

# APEC-VC Seoul Workshop 2016

October 19-20th, 2016

Hosted by  Ministry of Environment Organized by  **KEITI**

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# Progress Report of APEC-VC Korea

APEC-VC Seoul Workshop 2016

APEC-VC Korea / APEC-VC Secretariat

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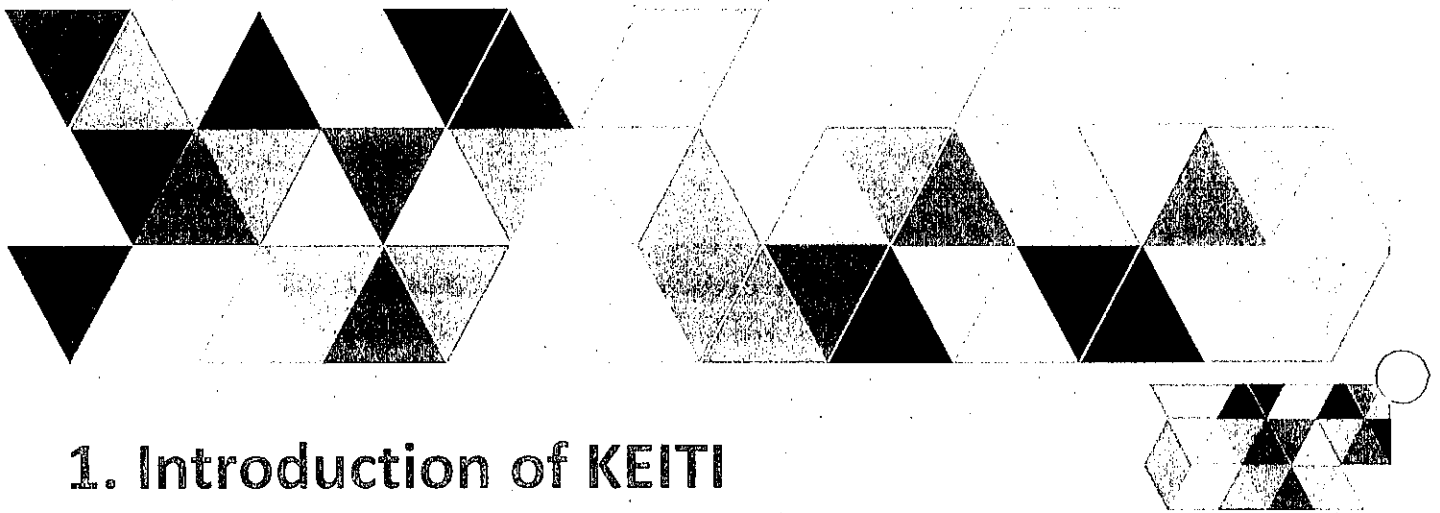
**IV**

**Proposal for Future Activities**




# Introduction

1. KEITI (Korea Environmental Industry and Technology Institute)
2. APEC Virtual Center




## 1. Introduction of KEITI

### Key Functions and Programs




**Environmental Technology R&D**

- Environmental Technology (R&D)
- Planning, Evaluation, Management



**Train Professionals and Provide Information**

- Train environmental Industry · Technical professional and Create Jobs
- Collect Environmental Industry, · Technical Information, Utilization and Education, PR




**Certification Evaluation**

- Operate Environmental Mark, Carbon Achievement Carbon score label
- Certification · verification environmental technology and certification of green technology




**Develop Environmental Industry**

- Develop environmental industry and support expansion to overseas market
- Environment loan, Eco-friendly creative economy center



**Distribute Eco-friendly Business Models**

- Promote green product life
- Promote eco-friendly management and low carbon management by company



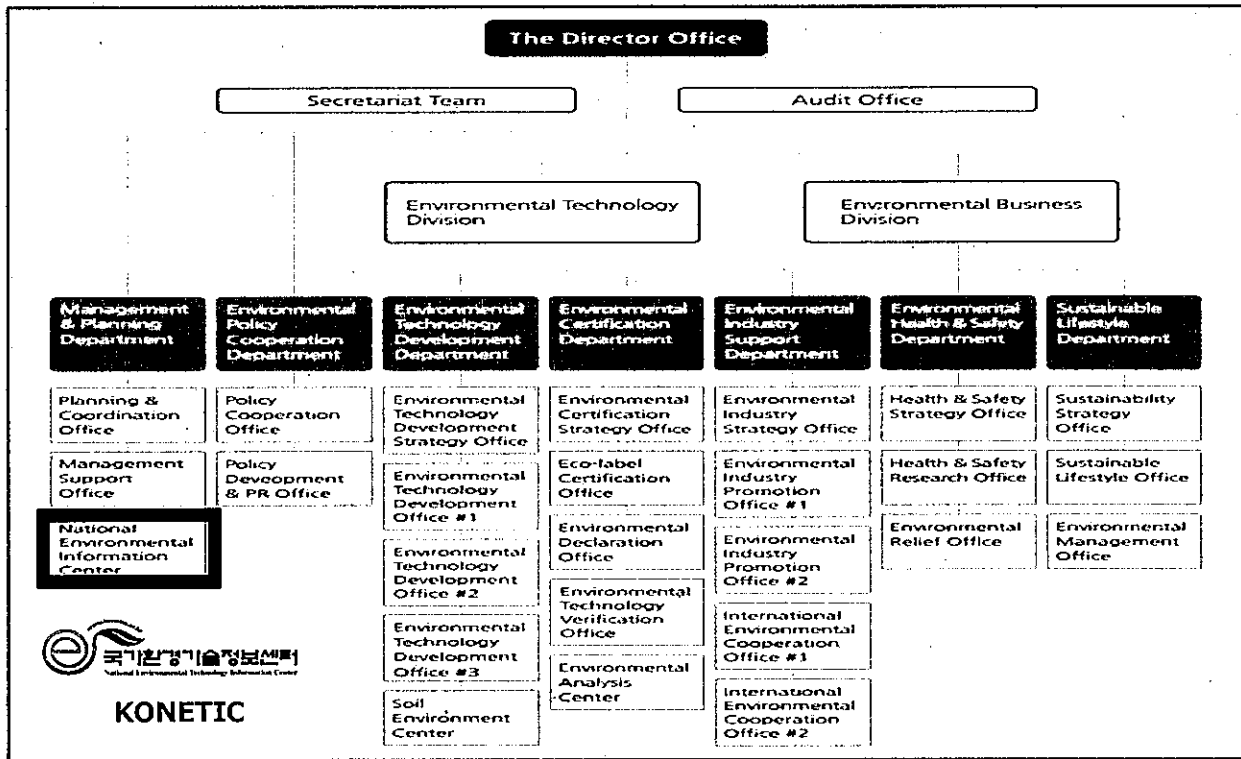
**Support Environmental Health · Safety Management**

- Relieve environmental damage and manage chemical materials
- Manage eco-friendly product, support environmental health · safety for the vulnerable social group

