



THE ASIAN NETWORK FOR USING ALGAE AS A CO₂ SINK THE ASIAN PACIFIC PHYCOLOGICAL ASSOCIATION



This Newsletter was supported by the Project "Algae and Global Warming", Ministry of Land, Transport and Maritime Affairs, Korea.


Newsletter

Issue No. 2 October 1, 2008

The 3rd Workshop of the Working Group for the Asian Network for Using Algae as a CO₂ Sink

The 3rd workshop of the APPA working group, along with a side event, was convened at the Novotel Venoa, Bali, Indonesia during the United Nations Climate Change Conference (UNCCC) 2007 (December 3~14). Twelve members from 11 countries were in attendance: John Beardall (Australia), Zhengyu Hu (China), Put O. Ang Jr. (Hong Kong), Dinabandhu Sahoo (India), Grevo S. Gerung (Indonesia, local focal point), Ik Kyo Chung (Korea), Jin Ae Lee (Korea), Siew-Moi Phang (Malaysia), Wendy Nelson (New Zealand), Danilo Largo (the Philippines), Yuwadee Peerapornpisal (Thailand), and Dang Diem Hong (Vietnam).

The workshop agenda was to review and endorse the Meeting Report of the 2nd Workshop of the working group, to present a progress report of the network activities, to review a list of the tasks to be performed by the network (refer to "WHAT IS TO BE DONE" in Newsletter, No 1.), and to

discuss the publication, "Using marine algae for carbon sequestration: a critical appraisal", which is being prepared by Ik Kyo Chung, John Beardall, Smita Mehta, Dinabandhu Sahoo and Slobodanka Stojkovic. Concerning Research & Development, a proposal for research into trace gas emissions from kelp farms by Greg Bodeker, Tong Sup Lee and Wendy Nelson was accepted as a candidate for bilateral research. The remaining, most significant topics and activities were measurement of the CO₂ sequestration capacity of seaweed, a training workshop on the measurement of CO₂ uptake by seaweed, and the side event participation at the UNCCC in Bali. The meeting ended with the announcement of participation in Climate Change and Oceans at the 4th Global Conference on Oceans, Coasts and Islands, April 7~11, 2007, Hanoi, Vietnam, as well as in the next working group workshop at the 5th APPF, November 10~14, 2008, Wellington, New Zealand. 



1. Group photograph of the APPA working group members at the 3rd workshop at Novotel Benoa, Bali.
2. APPA president Prof. SM Phang and APPA secretary Prof. JA Lee preside over APPA working group meeting at the 3rd workshop in Bali.
3. APPA working group members having a discussion on "Algae and Global warming" at the 3rd Workshop on Asian Network for Using Algae as a CO₂ Sink, at Novotel Benoa, Bali.
4. APPA working group members engaged in discussion at the lunch meeting on the beach at the Novotel Benoa, Bali.

**Members of Working Group on Asian Network for Using Algae as a CO₂ Sink as of October 2008
(Alphabetical in country)**

President of Asian Pacific Phycological Association

Prof. Siew-Moi Phang

Institute of Biological Sciences
University of Malaya
Kuala Lumpur 50603, MALAYSIA
phang@um.edu.my

Australia

Prof. John Beardall

School of Biological Sciences
Monash University
Clayton 3800, Victoria 380, AUSTRALIA
john.beardall@sci.monash.edu.au

China

Prof. Zhengyu Hu

Institute of Hydrobiology
Chinese Academy of Sciences, CAS
Wuhan 430072, CHINA
huzy@ihb.ac.cn

Hong-Kong

Prof. Put O. Ang, Jr

Environmental Science Programme
Department of Biology
The Chinese University of Hong Kong
Shatin, N.T., Hong Kong SAR, CHINA
put-ang@cuhk.edu.hk

India

Prof. Dinabandhu Sahoo

Marine Biotechnology Laboratory
Department of Botany
University of Delhi
Delhi. 110007, INDIA
sbsahoo@hotmail.com

Indonesia

Prof. Grevo S. Gerung

Faculty of Fisheries and Marine Science
Jl. Kampus Bahu,
Manado 95115, INDONESIA
ggrevo@hotmail.com

Japan

Prof. Hiroshi Kawai

Kobe University Research Center for Inland Seas
Rokkodai, Nada, Kobe 657-850, JAPAN
kawai@kobe-u.ac.jp

Korea

Prof. Sung Min Boo

School of Bioscience & Biotechnology
Chungnam National University
Taejeon 305-764, KOREA
smboo@cnu.ac.kr

