viable, and to aim enhance our economies, and sense of security and schemes for cooperation.

Japan has taken a leading role alongside the European Union in recognizing the issues of climate change, and in the Kyoto Protocol, which it hosted and has helped pushed along. Japan as a leading partner of ASEAN in terms of political and economic engagement can and should assist ASEAN member states, individually and collectively, to address the present and emerging challenges from climate change and find opportunities to combine continued growth, security and stability with the need to protect our global and regional environment.

Conclusion

There is a large unmarked territory to tread upon when dealing with energy security and environment in the 21st century. Much more attention should be drawn to the issues and a wider participation and cooperation is required before taking further steps. Without a better awareness of the issue and our determination to come up with workable solutions, tangible success in energy security would be unattainable. Four key factors: cooperation, efficiency, environment and nuclear development should be approached with deep consideration.

In regards to the usage alone, energy efficiency can provide immediate results as significant as 30 per cent improvement. Having mentioned these embedded issues within the energy security, it is worth reconsidering our borderless approach to the subject and increasing our understanding of applicable solutions. As it is well known, energy security issue does not limit itself to one region. Accordingly, the basic argument of this presentation focused on different sides of the regional energy security whilst seeking to keep the triangle of issues undamaged. To safeguard economic

growth, energy and climate change, states should cooperate, promote energy efficiency, and have acute insights upon substitute energy.

¹ William T. Tow, 'Strategic dimensions of energy competition in Asia', *Energy Security in Asia* (Oxon: Routledge, 2007), p.163.

² Mohan P.C.Munasinghe, 'Sustainable Energy Development(SED):Issues and Policy', *Energy, Environment and the Economy: Asian Perspectives* (Cheltenham: Edward Elgar, 1996), p.3.

³ Even though Japan has reduced its oil dependence by a third since the 1970s, it remains the world's third largest consumer of oil as well as the world's largest importer of liquefied natural gas (LNG), accounting for 40 percent of total world imports. While its energy consumption growth is expected to plateau, Japan will continue to import vast quantities of oil and gas. China, which has now become the world's second largest consumer of oil, imports about 3 million barrels of oil per day (bpd), or roughly 50 percent of its total consumption. In 2006, China's oil imports grew 14.5 percent over the previous year, and the International Energy Agency estimates that China's petroleum imports are likely to rise fourfold from 2003 to 2030 (Xinhua, January 12; International Energy Outlook, 2006). China's imports of LNG, which began in 2006, are expected to grow rapidly as well. It is therefore not surprising that securing stable energy supplies from overseas has become a major preoccupation for Chinese and Japanese policymakers alike. Such a dependence upon energy imports, coupled with energy price and supply volatility as well as high geopolitical risk, has sparked a debate about energy security in China as well as in Japan.

⁴ Mohan P.C.Munasinghe, 'Sustainable Energy Development(SED):Issues and Policy', *Energy, Environment and the Economy: Asian Perspectives* (Cheltenham: Edward Elgar, 1996), p.5.

⁵ William T. Tow, 'Strategic dimensions of energy competition in Asia', *Energy Security in Asia* (Oxon: Routledge, 2007), p.163.

⁶ William T. Tow, 'Strategic dimensions of energy competition in Asia', *Energy Security in Asia* (Oxon: Routledge, 2007), p.163.

⁷ Mohan P.C.Munasinghe, 'Sustainable Energy Development(SED):Issues and Policy', *Energy, Environment and the Economy: Asian Perspectives* (Cheltenham: Edward Elgar, 1996), p.11.

⁸ Kang Wu (ed.), *Asia's energy future* (East-West Center, 2007), p.90.

⁹ Mohd Zamzam Jaafar, 'ASEAN', *Rethinking Energy Security in East Asia* (JCIE, 2000), p.131.

¹⁰ Mohan P.C.Munasinghe, 'Sustainable Energy Development(SED):Issues and Policy', *Energy, Environment and the Economy: Asian Perspectives* (Cheltenham: Edward Elgar, 1996), p.28.

¹¹ Shehzad Sadiq, 'Balancing Economic Growth, Energy Development and Environmental Impact' *Energy, Environment and the Economy: Asian Perspectives* (Cheltenham: Edward Elgar, 1996), p.28.

¹² *Ibid.*, p.28.

¹³ *Ibid.*, p.87.

¹⁴ Ang Beng Wah, *ASEAN Energy Demand: Trends and Structural Change* (Singapore: ISAS, 1986), p.122.

¹⁵ Mohan P.C.Munasinghe, 'Sustainable Energy Development(SED):Issues and Policy', *Energy, Environment and the Economy: Asian Perspectives* (Cheltenham: Edward Elgar, 1996), p.27.

¹⁶ Ang Beng Wah, *ASEAN Energy Demand: Trends and Structural Change* (Singapore: ISAS, 1986), p.39.

¹⁷ *Ibid.*, p.39.