# 1-1. Introduction of KEITI



## KONETIC and APEC- VC Secretariat within KEITI



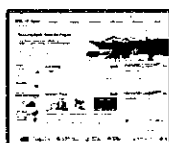
# 2. Introduction of APEC-VC



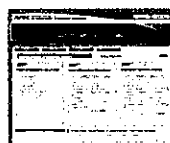
- Approved as official APEC projects at the APEC conference in Osaka, 1995
- Composed of 12 member economies in the APEC region

No.	Economies (Year of Establishment)	No.	Economies (Year of Establishment)
1	Japan (1997)	7	The Philippines (2000)
2	Australia (1998)	8	Thailand (2001)
3	Taiwan (1998)	9	Indonesia (2001)
4	New Zealand (1999)	10	Chile (2001)
5	China (1999)	11	Malaysia (2001)
6	Vietnam (2000)	12	Korea (2003)

- Member economies opened VC websites creating a global network



VC Korea



VC Japan



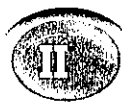
VC China



VC Malaysia

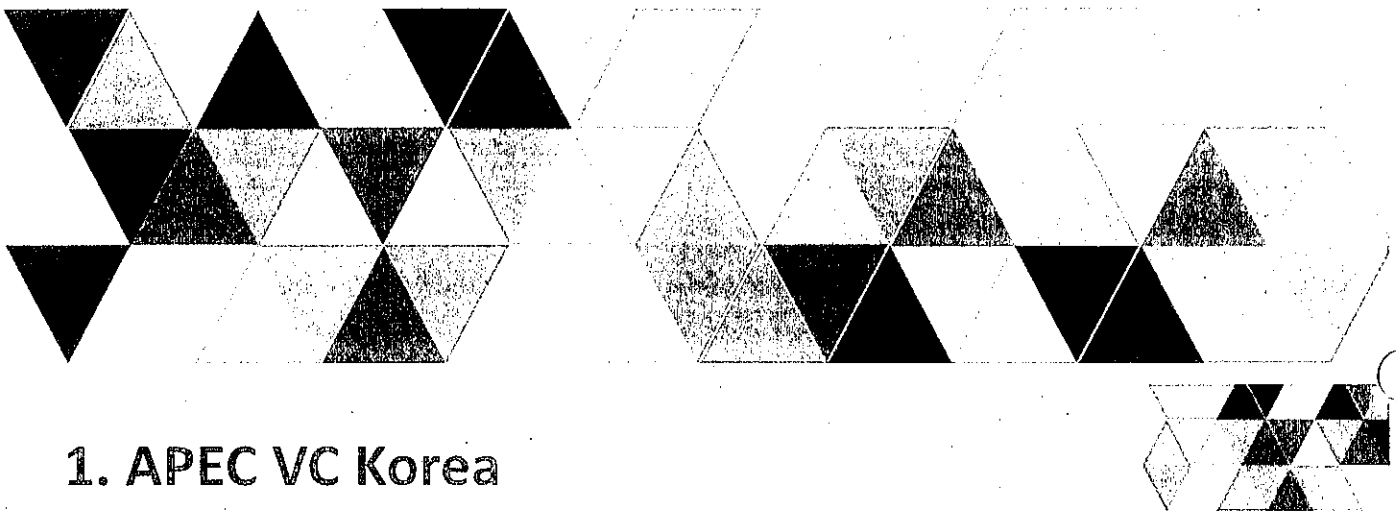


VC Chile



# APEC VC Korea and the APEC-VC Secretariat

1. APEC VC Korea
2. Activities of the APEC VC Secretariat



## 1. APEC VC Korea

### APEC VC Korea Website (www.apec-vc.or.kr)

### APEC VC Korea Database

- Established more than 23,000 DB on the website

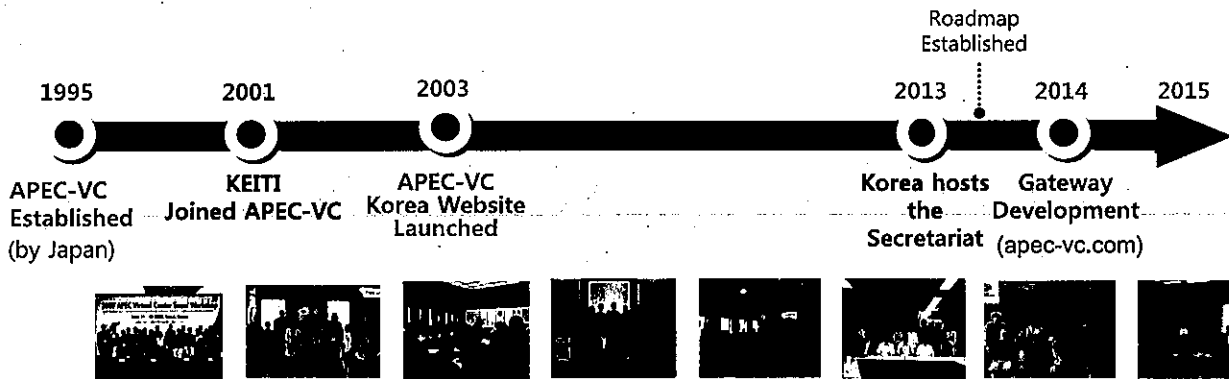
2002-2009	2010	2011	2012	2013	2014	2015	2016 (As of Oct 2016)
11,918	1,928	2,020	1,827	2,092	1,859	1,374	901

## 2. APEC VC Secretariat



Exchange of environmental technologies to assist SMEs and developing economies

<b>Project</b>	<b>APEC Virtual Center for Environmental Technology Exchange</b>
<b>Period</b>	<b>2013~2017 (Endorsed by PPSTI)</b>
<b>Economy</b>	<b>Republic of Korea (lead Economy)</b>
<b>Co-Sponsor</b>	<b>Japan, Australia, Chile, Philippines, Malaysia, Chinese Taipei, Vietnam</b>



### 2-1. APEC VC Road Map for 2013-17



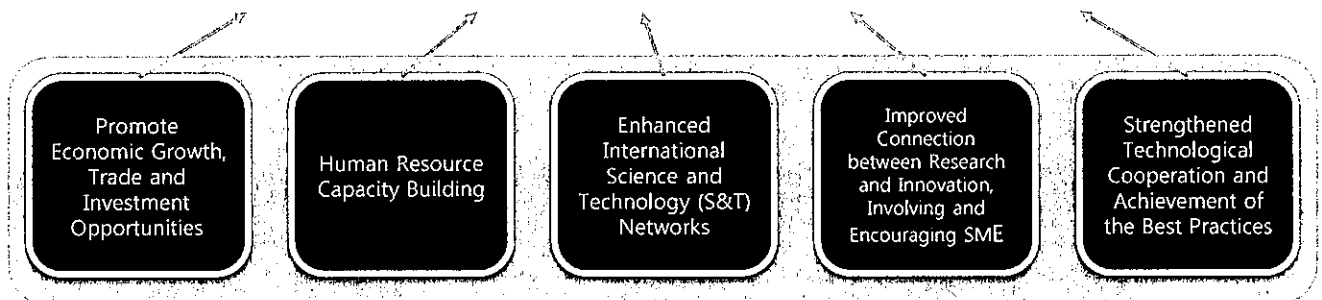
#### APEC-VC Roadmap for 2013-2017

**VISION**

Building an environmental technology exchange network to bridge the gap between developing and developed economies