Prof. Ik Kyo Chung

Division of Earth Environmental System
Pusan National University
Pusan 609-735, KOREA
ikchung@pusan.ac.kr

Prof. Jin Ae Lee

School of Environmental Science & Engineering
Inje University
Gimhae 621-749, KOREA
envjal@inje.ac.kr

Malaysia

Prof. Siew-Moi Phang

Institute of Biological Sciences
University of Malaya,
Kuala Lumpur 50603, MALAYSIA
phang@um.edu.my

Prof. Charles Santhanaju Vairappan

Laboratory of Marine Natural Products Chemistry
Borneo Marine Research Institute
University of Malaysia Sabah
Kota Kinabalu, Sabah 88999, MALAYSIA
csv@um.edu.my

New Zealand

Dr. Wendy A. Nelson

National Centre for Aquatic Biodiversity & Biosecurity
NIWA, Wellington
Private Bag 14-901, Wellington 6241, NEW ZEALAND
w.nelson@niwa.co.nz

Philippines

Prof. Danilo Largo

Department of Biology
University of San Carlos
Cebu City 6000, PHILIPPINES
largodb@yahoo.com

Thailand

Prof. Yuwadee Peerapornpisal

Applied Algal Research Laboratory
Department of Biology, Faculty of Science
Chiang Mai University
Chiang Mai, 50200, THAILAND
scboi017@chiangmai.ac.th

Vietnam

Prof. Dang Diem Hong

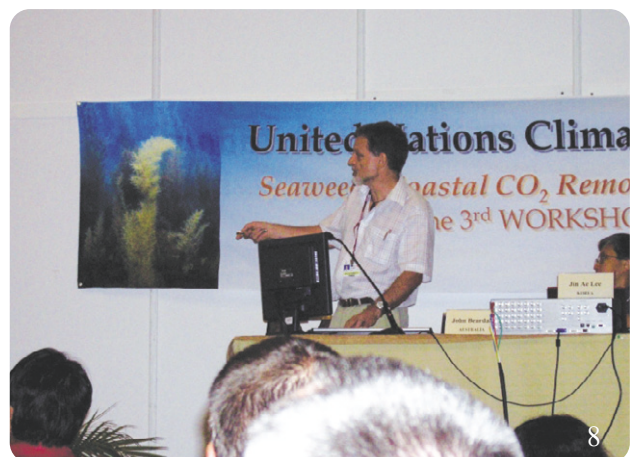
Algal Biotechnology Department
Institute of Biotechnology
Vietnamese Academy of Science & Technology (VAST)
18 Hoang Quoc Viet, Cau Giay
Hanoi 10000, VIETNAM
ddhong@hv.vnn.vn

The Side Event of the Asian Network for Using Algae as a CO₂ Sink as Part of UNCCC

The APPA's Asian Network for Using Algae as a CO₂ Sink, and the Marine Research Institute at Pusan National University, Korea, held a meeting entitled "Seaweed: Coastal CO₂ Removal Belt in Korea & The Asian Network for Using Algae as a CO₂ Sink", at the Bio-fuel session, the Grand Hyatt, Bali, Indonesia, in the form of a United Nations Climate Change Conference (UNCCC) side event of the 13th session of the Conference of the Parties (COP 13) on the 7th of December 2007. The meeting was convened by Professors Ik Kyo Chung (side event organizer), Grevo S. Gerung (local organizer)

and Jin Ae Lee (secretary, The Asian Network for Using Algae as a CO₂ Sink). The 12 members of the APPA working group of the Asian Network as well as professionals, government officials and NGOs were in attendance.

To open the meeting, Professor Ik Kyo Chung delivered a speech entitled "Seaweed: Coastal CO₂ Removal Belt in Korea". Professor John Beardall presented his paper, "Review on CO₂ Sequestration Capacity of Microalgae," arguing that more efficient cultivation methods could greatly boost production in



5. Participants in the 2007 UNCCC in Bali at the convention center, with Balinese batik sarungs displayed.

6. Members pose outside the conference venue after the official registration for the UNCCC followed by a visit to the exhibition stands.

7. APPA president Prof. SM Phang addressing the opening session of the side event, "Seaweed coastal CO₂ removal belt in Korea and the Asian network for using algae as a CO₂ sink".

8. Prof. J Beardall giving a presentation on "Using marine algae for carbon sequestration: a critical appraisal".

nations with long coastlines. Professor Grevo S. Gerung gave a presentation on “Red Algal Pulp and Bioenergy” on behalf of the paper company Pegasus International.