¹⁸ Kang Wu (ed.), *Asia's energy future* (East-West Center, 2007), pp. 93-97.

19. "Indonesia to Offer New Oil Exploration Blocks," Reuters, August 15, 2006. (Soesastro and Atje 2005).

20. Even after enacting subsidy cuts that doubled fuel prices in 2005, the government expects to spend more than \$7 billion annually to cushion consumers from the rising price of fuel, an amount equal to twice its projected budget deficit . "Indonesia says to up '07 budget oil price to \$65/bbl," Reuters, August 15, 2006; "Indonesia president forecasts H2 pick up in economy," Reuters, August 16, 2006.

²¹ Mohd Zamzam Jaafar, 'ASEAN', *Rethinking Energy Security in East Asia* (JCIE, 2000), p.133.

*Session II : “Future Prospects for
East Asian Environmental and Energy Cooperation”*

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**FUTURE PROSPECT FOR EAST ASIAN ENVIRONMENTAL AND
ENERGY CORPORATION – SOME THOUGHTS**

Introduction

Global concerns on climate change and its effects has resulted in the establishment of the Intergovernmental Panel on Climate Change (IPCC) in 1988 by the United Nations Environment Program (UN EP) and the World Meteorological Organization. (WMO). The main task of the panel was to gather and assess scientific information and knowledge with respect to climate change. It is widely recognized that the IPCC’s First Assessment report played an important role that led to the adoption of the United Nations Framework Convention on Climate Change (UNFCCC) in 1992 at the Earth Summit in Rio de Janeiro, Brazil. UNFCCC is the main global instrument on climate change issues. The main objective of the convention was to stabilize atmospheric greenhouse gas concentration at a level that would prevent dangerous anthropogenic interference with the climate system. The scientific knowledge and evidence of climate change is well documented by the successive reports prepared by the IPCC. In 1995, the Second Assessment confirm that the balance of evidence suggest that there is a discernable human influence on climate change. The Third Assessment Report of the IPCC was released in 2001 further reinforces the findings of the scientific communities on the impact of climate change was due to human interference. The Fourth Assessment Report which was released in November 2007 incorporated several advances in scientific knowledge and information related to climate change. The major finding of the report reconfirm that climate change is very much influence by human activities.

The recently concluded United Nations Climate Change Conference in Bali, Indonesia 3-14 December 2007 attracted more than 10000 participants including representatives of over 180 countries together with observers from intergovernmental and non-governmental organization and media. The two week period included session of 13th Conference of Parties to the UNFCCC, its subsidiary bodies as well as meeting of parties to Kyoto Protocol. A ministerial segment in the second week concluded the conference.

The conference culminated in the adoption of the Bali road map, which charts the course for a new negotiating process to be concluded by 2009 that will ultimately led to post 2012 international agreement on climate change. Some of the decisions taken include the launch of the adoption Fund as well as decision on technology transfer and on reducing emissions from deforestation. These significant decisions represent various tracts that are essential to achieving to secure climate future.

East Asian Region

It is estimated that the population of the countries of East Asian Region is about 1.87 billion people. The region has experience one of the fastest economic growth in the world at the average

rate of 6.2 percent annually. In many countries of the region have been pursuing aggressive industrial development to improve their economy. This has resulted in poverty reduction and employment creation for the population. However, these rapid changes have also affected their environment and the depletion of natural resources.

How East Asian Region will be affected?

World Bank (2006) estimated that about 500million people of the region live in low lying coastal areas and islands. With rapid urbanization and economic activities it is envisage that the population will further increase in the future. This will further affect the coastal land and resources which are expected to deteriorate due to environmental consequences.

Agriculture development and activity is an important sector that generates income as well as food for the population. The sector contributes significantly to the GDP of the region. It is about 13 percent of the region's GDP. It is estimated that 60 percent live in rural areas and 50 percent of land is dedicated to agriculture. With increasing population and irrigation of the agricultural land will also affect the quality and quantity of water supply. Pollution and deterioration of watershed areas will severely affect the availability of water resources.

Another important source of food supply for the region is the marine and freshwater fisheries and aquaculture. (FAO 1997) reported that East Asian Region is the leading in aquaculture industries which is estimated of producing 70 percent of the all farmed fish, shrimp and shellfish in the world. Future aquaculture development will be severely affected due to shortage of suitable land area and also water supply. On the other hand, due to overfishing and pollution is affecting the fishery resources of the region.

In term of energy demand, the countries of East Asian Region are very dependent on fossil fuel to meet their energy requirement. This is expected to increase rapidly in the future due to population pressure and industrial development. The long term energy supply and requirement will be crucial to most countries of the region.