**GOAL**

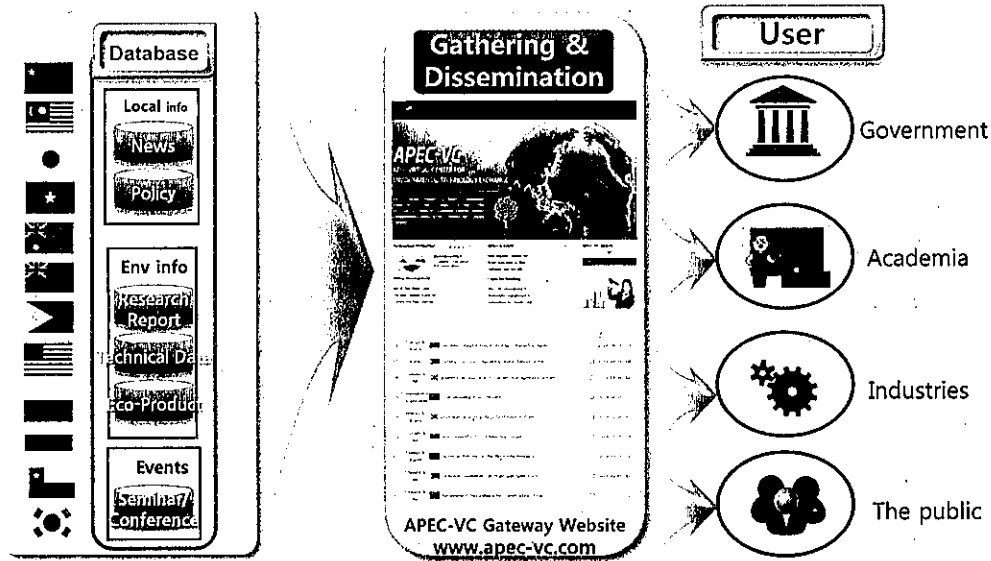
On-offline exchange of environmental technologies to assist SMEs and developing economies



## 2-2. APEC VC Gateway Project('13-'14)



### APEC-VC Single Entry Point : VC Gateway



## 2-3. Activities of APEC-VC Korea (APEC-VC Secretariat)



### 1. APEC VC Workshops

- ❖ Held once a year in member economies (15 times, 1999-2016)
- ❖ Exchange information on environmental technology
- ❖ Report on each VC economy's activities
- ❖ Discuss about the future plans and directions



Country	2009	2010	2012	2013	2014	2015	2016
Year	Australia	Japan	Japan	Korea	Malaysia	Korea	Korea

### 2. Participation in the APEC-PPSTI

- ❖ Participated in PPSTI meeting once a year from 2012
  - ❖ 2012 IST-WG : Presentation on Extension of APEC-VC Project
  - ❖ 2013 PPSTI : Presentation on the Plan for APEC-VC Gateway Establishment
    - ✓ Project approved in 2013
  - ❖ 2014 PPSTI : Presentation on the Plan for Further Facilitation of APEC-VC
  - ❖ 2015 PPSTI : Presentation on the Proposal for Research Study on Appropriate Technology
  - ❖ 2016 PSSTI : Presentation on APEC-VC activities and establishing VC Global Network







## '15-'16 Activities

1. APEC VC Korea Website
2. APEC PPSTI-8



### 1. APEC-VC Korea Website

- ❖ **APEC-VC Korea Website : uploaded 1,516 DB** (As of October 2016)
  - Annual goal: 2,500 per year
  - Research Reports, Technology description, Project information
  - Interviews of domestic environmental firms
  - Domestic, International News articles
  - Announcements, events information

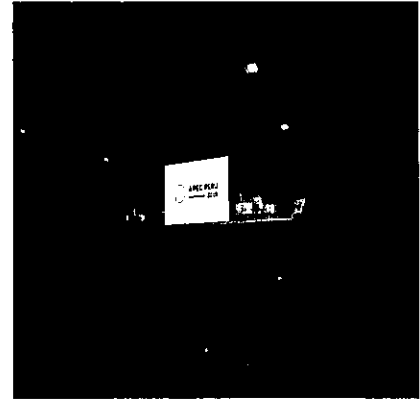


## 2. APEC PPSTI-8



### ❖ Attended PPSTI-8(August 15-18, 2016/ Lima, Peru)

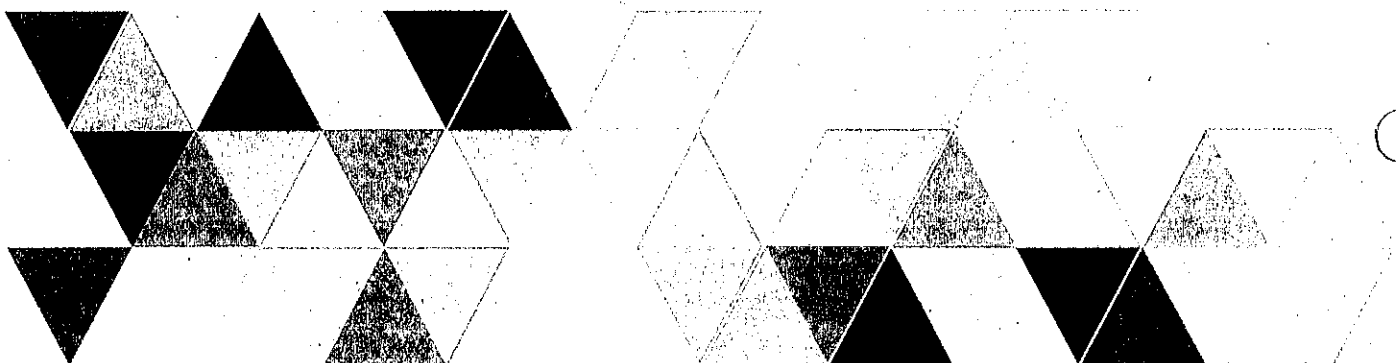
- Presented about the progress of the APEC-VC project in the PPSTI-8 Sub Group C "Connectivity"
- Commended by the Chair of the Subgroup C during the General Session that APEC-VC has 'been working with APEC for a long time, and has a good cooperative network.'