Each of the national reports of the working group members was presented, followed by questions and answers concerning the wording of seaweed CO₂ sequestration and the energy cost of the process of removing water from seaweeds. Also discussed were the use of freshwater weeds as well as seaweeds, and seaweed utilization as bio-fuel.

The participants ended the meeting and its fruitful discussion with drinks in the garden, and took the optional field trip to Lombok Island, Indonesia, hosted by Pegasus International Inc. Mr. Hack Churl You, CEO of Pegasus, conducted a tour of several seaweed farms.

The following is a list of the professionals who made comments on the main issue of the side event, ‘CO₂ sequestration capacity of seaweeds.’

- I Nyoman Suryadiputra from Indonesia, Technical Director of Wetlands International Indonesia Program
- Jim Sinner from New Zealand, a representative of the Cawthron Institute
- Jin Hwan Hwang from Korea, Professor of the Department of Civil & Environmental System Engineering, Dongguk University
- Johannes Ebeling from the United Kingdom, Senior Consultant of Eco Securities
- Paul Wright from the United Kingdom, of the United Mission to Nepal (INGO)
- Taka Hirashi from Japan, Co-chair of the Bureau of the Task Force on National Greenhouse Gas Inventories in the IPCC 



9. Group photograph of the APPA working group members after the discussion at the UNCCC side event in Bali.

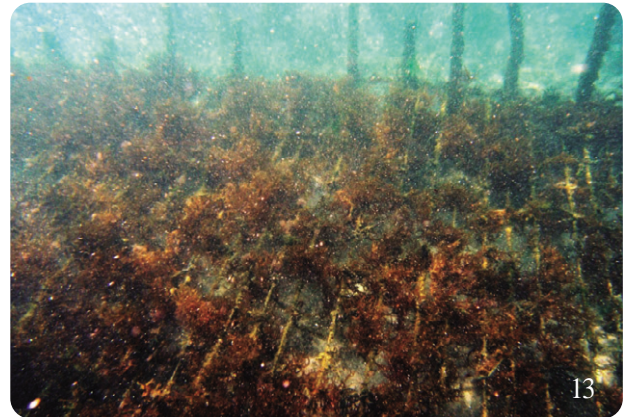
10. Reporters from Jeju MBC, a Korean broadcasting company, taking pictures of the beautiful underwater plants on Penida Island off Bali, for a special report on algae and global warming.

11. *Ulva*, *Codium* and *Gracilaria* are commonly found on Penida Island.





12. Local Indonesian man drying *Eucheuma cottonii*, which grows large enough to be harvested in 3 months.



13. Underwater cultivation of *Eucheuma cottonii*, tied to nets pegged down to the seabed of a Pegasus farm on Lombok Island.

The Global Ocean Forum & the Asian Network for Using Algae as a CO₂ Sink

The 4th Global Conference on Oceans, Coasts, and Islands, “Advancing Ecosystem Management and Integrated Coastal and Ocean Management in the Context of Climate Change” took place on April 7~11, 2008 in Hanoi, Vietnam. The conference was attended by 439 participants from 62 countries, and brought together members of governments, regional organizations, UN agencies,

academia, non-governmental organizations, donor agencies, and industry representatives.

The APPA’s Asian Network for Using Algae as a CO₂ Sink hosted one of concurrent discussion sessions, entitled “Practical Solutions to Climate Change Adaptation”. The session was organized by Prof. Ik Kyo Chung, Pusan National University, Korea (Chair), Dr.




14. The 4th Global Conference on Oceans, Coasts, and Islands, held at the Melia Hanoi Hotel in Hanoi, Vietnam, April 7~11, 2008.



15. The APPA’s Asian Network for Using Algae as a CO₂ Sink hosting a concurrent discussion session entitled “Practical Solutions to Climate Change Adaptation”, chaired by Prof. Ik Kyo Chung.

David Zilkoski, National Geodetic Survey, NOAA, Dr. Edward Cyr, National Marine Fisheries Service, Marine Ecosystems Division, NOAA, Dr. Le Trong Binh, Research Institute for Tourism Development (MCIS, Vietnam) and Dr. James McGoodwin, University of Colorado.

The purpose of the session was to focus on practical means for coping with climate change in the coastal region, as well as to discuss immediate and practical measures to adapt to and to mitigate against global warming. Dr. Gunnar Kullenberg had a briefing of the Working Group on Climate, Oceans and Security, which was followed by the panel discussion of the invited speakers.