Expected impacts of climate change on East Asian Region

IPCC report predicts that East Asia Region is expected to have significant impact due to climate change. According to the IPCC middle range scenario the entire region will experience rise temperature of about 2.5 degree Celsius by the end of the century. This includes changes in winter temperatures, minimum daily temperature will raise more than daily minimum temperature. Land will warm more than oceans causing stronger monsoon activity and warmer temperatures in higher altitude. In addition extreme weather events will increase such as cyclone, storm, floods, and fire. It is also expected that the sea level will rise between 18 to 59 centimeters as projected by the IPCC report. These events will have both positive and negative impact sin the region.

In this regard, it is expected that the climate change will have significant impact on environment, economic and social of the region. These can be summarized as follows:-

ENVIRONMENTAL IMPACTS	
Changes to coastal and marine systems	<ul style="list-style-type: none"> • Sea level rise that would increase erosion and inundation. • More intense cyclone and storm. • Higher sea surface temperature and changes in ocean chemistry.
Damage to delta ecosystems	<ul style="list-style-type: none"> • Delta and estuarine ecosystems sensitive to sea level rise and saltwater intrusion.
Impact on small islands	<ul style="list-style-type: none"> • Coastal retreat and erosion resulting from sea level variability and rise; affecting tourism, building and beaches in low-lying areas.
Loss of coral reefs	<ul style="list-style-type: none"> • Coral reefs in South East Asia have been degrading over the past 100 years.
Changes in forest cover and biodiversity. <ul style="list-style-type: none"> ○ Biodiversity threatened by habitat loss, pollution and over exploitation. 	<ul style="list-style-type: none"> • <i>Tropical and temperate forests</i> – changes in forest cover will be associated with changes in water availability, shift in temperature, precipitation and extinction of pollinating and fruit-dispersing animals • <i>Expansion of semi-arid drylands</i> – Asia-Pacific region is responsible for about 75 percent of human-induced salinization in arid, semi-arid, and dry sub-humid areas. • <i>Changes in species distribution, abundance and habitat</i> – distribution of species in ecosystem in Asia is projected to shift to higher elevations and latitudes as a result of global warming. • <i>Invasive species</i> • <i>Changes in migratory patterns</i> • <i>Reduced ecosystem services</i>

ECONOMIC IMPACTS	
Threat to water security	<ul style="list-style-type: none"> • Too much and too little water • Glacial melt • Seawater intrusion
Impact on agriculture	<ul style="list-style-type: none"> • Reduced in agricultural production in the Southern regions • Increased agricultural production in Northern areas • Increase demand for irrigation • Increase of pest populations and crop pathogens • Impact on trade
Impact on fisheries	<ul style="list-style-type: none"> • Marine fisheries • Inland fisheries
Disruption of tourism	<ul style="list-style-type: none"> • Source of revenue for many country • Foreign exchange earnings • Employment
Reduced energy security	<ul style="list-style-type: none"> • Highly dependent on fossil fuel • Increase cost of energy

Negative impacts on GDP	<ul style="list-style-type: none"> • Infrastructure loss • Less income • Increasing cost of repairs and rehabilitation due to natural disaster
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SOCIAL IMPACT	
Displacement and livelihood loss	<ul style="list-style-type: none"> • Loss of jobs • Losses from displacement
Human health impact	<ul style="list-style-type: none"> • Increase in temperature related illness and death • Extreme weather induce health • Air pollution related health • Water and food borne diseases • Vector-borne and rodent-borne diseases • Effect of food and water shortages • Mental trauma • Infection, nutritional and psychological

Possible responses by East Asian Countries

Countries of the East Asian Region realized and recognized that adaptation is a long term undertaking that will require time to quantify risks and effects of climate change impact. It is difficult and not possible to avoid climate change over the next few decades. The only approach is adaptation to climate change in order to protect communities, ecosystems and economies of the region. Adaptation is multidimensional process; it requires integration of sound planning, capacity building, research and technology development, resource mobilization and awareness rising. The following area of cooperation and collaboration could be explored:

1. Improving knowledge and database

Accurate information on climate change such as improve weather forecast and long term regional climate projection is essential for prediction which will help decision makers to plan ahead to avoid and reduce the impact of climate related events.

2. Research and Development

Research activities both fundamental and applied are crucial to increase availability of new information and data with regard to climate change. Research will also generate new knowledge on how to manage climate change impacts on various sectors such as water resources, biodiversity, agriculture, fisheries, forestry, human health, coastal areas, tourism, settlements and infrastructures. Research collaboration and partnership will further enhance regional cooperation.

3. Technology Transfer

Transfer of technology is more than a flow of technology hardware from a country to the other. It can also involve the exchange or flow of expertise and technology know-how among stakeholders, including government, private entities, research institutions, academia universities, and among non-governmental organizations. Technology transfer can take place in many modes, such as among governments (through official development aids),

market driven among private companies, exchange of scientists and research activities, multilateral development banks and other financial mechanisms.

4. Financial Mechanism

Mobilizing domestics and international funding are crucial to support actions on climate change adaptation and mitigation efforts. Hence, it is important that efforts to address climate change adaptation and mitigation needs should not take resources away from core development needs and growth objectives of the countries. Therefore, climate change should go hand in hand with development needs and growth objectives of the countries.