#### IV

### Proposal for Future Activities

1. APEC-VC Global Network
2. APEC-VC Gateway
3. APEC-VC Gateway Database



# 1. APEC-VC Global Network



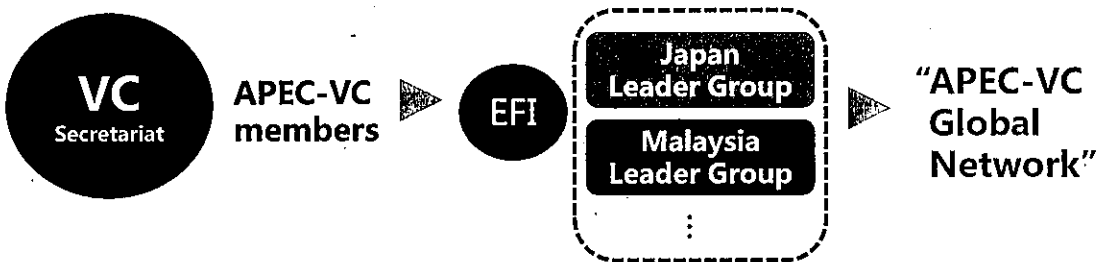
## APEC-VC Workshop 2015 in Seoul(Oct 28-29, 2015)

- ❖ Discussion on creating “APEC-VC Global Network”



### Main Concept

- ❖ Creating a **global network of experts** in the field of environmental technology
- ❖ Selecting “**Environmental Flagship Issues(EFIs)**” as a common topic
- ❖ Establishing **Leader Groups** in each member economies in order to lead the network of experts and professionals in their research and discussion on EFIs
- ❖ Promoting **interaction** and **exchange of ideas** among global experts on EFIs through the APEC-VC Gateway website(on-line) and dialogue(offline), such as APEC-VC EFI Symposium  
→ **Enhancing Regional Science and Technology Connectivity**



# 2. APEC-VC Gateway



## APEC-VC Gateway

- ❖ Although created with the purpose of gathering information of all VC website, it remains inactive
- ❖ There is no agreement among the member economies regarding the operation of the Gateway Website
- ❖ In order to establish a network of professionals and experts offline, we need to strengthen the online exchange first
- ❖ Based on the active online exchange that is fostered by the agreement among member economies, each economy may be able to appeal for **government/organization funding and further activities**

### Proposal for an Official Agreement to Operate the APEC-VC Gateway

- ❖ EX) Signing an MOU for the establishment of databases on the APEC-VC Gateway
- ❖ Agreement that specifies the number of DBs created by each economy annually, categories of DB etc.
- ❖ Creation of accounts and Bulletin Boards of each economy
- ❖ Develop it into a Social Networking Site in the future in relation to the APEC-VC Global Network

# 3. APEC-VC Gateway Database

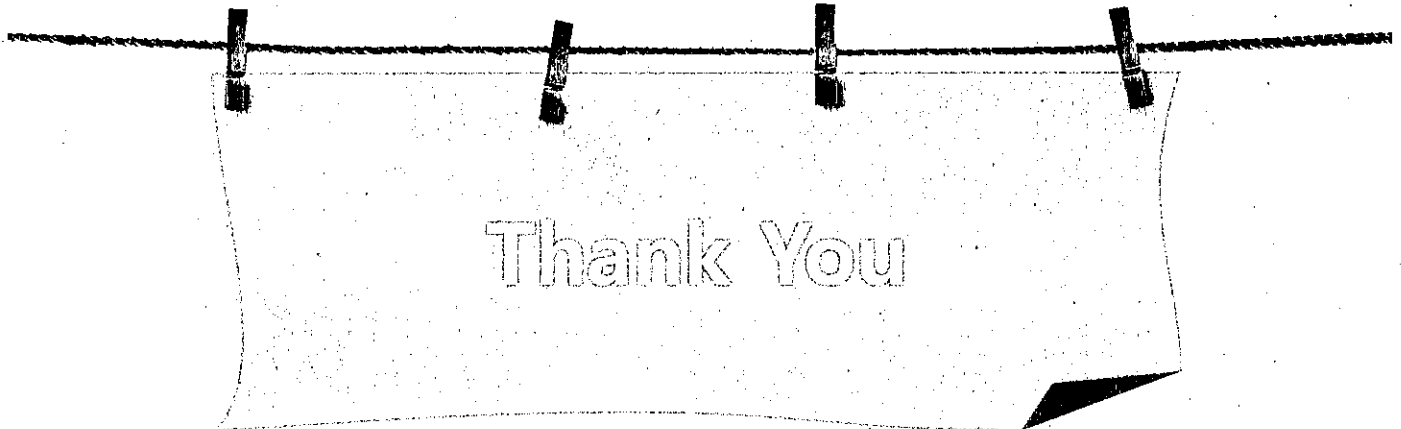


Categories	Goal No.	Remarks
<b>News on Environment</b>	36	3 per month
<b>Environmental Market Information</b> (Published articles, policy papers, government press releases related to the environmental market)	12	1 per month
<b>Environmental Technology Information</b> (Research outcomes, academic journals, technological developments etc.)	30	30 per year
<b>Environmental Firms and Products</b> (Introduction of firms in the field of environmental industry or products)	35	30 per year
<b>Sub Total Per Economy</b>	<b>113</b>	
<b>Total (9 Economies)</b>		<b>1000 (appx.) per year</b>

## INFORMATION SHARING

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- Research & Development
  - R&D Database
- Policy Development
  - Laws & Regulations
- Technology Promotion
  - Eco goods, Green Technology
- Capacity Building
  - Projects and Initiatives, Training Programs, Seminars



# **Project Report of the APEC Virtual Center Japan**

**October 19, 2016**



**Supporting Committee for APEC Virtual  
Center for Environmental Technology  
Exchange, Japan**

**The APEC Osaka Meeting was held in 1995.  
Taking this opportunity, APEC Virtual Center  
(or APEC-VC) was established by consensus  
from municipalities, businesses and academic  
circles in the Kansai Region and has been  
conducting various activities for these 21 years.  
APEC-VC was established in 12 economies  
for these years.**

**We made efforts to promote the exchange  
among APEC-VCs by sharing information on  
environmental technologies. Specifically, we  
set the common classification system and  
developed the common search engine and  
common content.**

**The APEC-VC Project entered into the 2<sup>nd</sup> stage in 2012. The operator of this project was shifted to VC Korea from VC Japan.**

**Following the APEC organizational change, the working group in charge of this project was shifted to APEC Policy Partnership on Science, Technology and Innovation (PPSTI) from APEC Industrial Science and Technology Working Group (IST-WG).**

**As for APEC-VC Japan, the number of companies supporting APEC-VC Japan is on the decline, which causes us to make our activities limited and smaller.**

**As the result, information provided by us is not sufficient enough for our member companies, related organizations and etc.**

**We are situated in a position where it is difficult for us to continue our activities**

## **1. Holding Seoul Workshop in 2015**

**Three representatives from VC Japan attended the workshop in Seoul.**

**As the workshop, all participants discussed the way of conducting a project regarding "the establishment of network to enhance the partnerships with environment-related businesses, universities, research institutes and governmental organizations in the Asia - Pacific region" proposed by the APEC-VC Secretariat.**



## **2. Project result of VC Japan**

**The mandate for the APEC-VC Project as one of APEC official projects expires at the end of Dec., 2017.**

**Therefore, VC Japan needs to maintain the VC Japan secretariat under this mandate as we promised this to VC Korea. However, we currently have only two businesses supporting our activities.**

**As our activities are covered by their member fees, the operation cost for VC Japan is remarkably decreased, which makes us difficult to continue conducting our activities.**

**We integrated our activities into three pillars:**

- 1. Maintaining the APEC-VC Japan website**
- 2. Attending the workshop and supporting the project plan**
- 3. Conducting projects in cooperation with other organizations**

## **2-1 APEC-VC Japan's enhancing dissemination of information**

**As we did in 2015, we made efforts to make good use of APEC-VC Gateway website developed by VC Korea and developed content meeting the environmental policy in Japan and the needs in Japan and abroad to upload it in the website, with a purpose of enriching content unique to VC Japan's website**

**"Treating sewage through sulfate-reduction/sulfur-oxidation and denitrification"**

### **Noteworthy Keyword**

Treating sewage through sulfate-reduction/sulfur-oxidation and denitrification

Putting into practice the removal of nitrogenous compounds and phosphorus from sewage includes not only biological phosphorus elimination via biological nitrification/denitrification and anaerobic-aerobic process, but also simultaneously removing combinations of nitrogenous compounds and phosphorus via the "anaerobic-anoxic-oxic process".