To open the discussion, Professor Ik Kyo Chung delivered a speech on “Seaweed Solutions”, followed by a talk on Integrated Coastal Management (ICM) in the Context of Climate Change and Yeosu EXPO 2012, by Mr. Gi-Jun Han, Ministry of Land, Transport, and Maritime Affairs, Republic of Korea. The invited speakers were Dr. Jana Tjahjana Anggadiredja (Indonesia), Dr. Dang Diem Hong (Vietnam), Dr. Paul Epstein (USA), Dr. Gotthilf Hempel (Germany), Dr. Jin-Hwan Hwang (Korea), Dr. Gunner Kullenberg (France), Mr. Aqqaluk Lynge (Greenland), Dr. Siew-Moi Phang (Malaysia), Ambassador Tuiloma Neroni Slade (Samoa), Dr. David B. Zilkoski (USA), and Jin Ae Lee (Korea). 




16. Working group members of the Asian Network for Using Algae as a CO₂ Sink having a panel discussion on the practical measures to adapt to and mitigate against global warming.



17. Professor Dang Diem Hong hosting a lab tour in the Algal Biotechnology Department, Institute of Biotechnology, Vietnamese Academy of Science and Technology (VAST), during the forum.

The 11th International Conference on Applied Phycology

The 11th International Conference on Applied Phycology was held on June 21~27 at the National University of Ireland, Galway, under the auspices of the International Society of Applied Phycology. The preliminary result of the ongoing project of the Working Group ‘Using marine algae for carbon removal: a critical appraisal’ presented by Ik Kyo Chung, which was prepared by Ik Kyo

Chung, John Beardall, Smita Mehta, Dinabandhu Sahoo and Slobodanka. The Working Group members of the Asian Network for Using Algae as a CO₂ Sink, Siew-Moi Phang (Malaysia), John Beardall (Australia), Sung Min Boo (Korea), and Yuwadee Peerapornpisal (Thailand), participated in the conference. 

The media and the Asian Network for Using Algae as a CO₂ Sink



18. Prof. IK Chung, Pusan National University and Dr. JY Lee, Ministry of Marine Affairs & Fisheries, giving a press interview on the topic, "Seaweeds can now control global warming - Group touts seaweed as warming weapon", with Joseph Coleman, a writer from the Associated Press (Grand Hyatt, Bali, Indonesia, on the 7th of December 2007).

CRIENGLISH.COM **WEBCAST**

Local Services: Beijing | London | Sydney | Washington | Beyond Beijing

Seaweed Could Be Weapon against Global Warming

2007-12-09 15:13:58 CRIENGLISH.COM

Click to Listen

High-level economic officials from the United States are now here in China meeting with their Chinese counterparts. What is the main focus of the talks? And can any headway be made on the long-standing disagreements?

- US Secretary of Commerce Optimistic about China-US Economic Dialogue
- Putin Support Mashkov as President Candidate
- Nobel Prize Awarded in Sweden

Scientists at the Bali climate conference say seaweeds could be used as a potent weapon against global warming, sucking damaging carbon dioxide out of the atmosphere at even greater rates than rain forests.

Chung Ik-kyo, a South Korean environmental scientist, is one of those pioneering the project.

Just like a land plant, seaweed and sea grass can take up carbon dioxide through photosynthesis and then they make it harmless, so the scientists say. But they are worried about the ocean, which is vast. Because we have a very limited space on land, so we have to turn to the ocean to see what seaweed and sea grass can do for climate change as a mitigation method."

The seaweed research, backed by scientists in 12 countries, is part of a broad effort to calculate how much carbon is being absorbed from the atmosphere by plants, and to find ways of reforestation in order to increase that amount.

Carbon dioxide is one of the so-called greenhouse gases that trap solar heat in the atmosphere and which are directly linked to global warming.

msnbc

Returning Today Show! Nightly News! Dateline! Meet the Press! MSNBC TV

Vital signs of a warming world

U.S. news Environment Climate Change

Categories

Seaweed solution to warming? Not so fast

It's great at absorbing carbon, but it also releases it pretty quickly

An Indonesian woman brings in harvested seaweed from her farm off the beach in Nusa Dua, Bali on Dec. 6.

View related photos

U.S. News
Crime & Courts
Life
Security
Education
Environment
Military
Faith
Living
Race & Ethnicity

PANTAGRAPH.COM

Scientists at conference tout seaweed as global warming solution

Sunday, December 9, 2007 8:06 PM CST

By Joseph Coleman
Associated Press Writer

BALI, Indonesia -- Slimy, green and unsightly, seaweed and algae are among the humblest of plants.