5. Capacity Building, Training and Education

Capacity building activities are essential for improving individual, institutional in order to facilitate the country's initiatives to adapt to climate change and mitigate the greenhouse gas emissions in an environmentally sustainable and cost-effective manner.

Conclusion

Countries of the East Asian Region are vulnerable to the impact of climate change and it could affect and undermine the progress of the economic growth and development. The region with large population and are concentrated in coastal and low lying areas are greatly affected by climate change. In addition, the over dependent on agriculture, marine resources and growing water requirement and demand further affect their livelihood. It is therefore crucial for the countries of the East Asia Region to cooperate and collaborate in areas of common interest to respond to the impact of climate change.

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Technology transfer: An ever-lasting issue in the negotiation for the future climate change architecture

1. The climate change issue becomes an important policy agenda against the backdrop of unprecedented worldwide momentum. However, in addition to the growth of global population and wealth, significant contributions to the growth of atmospheric CO₂ arise from the halt to improvements in carbon intensity. The rise in growth in atmospheric CO₂ is generating climate forcing that are bigger and sooner than expected. By altering the global energy balance, these mechanisms "force" the climate to change. Therefore, it is not an overstatement that our human civilization is very seriously at stake.

2. Technology transfer is one of the core elements for the future architecture on the climate change issues. Under UNFCCC, technology transfer is described as follows:

Article 4.5 ...developed countries shall promote, facilitate and finance the transfer of, or access to, EST and know-how. They shall also support the development and enhancement of endogenous capacities and technologies of developing countries.

Article 4.7 ...the extent to which developing countries will effectively implement their commitment will depend on effective provision of financial resources and transfer of technology as economic and socio development and eradication of poverty are the first and overriding priorities.

3. In COP 13, through the hard negotiation, final text on the technology transfer in the "Bali Action Plan" has changed from the original text proposed by the president of the conference to the text that was originally advocated by the developing countries (see below).

<Draft text proposed by the president of the conference>

measurable, reportable and verifiable nationally appropriate mitigation actions by developing countries in the context of sustainable development, supported and enabled by technology, financing and capacity building. ("Proposal by the President" : FCCC/CP/2007/L.7)

<Final text originally proposed by the developing countries>

nationally appropriate mitigation actions by developing countries in the context of sustainable development, supported and enabled by technology, financing and capacity building, in a *measurable, reportable and verifiable* manner. (Advance unedited version, Decision -/CP.13 : Bali Action Plan)

Because of this change, it has become possible to interpret that the commitments by the developing countries are not achievable without the 'mandatory' commitments by the developed countries on technology transfer.

4. In principle, after many years of implementation of UNFCCC, developing countries have been and will continue to complain lack of technology transfer. However, it is also true that technology transfer is more than a North-South flow of technology hardware. It is a flow of experience, know-how, among stakeholders, including government, private sector entities, research institutions, universities, as well as NGOs. There are many barriers for effective transfer of technology such as: 1) insufficient human and institutional capacities, 2) lack of knowledge and awareness of emerging technologies, 3) insufficient financial capitals to acquire better technologies, 4) reluctance in accepting energy efficiency as energy tariff remains low, 5) poor enabling environment, 6) lack of support from local financial Institutions, 7) protection of Intellectual Property Rights (IPRs), 8) lack of assessment of technology needs, 9) poor supports from government on innovation, R & D, 10) poor market for technology, etc.

5. Currently, IPRs issue is being raised as the one of the core issues on technology transfer in the preparatory meetings for the COP. Developed countries insist that expecting IPRs and technology transfer can be compatible. They argue that: 1) currently less developed countries will become developed countries in future to which respecting IPRs is beneficial, and 2) whether and to what extent IPRs are barriers to technology transfer depends on the stage of technology development or the nature of the technology itself. However, it is also plausible that IPRs may hamper desirable technology transfer. In that case, domestic/international policy push to the private sector including a flexible IPR regime and other enabling policies such as green subsidies or preferential tax treatment for the firms that provides technologies, may be crucial to making vertical and horizontal technology deployment economically and politically feasible. In addition, it will be effective to develop appropriate technologies jointly with developed countries so that IPRs can be shared.

6. "Sectoral approach" currently being proposed by the Japanese government is originally a proposal that combine the stick (sectoral commitment by the developing countries) and carrot (technology transfer). New and additional fund to facilitate technology for mitigation and adaptation is also being discussed in the various occasions.

7. Although it might not be so easy to reach the agreement by COP 15 because of the time constraint and various conflicts, we have to continue to find a way to have a consensus such as on the technology transfer.