## **2-2 Conducting projects in cooperation with other organizations**

**As a part of APEC-VC's promotional activities, we held a seminar in cooperation with Society of Environmental Conservation Engineering and other as listed in the below:**

**(1) 15<sup>th</sup> Annual meeting of Society of Environmental Conservation Engineering**

**Date : 2015.9.11 Venue : Osaka Sangyo University**

**(2) 11<sup>th</sup> Seminar regarding groundwater usage technology**

**Date : 2015.10.22 Venue: No. 2 Osaka Ekimae Building**



### **3. Ministry of Economy, Trade and Industry**

**We reported to METI : what we discussed at the Seoul Workshop, how the project is conducted and the current situation where VC Japan faces**

**(1) Regarding the new project plan mentioned in the above, we gave our reply to the APEC-VC Secretariat : "VC Japan agrees to this proposal and has an intention to cooperate with the Secretariat as much as possible in working with experts from the industry-government-academia group."**

**(2) A possibility of getting funds from APEC Fund has recently been difficult.**

**(3) METI says that she cannot support VC Japan financially but offers support as much as possible to us except financial support.**

# **Thank You Very Much!**

**APEC-VC JAPAN**



# 2016 APEC-VC SEOUL WORKSHOP

October 19-20th

Nguyen Manh Quan

Director of Center for Information Analysis

National Agency for Science & Technology Information

APEC Virtual Center for Environmental Technology Exchange

APEC VC activities related environmental technology  
information exchange in Viet Nam

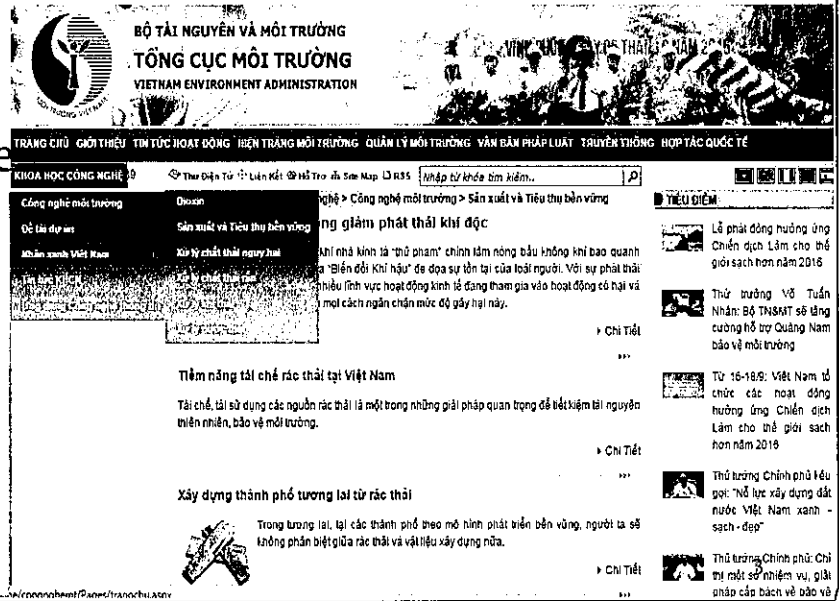
## **Government:**

- Vietnam Environmental Administration/Ministry of Natural Resources and Environment
- National Agency for Science & Technology Information/Ministry of Science and Technology

# APEC Virtual Center for Environmental Technology Exchange

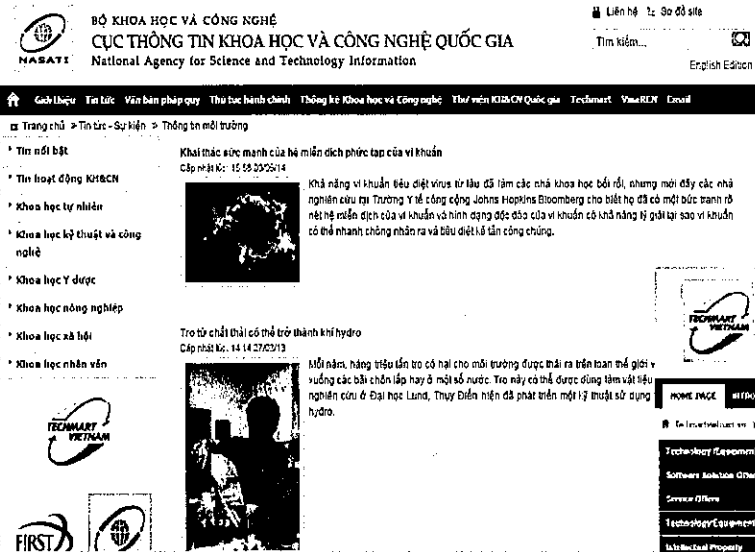
## Vietnam Environmental Administration

- Law and regulation;
- Sustainable production and consumption;
- Hazard waste treatment;
- Solid/air/water waste treatment;...



# APEC Virtual Center for Environmental Technology Exchange

## National Agency for Science & Technology Information



- New Environmental technologies/services
- Science & Technology Information Networks: ~ 100 centers,



- Environmental technologies/services offers/demands

## APEC Virtual Center for Environmental Technology Exchange

- R&D institutions: Institute of Environmental Technology/ Vietnam Academy for Science and Technology
- R&D activities
- Environmental Technology Application
- Products

## APEC Virtual Center for Environmental Technology Exchange

- R&D institutions: Vietnam Cleaner Production Center/ Hanoi University of Technology

Provide scientific and technological services on Resource Efficient and Cleaner Production, Climate Change Adaptation



## APEC Virtual Center for Environmental Technology Exchange

- Environmental Associations:  
Vietnam Association for Conservation of Nature and Environment

VIETNAM ASSOCIATION FOR CONSERVATION OF NATURE AND ENVIRONMENT  
Hội Bảo vệ Thiên nhiên và Môi trường Việt Nam  
*Environment with community*

HOME | INTRODUCTION | VACNE ACTIVITIES | HERITAGE TREES | ENVIRONMENTAL NEWS | ENVIRONMENTAL VOLUNTEERS | ENVIRONMENT AND TOURISM | OTHER NEWS

ECONOMY-SCIENTIFIC-TECHNOLOGY

NEWS >> Multiply "Green walls"

**NEWS** HOT

- › Cooperation activities of VACNE and HEF (Korea) matching the directing opinions of the Deputy Prime Minister
- › Deputy Prime Minister highly appreciated the VACNE initiative of organizing the "Forum of green economic development"
- › Cai Tien National Park enlarged
- › Multiply "Green walls"
- › MCD participated in the IUCN World Conservation Congress 2016 in Hawaii
- › Special role of SMEs a in the development of green economy
- › Glorious preserving clean green environment - Live Television Interaction "Green economy for

**FOCUS**

- Glorious preserving clean green environment - Live Television .
- Agree to upgrade Certificate of Vietnamese - Korean environmentally.
- Some pictures of the Live Television Interaction "Green economy .