A group of scientists at a climate conference in Bali say they could also be a potent weapon against global warming, capable of sucking damaging carbon dioxide out of the atmosphere at rates comparable to the mightiest rain forests.

"The ocean's role is neglected because we can't see the vegetation," said Chung Ik-kyo, a South Korean environmental scientist. "But under the sea, there is a lot of seaweed and sea grass that can take up carbon dioxide."

Indonesian seaweed farmers sort the harvest from their farms off the beach in Nusa Dua, Bali, Indonesia, Thursday Dec. 6, 2007. Slimy, green and unsightly, seaweed and algae are among the humblest plants on earth, but a group of scientists at a climate conference in Bali say they could also be a potent weapon against global warming, sucking damaging carbon dioxide out of the atmosphere at greater rates than the mightiest rain forests. (AP Photo/Ed Wray)

USA TODAY

Scientists: Seaweed could stem warming

By Joseph Coleman, Associated Press Writer

BALI, Indonesia — Slimy, green and unsightly, seaweed and algae are among the humblest of plants.

A group of scientists at a climate conference in Bali say they could also be a potent weapon against global warming, capable of sucking damaging carbon dioxide out of the atmosphere at rates comparable to the mightiest rain forests.

"The ocean's role is neglected because we can't see the vegetation," said Chung Ik-kyo, a South Korean environmental scientist. "But under the sea, there is a lot of seaweed and sea grass that can take up carbon dioxide."

UPCOMING EVENTS

The 5th Asian Pacific Phycological Forum

10 -14 November, 2008
Wellington, New Zealand

Scheduled Mini-symposia

Acidification and global climate change

Convenors: John Beardall (Australia)
Catriona Hurd (New Zealand)

Speakers: John Beardall (Australia), Cliff Law
(New Zealand), Ik Kyo Chung (Korea),
Chris Hepburn (New Zealand)

Applied phycology

Convenor: Siew-Moi Phang (Malaysia)
Phaik-Eem Lim (Malaysia)

Speakers: Rupert Craggs (New Zealand), Grevo
Gerung (Indonesia) & Hack-Churl You
(Korea), Makoto Watanabe (Japan),
Hui-Yin Yeong (Malaysia)

Proposed Workshops:

Algal Culture Collections
Consortium of Marine Algae Taxonomy for the
South-east Asia Region
Bangiales Group Meeting
Working Group Meeting of Asian Network for
Using Algae as a CO₂ Sink

<http://www.appf2008.com>

SCS (THE SOUTH CHINA SEA) 2008

25-29 November 2008
Kuantan, Malaysia

Sustaining Ocean Productivities, Maritime
Communities and the Climate

Chairperson: Prof. Siew-Moi Phang
Secretary: Dr. Phaik Eem Lim

<http://ioes.um.edu.my/scs2008/scs2008.html>

United Nations Climate Change Conference

1-12 December, 2008
Poznan, Republic of Poland

COP 14 (The 14th Conference of the Parties to the
United Nations Framework Convention on
Climate Change (UNFCCC)
The 4th Session of the Meeting of the Parties to the
Kyoto Protocol

Proposed Side Event & Exhibition

Greenhouse Gas Emissions Reduction using Seaweeds
Marine Research Institute, Pusan National University
Pegasus International Inc.

Organizer : Ik Kyo Chung
(Pusan National University, Korea)

http://unfccc.int/meetings/cop_14/items/4481.php

World Ocean Conference

11-15 May, 2009
Manado, Indonesia

International Ocean Science, Technology, and Policy
Symposium 2009

Sessions 32. Asian Network for Using Algae as a
CO₂ Sink : Seaweed Industry in the Context of
Climate Change

Ik Kyo Chung (Chairman)
Grevo Gerung (Local organizer)

http://www.woc2009.org/symp_ses.php#32

CONTACT

Prof. Siew-Moi Phang

President

Asian Pacific Phycological Association
Institute of Biological Sciences
University of Malaya
Kuala Lumpur 50603, MALAYSIA
phang@um.edu.my

Prof. Jin Ae Lee

Editor & Secretary

The Asian Network for Using Algae as a CO₂ Sink
Asian Pacific Phycological Association
School of Environmental Science & Engineering
Inje University, Gimhae 621-749, KOREA
envjal@inje.ac.kr