4. An Introduction to The Global Forum of Japan

(1) Introduction

【Objectives】 As we embrace the 21st century, international relations are becoming increasingly interdependent, and globalization and regionalism are becoming the big waves. In this global tendency, communicating with the world, especially neighboring countries in the Asia-Pacific region at both governmental and non-governmental level, is one of the indispensable conditions for Japan to survive. On the basis of such understanding, The Global Forum of Japan (GFJ) aims to promote the exchange of views on commonly shared interests and issues in the field ranging from politics and security to economy, trade, finance, society and culture, and to help business leaders, Diet members and opinion leaders both in Japan and in their counterpart countries to discuss the formulation of new orders in global and regional arenas.

【History】 The 1982 Versailles Summit was widely seen as having exposed rifts within the Western alliance. Accordingly, there were expressed concerns that the summit meetings were becoming more and more stylized rituals and that Western solidarity was at risk. Within this context, it was realized that to revitalize the summit meetings there must be free and unfettered exchanges of private-sector views to be transmitted directly to the heads of the participating states. Accordingly, Japanese former Foreign Minister OKITA Saburo, U.S. Trade Representative William BROCK, E.C. Commission Vice President Etienne DAVIGNON, and Canadian Trade Minister Edward LUMLEY, as representatives of the private-sector in their respective countries, took the initiative in founding The Quadrangular Forum in Washington in September 1982. Since then, the end of the Cold War and the altered nature of the economic summits themselves had made it necessary for The Quadrangular Forum to metamorphose into The Global Forum established by the American and Japanese components of The Quadrangular Forum at the World Convention in Washington in October 1991. In line with its objectives as stated above, The Global Forum was intended as a facilitator of global consensus on the many post-Cold War issues facing the international community and reached out to open its discussions not only to participants from the quadrangular countries but also to participants from other parts of the world. Over the years, the gravity of The Global Forum's activities gradually shifted from its American component (housed in The Center for Strategic and International Studies) to its Japanese component (housed in The Japan Forum on International Relations), and, after the American component ceased to be operative, the Board of Trustees of the Japanese component resolved, on February 7, 1996, that it would thereafter act as an independent body for organizing bilateral dialogues with Japan as a hub for all countries in the world, and amended its by-laws accordingly. At the same time, The Global Forum's Japanese component was reorganized into The Global Forum of Japan (GFJ) in line with the principle that the organization be self-governing, self-financing, and independent of any other organization.

【Organization】 The Global Forum of Japan (GFJ) is a private, non-profit, non-partisan, and independent membership organization in Japan to engage in and promote international exchanges on policy-oriented matters of bilateral, regional and global implications. While the secretariat is housed in The Japan Forum on International Relations, GFJ itself is independent of any other organizations, including The Japan Forum on International Relations. Originally established as the Japanese component of The Quadrangular Forum at the initiative of HATTORI Ichiro, OKITA Saburo, TAKEYAMA Yasuo, TOYODA Shoichiro in 1982, GFJ is currently headed by OKAWARA Yoshio as Chairman and ITO Kenichi as President. The membership is composed of 12 Business Leader Members including the two Governors, MOGI Yuzaburo and TOYODA Shoichiro; 85 Opinion Leader Members including the four Governors, ITO Kenichi, MURAKAMI Masayasu, OKAWARA Yoshio, and SHIMADA Haruo; and 21 Diet Members including the three Governors, KOIKE Yuriko, HATOYAMA Yukio, and TANIGAKI Sadakazu. Friends and supporters of The Global Forum of the Japan are organized into the Supporters' Club of the Global Forum of Japan. Financially the activities of GFJ have been supported by the annual membership fees paid by 12 leading Japanese business corporations (with 2 corporations, Toyota Motor Corporation and Kikkoman Corporation contributing 5 shares each and the other 10 corporations contributing 1 share each) as well as by the grants provided by The Japan Foundation, Japan-ASEAN Exchange Projects, The Tokyo Club, The Japan-Korea Cultural Foundation, etc. WATANABE Mayu serves as Executive Secretary.

【Activities】 Since the start of The Global Forum of Japan (GFJ) in 1982, GFJ has shifted its focus from the exchanges with the Quadrangular countries for the purpose of contributing to the Western Summit, to those with neighboring countries in the Asia-Pacific region including US, China, Korea, ASEAN countries, India, Australia, European countries, and Wider Black Sea area, for the purposes of deepening mutual understanding and contributing to the formation of international order. GFJ has been active in collaboration with international exchange organizations in those countries in organizing policy-oriented intellectual exchanges called "Dialogue." In order to secure a substantial number of Japanese participants in the "Dialogue," GFJ in principle holds these "Dialogues" in Tokyo. A listing of topics of "Dialogues" and its overseas co-sponsors in last five years is given below.