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## APEC Virtual Center for Environmental Technology Exchange

### Remarks:

- Environment is a big concern in Vietnam;
- Government, academy, industry and civil society actively circulate environmental technology information;
- Sources of technologies are limited.

Thank you



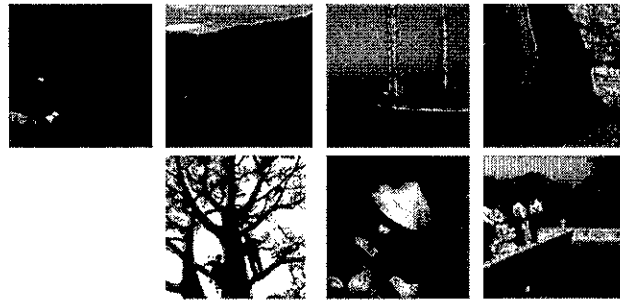
# Asia-Pacific Network for Global Change Research (APN)

20 years of policy-relevant global change research in the Asia-Pacific region



Bridging Science & Policy  
for a Sustainable Asia-Pacific

APN Secretariat



Part 1

## OVERVIEW

# What is APN

An inter-governmental network of 22 countries\* in the Asia-Pacific fostering **research, capacity development and science-policy interaction** in the fields of **global change and sustainability**



- Established 1996 as a US-Japan Initiative
- Secretariat in **Kobe, Japan**
- Financial contribution from: **Japan, Republic of Korea and New Zealand**
- Financial Resources: **US\$ 4.7 Million** (Fiscal year 2016)

\* *Pacific Island Countries, Singapore, Myanmar and Maldives are approved countries whose scientists are eligible to receive funding under APN awards.*

## Our donors



Ministry of the Environment, Japan



Hyogo Prefectural Government, Japan



Ministry for the Environment, New Zealand



Ministry of Environment, Republic of Korea



\*\* We are supported by all member countries through their in-kind contribution in terms of reviewing proposals, hosting and participating in APN meetings, in-country promotion of APN, etc. APN funded projects also provided substantial in-kind support through staff time, facilities and equipment, etc.

## Vision

An Asia-Pacific region is successfully addressing the challenges of **global change and sustainability**

## Goals

Regional Collaborative Research

Capacity Development

Science-Policy Interaction

Partnership with Stakeholders

## Work programme approach partnerships ...

### APN-funded projects

#### Core Programmes

**CRRP:** Regional collab. research

**CAPaBLE:** Capacity dev.

#### Thematic frameworks

**LCI:** Low Carbon Initiatives

**CAF:** Climate Adaptation & Disaster Risk Reduction

**BES:** Biodiversity & Ecosystem Services

### APN organised activities

Science-Policy Dialogues

Proposal Development  
Training Workshops

Sub-regional meetings

Mitra Award on Global Change Research

Publication: APN Science Bulletin, policy briefs, ...

Young scientist support

...

### Partnerships

UNFCCC  
(SBSTA, NWP, L&D)

IPBES

LoCARNet

APAN

FE Projects

Governments

Dev. agencies

stakeholders

...

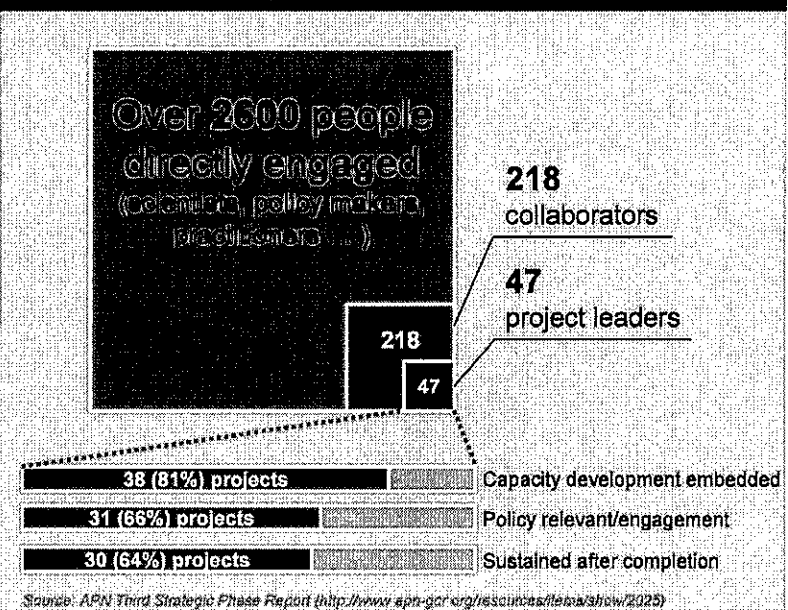
# 20 Years of Impacts on the Global Change Community

## Since 1996:

- ❑ Over 400 projects funded
- ❑ Over \$25 million disbursed for projects
- ❑ Over 60% of projects led by individuals from developing countries

- 182 peer-reviewed publications
- 641 tangible outputs
- 22 (47%) projects directly linked with major GC programmes/projects (WCRP, IGBP, etc)

## 2010–2015 ARCP (3<sup>rd</sup> Strategic Phase)



# 20 Years of Impacts on the Global Change Community

## Since 1996:

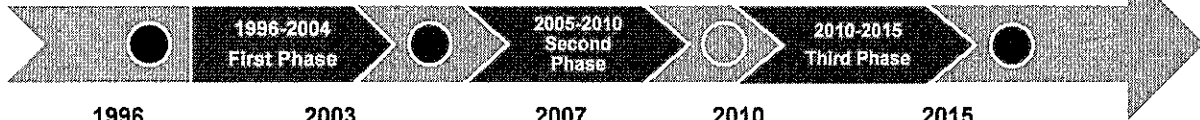
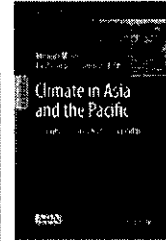
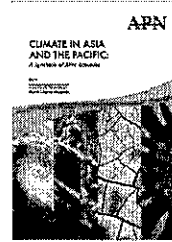
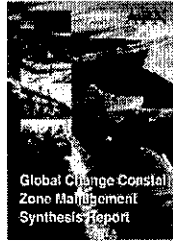
- ❑ Over 400 projects funded
- ❑ Over \$25 million disbursed for projects
- ❑ Over 60% of projects led by individuals from developing countries

- 43 (47%) projects were policy-relevant or had policy engagement
- 54 (90%) projects provided monetary co-finance support