Year	Month	Topic	Co-sponsor
2004	July	A Roadmap towards East Asian Community	ASEAN-ISIS
	September	Future Prospect of East Asian Community and Japan-China Relationship	China Association for International Friendly Contact (China)
	November	Future of Korean Peninsula and Japan-U.S.-Korea Security Cooperation	The Institute for Foreign Policy Analysis, The Fletcher School (US), Yonsei University (Korea)
2005	April	The Prospect of East Asian Community and Japan-Korea Cooperation	Presidential Committee on Northeast Asian Cooperation Initiative (Korea)
	November	The Prospect for East Asian Community and Regional Cooperation Peace and Prosperity in the Wider Black Sea Area and the Role of Japan	ASEAN-ISIS University of Shizuoka, The Black Sea University Foundation (Romania), The International Center for Black Sea Studies (Turkey)
2006	February	Review and Perspective of the Japan-Taiwan Relationship	Taiwan International Studies Association (Taiwan)
	June September	An East Asian Community and the United States Prospect for Japan-ASEAN Strategic Partnership after the First East Asia Summit	The Pacific Forum CSIS (US), The Council on East Asian Community ASEAN-ISIS
2007	January	The China-Japan Relationship and Energy and Environmental Issues	China Institutes of Contemporary International Relations (China), Energy Research Institute, National Development and Reform Commission (China), The Japan Forum on International Relations
	June	The US-Japan Alliance in the 21st Century	National Committee on American Foreign Policy (US)
	July November	The Challenges Facing Japan and ASEAN in the New Era Japan and Black Sea Area in the Rapidly Changing World	ASEAN-ISIS Organization of Black Sea Economic Cooperation (BSEC), Embassy of Turkey, University of Shizuoka
2008	January	An East Asian Community and the United States	The Council on East Asia Community, The Pacific Forum CSIS (US)
	June	Cooperation in Environment and Energy	The Council on East Asian Community, The East Asian Institute, National University of Singapore

(2) Membership List of The Global Forum of Japan

As of June 1, 2008

In alphabetical order

【Chairman】

OKAWARA Yoshio, President, Institute for International Policy Studies

【President】

ITO Kenichi, President and CEO, The Japan Forum on International Relations, Inc.

【Executive Governor】

MURAKAMI Masayasu, Executive Director, The Japan Forum on International Relations, Inc.

【Business Leader Governors】

MOGI Yuzaburo, Chairman and CEO, Kikkoman Corporation
TOYODA Shoichiro, Honorary Chairman, Toyota Motor Corporation

【Diet Member Governors】

HATOYAMA Yukio, Member of the House of Representatives (DPJ)
KOIKE Yuriko, M.H.R. (LDP)
TANIGAKI Sadakazu, M.H.R. (LDP)

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OKAWARA Yoshio, President, Institute for International Policy Studies
SHIMADA Haruo, President, Chiba University of Commerce

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MATSUNO Haruki, Chief Executive Counselor, Member of the Board, Nippon Telegraph and Telephone Corporation
MOGI Yuzaburo, Chairman and CEO, Kikkoman Corporation
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SEYA Hiromichi, Senior Corporate Adviser, Asahi Glass Co., Ltd.
TAKAGAKI Tasuku, Senior Advisor, The Bank of Tokyo-Mitsubishi, Ltd.
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AOKI Tamotsu, Commissioner, Agency for Cultural Affairs
AMAKO Satoshi, Professor, Waseda University
ASOMURA Kuniaki, Professor, North Asia University
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HASEGAWA Kazutoshi, President, Japan-Australia-New Zealand Society
HATA Kei, Vice Principal, Sakushin Gakuin
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HIRONO Ryokichi, Professor Emeritus, Seikei University
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IKEO Aiko, Professor, Waseda University

IMAGAWA Yukio, former Ambassador to Cambodia
INA Hisayoshi, Columnist, The Nikkei Newspaper
INOUCHI Takashi, Professor, The University of Tokyo
IOKIBE Makoto, President, The National Defense Academy of Japan
ITO Eisei, Corporate Auditor, Toyota Auto Body Co., Ltd.
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IZUMI Hajime, Professor, University of Shizuoka
JIMBO Ken, Associate Professor, Keio University
KAKIZAWA Koji, former Minister of Foreign Affairs
KAMIYA Mataka, Professor, National Defense Academy
KANEKO Kumao, President, Japan Council for Economic Research
KAWAI Masao, Guest Professor, Hakuo University
KIMURA Takayuki, Guest Professor, International Christian University
KINOSHITA Hiroo, Advisor, National Small Business & Information Promotion Center
KOGURE Masayoshi, former Professor, Toyo University
KOKUBUN Ryosei, Professor, Keio University
KONDO Tetsuo, President, Institute for New Era Strategy (INES)
KUBO Fumiaki, Professor, Keio University
MANO Teruhiko, Professor under special assignment, Seigakuin University
MATSUMOTO Kenichi, Professor, Reitaku University
MIYAMOTO Nobuo, Diplomatic Commentator
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OKONOGI Masao, Professor, Keio University
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TAKASHIMA Hatsuhisa, Councilor, Ministry of Foreign Affairs
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TAKEMI Keizo, Professor, Tokai University
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YUSHITA Hiroyuki, Guest Professor, Kyorin University

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【Executive Secretary】

WATANABE Mayu

[Note] DPJ: Democratic Party of Japan
LDP: Liberal Democratic Party
NK: New Komeito

(3) Acknowledgment

ACKNOWLEDGMENT

The Global Forum of Japan (GFJ) is grateful to its “Business Leader” members listed below for their generous contributions. Their support is making the activities of the Forum financially sustainable.

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(In the order of enlistment)

5 .An Introduction to The Council on East Asian Community

(1) Introduction

[Inauguration]

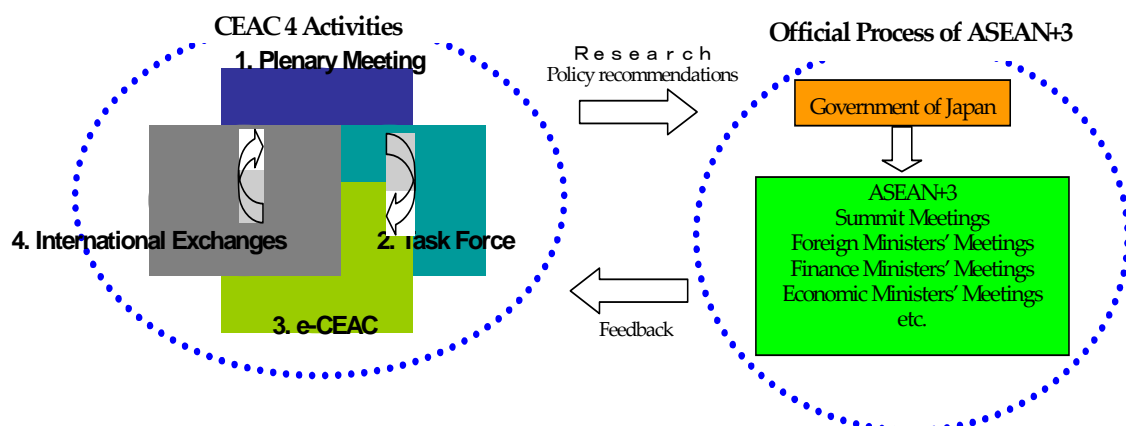
The concept of an "East Asian Community" has been spread quietly but steadily leading to the formation of a gigantic trend in the East Asian region. "The Council on East Asian Community (CEAC)" was inaugurated in Japan on May 18, 2004, considerably triggered by the launching in 2003 of "The Network of East Asian Think-Tanks(NEAT)" in Beijing and of "The East Asia Forum(EAF)" in Seoul in 2003. The establishment of CEAC was called for by 10 Think-Tanks, such as the Japan Forum on International Relations (JFIR) and The Japan Institute of International Affairs (JIIA), and 30 scholars such as TANAKA Akihiko, Professor of the University of Tokyo and YOSHITOMI Masaru, President & Chief Research Officer of the Research Institute of Economy, Trade & Industry. CEAC consists of representatives from wide-ranging fields in Japan who are interested in the concept of an "East Asian Community," including those who represent businesses corporations, such as Nippon Steel Corporation and Toyota Motor Corporation, and government agencies, such as the Ministry of Foreign Affairs, the Ministry of Finance and the Ministry of Economy, Trade and Industry. Growing momentum for East Asian Community has finally come to take root in Japan whose attitude towards the issue tended to be passive until recently.

[Organization]

As an all-Japan intellectual platform covering business, government, and academic leaders, CEAC aims at the strengthening of intellectual collaboration, the building of intellectual foundation, and the sharing of strategic ideas among them. The membership of CEAC consists of 13 think-tank members, 94 individual members and 13 corporate members as of today. CEAC elected NAKASONE Yasuhiro, former Prime Minister of Japan, as Chairman, and ITO Kenichi, President of JFIR, as President at its Founding Meeting. CEAC is governed by its "Managing Plenary Meeting" and "Managing Executive Meeting," which is headed by its President. The "Policy Plenary Meeting," which is attended by the members of CEAC, conducts policy-debate among its members, and produce policy recommendations as occasions demand.

[Activities]

The activities of CEAC consist of the following four pillars: (1) the Policy Plenary Meeting, (2) the Research and Study, (3) the Website, and (4) the International Exchange. (1) The "Policy Plenary Meeting" is a forum where the members of CEAC are assembled to promote policy debate. They met eight times in their first year of activities and adopted a policy report entitled "The State of the Concept of East Asian Community and Japan's Strategic Response thereto." (2) The "Research and Study," mobilizing scholars of Japan, Asia and the US, organized an international research workshop under the topic of "East Asian Community and Regional Governance in East Asia" in June 2006. (3) The "Website" is an online network both in Japanese and in English for the purpose of publicity and enlightenment both within and beyond Japan and is accessible at <http://www.ceac.jp/>. (4) The "International Exchange" is a series of programs, which includes the holding in Tokyo of not only "Dialogues on an East Asian Community" with Korea in April 2005, ASEAN in June 2005 and US and Asia in June 2006, but the 3rd NEAT Annual Conference in August 2005. It also dispatches its members to conferences held abroad including the NEAT Annual Conferences in Bangkok in 2004, Kuala Lumpur in 2006, Singapore in 2007.