## 2010–2015 CAPaBLE (3<sup>rd</sup> Strategic Phase)



1998  
1st Regional  
Research Project  
launched



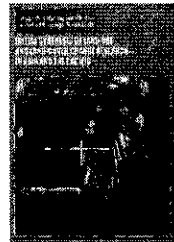
1996  
Founded

2003  
1st CAPaBLE  
Project  
launched

2007  
\$10m  
disbursed

2010  
22  
members

2015  
\$25m  
disbursed



**401**  
projects funded  
as of May 2015



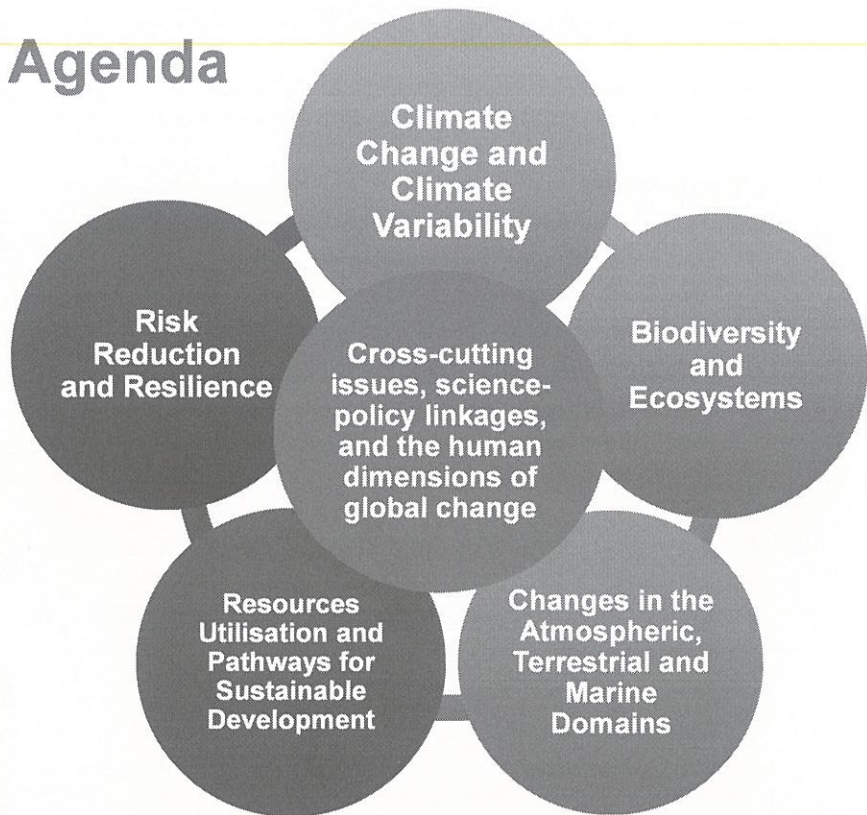
Part 2

# MAIN ACTIVITIES

# Research Agenda



<http://apn-gcr.org/r/4sp>



# Capacity Development Agenda

## Who?

- Young and early career scientists
- Policy makers
- Community leaders
- Resource managers

## How?

- CAPaBLE Programme
- Proposal Development Training Workshops
- Science-Policy Dialogue and other forums
- Stakeholder engagement throughout projects
- Mitra Award/poster sessions
- Synthesis and assessments



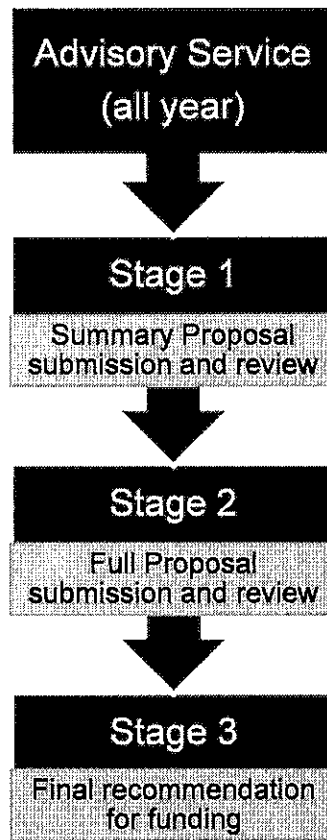
## Core Programmes: CRRP & CAPaBLE

APN selects proposals through an annual calls for proposals process (normally open in June every year)

### Core Programmes:

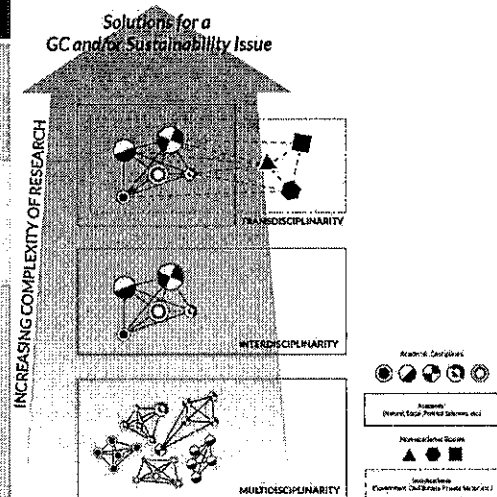
- **CRRP (Collaborative Regional Research Programme)**
  - New research which addresses knowledge gaps in key scientific areas
  - Synthesis and analysis of existing research
  - Research planning/scoping activities
  - The development of policy products such as integrated assessments, impact assessments, climate models, etc.
- **CAPaBLE (Scientific Capacity Development Programme)**
  - Scientific capacity development for sustainable development
  - Science-policy interfacing
  - Awareness raising activities
  - Knowledge dissemination activities

**APN** ASIA-PACIFIC NETWORK FOR GLOBAL CHANGE RESEARCH



## Focused Activities

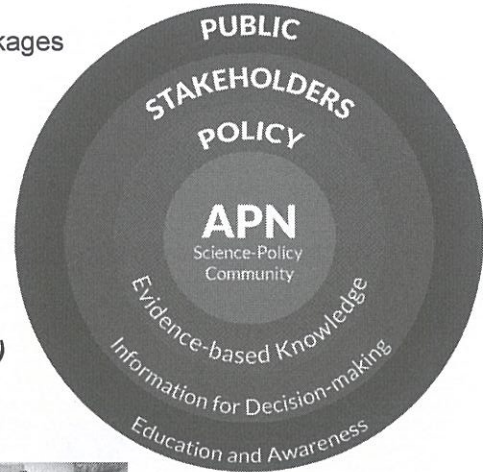
Core programmes	Focussed activities
Broad topic (global change)	Specific theme with earmarked funds (CAF, LCI, BES ...)
Research: Synthesis, gap filling, policy tools	Science <=> policy <=> practitioners <=> society
Institutionalised core activities (APN as a funder)	Based on specific member needs (Open role, can be partner, funder, stakeholder)  Possible activities: - supporting implementation of Paris Agreement (capacity building, technology transfer) - G7 Statement (CC, resource efficiency ...) - NWP - IPBES assessments



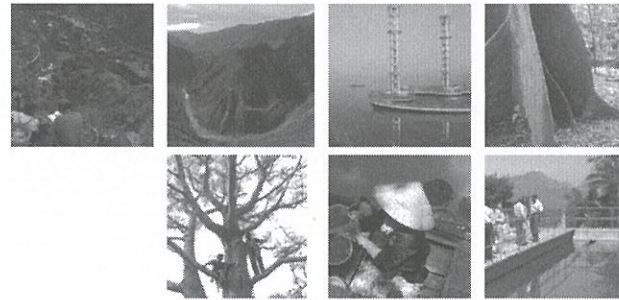
*Shifting focus towards solutions-oriented research (source: 4<sup>th</sup> Strategic Plan)*