(2) Officers of CEAC

[Councilors]

KISO Isao	Director-General for International Affairs, Ministry of Education, Culture, Sports, Science and Technology
SAIKI Akitaka	Director-General, Asian-Oceanian Affairs Bureau, Ministry of Foreign Affairs
SASAE Kenichiro	Deputy Minister for Foreign Affairs of Japan
SHINOHARA Naoyuki	Vice-Minister of Finance for International Affairs
TOYODA Masakazu	Vice-Minister for International Affairs, Ministry of Economy, Trade and Industry

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ARAKI Hiroshi	Adviser, Tokyo Electric Power Co., Ltd.
CHO Fujio	Chairman, Toyota Motor Corp.
HATA Tsutomu	Member of the House of Representatives
IMAI Takashi	Honorary Chairman, Nippon Steel Corp.
MAKIHARA Minoru	Senior Corporate Advisor, Mitsubishi Corp.
MIYAUCHI Yoshihiko	Chairman & CEO, Orix Corp.
NARITA Yutaka	Principal Advisor, Dentsu Inc.
OKA Motoyuki	Chairman of the Board of Directors, Sumitomo Corp
TATEISHI Nobuo	Executive Advisor, OMRON Corp.

[Chairman]

NAKASONE Yasuhiro	former Prime Minister of Japan
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[Vice Chairmen]

HATTORI Yasuo	Vice Chairman, Seiko Epson Corp.
INOUE Akiyoshi	President, Sanyu Appraisal Corp.
ITO Yoshiro	President, Itogumi Co., Ltd.
KAKIZAWA Koji	former Foreign Minister of Japan

[President]

ITO Kenichi*	President and CEO, The Japan Forum on International Relations, Inc.
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[Executive Vice-President]

MURAKAMI Masayasu*	Executive Director, The Japan Forum on International Relations, Inc.
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[Vice-Presidents]

GYOHTEN Toyoo	President, Institute for International Monetary Affairs
HATAKEYAMA Noboru	Chairman and CEO, Japan Economic Foundation
HIRONO Ryokichi	Professor Emeritus, Seikei University
ITO Motoshige	President, Institute for Research Advancement
KURODA Makoto	President, Center for Information on Security Trade Control
NAITOH Masahisa	Chairman & CEO, the Institute of Energy Economics, Japan
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In Alphabetical Order * Full-time As of June 1, 2008

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As of June 1, 2008

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KURODA Makoto	President, Center for Information on Security Trade Control
NAITOH Masahisa	Chairman & CEO, the Institute of Energy Economics, Japan
NISHIHARA Masashi	President, Research Institute for Peace and Security
OKAWARA Yoshio	President, Institute for International Policy Studies
SATOH Yukio	President, The Japan Institute of International Affairs
TAKAGI Yuki	Governor, Agriculture, Forestry and fisheries finance Corporation
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JIMBO Ken	Associate Professor, Keio University
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[Planning Committee]

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Member	HIRONO Ryokichi	Individual Member, CEAC
Member	MURAKAMI Masayasu	Individual Member, CEAC
Member	SHINDO Eiichi	Individual Member, CEAC
Member	YOSHIDA Haruki	Individual Member, CEAC

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ACKNOWLEDGMENT

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(In Alphabetical Order)

6.An Introduction to The East Asian Institute,

National University of Singapore

The East Asian Institute (EAI) was set up in April 1997 as an autonomous research organization under a statute of the National University of Singapore. It is the successor of the former Institute of East Asian Political Economy (IEAPE), which was itself the successor of the Institute of East Asian Philosophies (IEAP), originally established by Dr Goh Keng Swee in 1983 for the study of Confucianism.

The main mission of EAI is to promote academic and policy-oriented research on contemporary China and other East Asian economies. More specifically, EAI scholars conduct studies on various aspects of political, economic and social changes in China arising from its economic reform and open-door policy, the regional and global implications of the economic rise of China, and the cultural and commercial networks of the ethnic Chinese from a global perspective. The Institute also monitors developments in Hong Kong, Taiwan and Macau, and China's relations with Japan and Korea.

To promote academic exchange and to enable its research findings to reach out to a wider segment of the public, EAI organizes seminars and publishes research papers on a regular basis. EAI also participates in joint research projects with government ministries and statutory boards in Singapore, promotes collaborative programmes with similar institutions in the region as well as organizes regional and international conferences and workshops on East Asian issues.

The long-term vision of EAI is to develop into the region's foremost research institution on East Asian development. While its initial focus is on contemporary China, the Institute may in future extend its research to efforts to Japan and Korea as it builds up its resources.



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