# Science-Policy Agenda

- **APN is committed to:**
  - strengthening evidence-based science-policy linkages
  - informing decision-making
  - enhancing public awareness
- **Science-Policy Dialogues**
  - Bangkok, Thailand (2012)
  - Thimphu, Bhutan (2014)
  - Ulaanbaatar, Mongolia (2015)
  - *In collaboration with IPBES (2017, 2018, 2019)*
- **Synthesis of APN Science-Policy Dialogue Series**



**APN** ASIA-PACIFIC NETWORK FOR GLOBAL CHANGE RESEARCH



Part 3

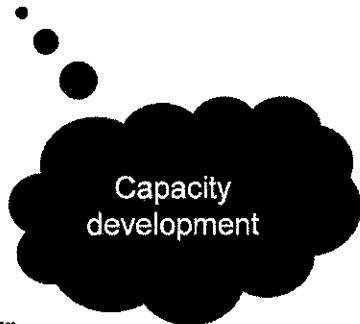
## APN AND TECHNOLOGY TRANSFER

**APN** ASIA-PACIFIC NETWORK FOR GLOBAL CHANGE RESEARCH



IPCC: "technology transfer encompasses the broad set of processes that cover the flows of knowledge, experience, and equipment for mitigating and adapting to climate .....the process of learning to understand, utilize, and replicate the technology, including the capacity to choose, adapt it to local conditions, and integrate it with indigenous technologies."

While APN has not yet established a specific framework to support technology transfer, efforts have been embedded in current APN activities



### **Core Programmes – CRRP**

#### **Development of an Integrated Climate Change Impact Assessment Tool for Urban Policy Makers (UrbanCLIM)**

- **Year conducted:** 2012 - 2016
- **Countries involved:** China, New Zealand, the Philippines, Viet Nam
- **Activities:**
  - Development of high resolution climate change projections based on regional climate model (RCM) output from RMIP3 and CMIP5.
  - Development of an integrated impact assessment system including the major sectors in urban areas, using case study
  - Training workshops, dissemination and publications
- **Results:**
  - DSS application, UrbanCLIM, developed and tested
  - The model is used and applied for several users:
    - Financing low-carbon, climate resilient urban infrastructure in Asia and the Pacific, and ADB funded project
    - Adapting to Climate Change in China (ACCC II) Project (Swiss Development Corporation funded project)



## Low Carbon Initiatives Framework (LCI)

- Established in 2012 with financial support from the Ministry of Environment, Japan
- Goal: Strengthening capacity of developing countries scientists and practitioners to implement national strategies for low carbon and green growth
- Distributed USD 500,000 for 7 Projects (2 capacity development activities and 5 regional research activities)
- Involved 7 Project leaders and 40 collaborators from 12 APN member countries
- Output: Policy brief summarising outcomes of the projects
- Ongoing and Future Activities
  - A synthesis report of APN funded low carbon studies
  - Networking activities with LoCARNet to promote regional collaboration

## LCI Project – Regional Research

### **Low Carbon Urban Infrastructure Investment: Cases of China, Indonesia, and Japan**

**Year conducted:** 2012-2015

**Countries involved:** Japan, Indonesia, China

**Activities:** Applying methods including risk analysis, cost-benefit analysis, integrated assessment modelling, input-output analysis and comparative analysis, to define measures and monitor green investment at city scale in Jakarta, Yokohama and Shanghai.

**Findings:** Cities in selected countries can play a key role in the green growth agenda, by stimulating growth through smart investment in urban in-frastructure, i.e. by building a physical infrastructure, by financial and tax incentives, energy supply, and heightening society's awareness of a sustainable lifestyle.

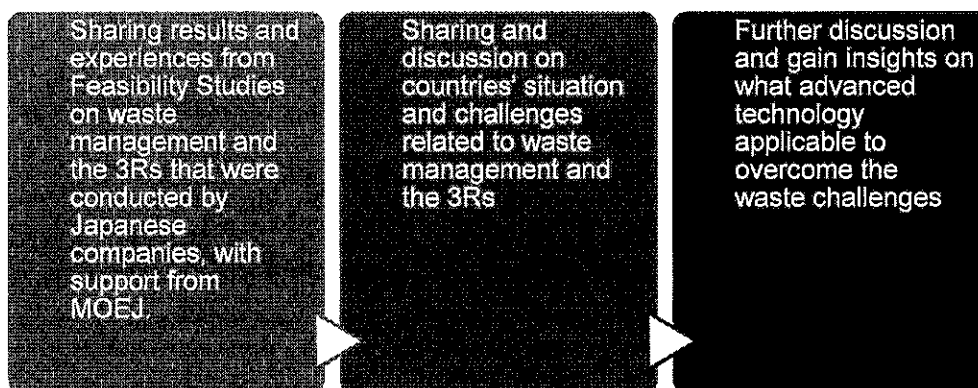
Yokohama	Shanghai	Jakarta
Analysed effects of Feed in Tariff (FIT) and other policies on renewable energy investments	Explored the incremental costs of green buildings and drawing comparisons between current subsidies	Conducted modeling studies to examine the low carbon city scenario for Capital City District (DKI) of Jakarta towards 2030

## **LCI Project – Capacity Development** **Strengthening Community Voices in REDD+ Policy**

- **Year conducted:** 2012-2013
- **Country involved:** Cambodia, Indonesia, the Philippines, Viet Nam
- **Activity:** Training for local communities and local governments of Cambodia, Indonesia, the Philippines and Vietnam in the formation of REDD+ policies
- **Key Findings:**
  - The timing, content and understanding of localized context is important in the establishment of REDD-plus benefit sharing frameworks.
  - There is no single roadmap to successful REDD-plus implementation. REDD-plus policy strategies are varied in each country because of the varying legal frameworks and policy processes. Thus, strategies, programmes and projects at each level (national, sub-national and community) have to be relevant and responsive to the conditions of each country.

## **International Workshop on Waste Management and the 3Rs – Hanoi, Viet Nam**

- Matchmaking the needs of the government with potential investment from private sector
- Participants:
  - Government representatives from Indonesia, Myanmar, Thailand, Viet Nam
  - Japanese private companies dealing with 3Rs and solid waste management issue



# Upcoming activities

- **Scoping workshop on technology transfer**
  - Date (tentative): 6-7 December 2016
  - Venue: Kobe, Japan
  - Aim: Establish a scope/framework on activities that APN and partners can conduct in collaboration/synergy to support countries in Asia Pacific region to be able to utilize and replicate technology to address Global Environmental Change issues that includes (but is not limited to): Climate mitigation and adaptation; air and water pollution; solid waste management and 3R.
  - Please see me or contact Linda Stevenson ([l Stevenson@apn-gcr.org](mailto:l Stevenson@apn-gcr.org)) if you are interested in attending this workshop.
- **International workshop on solid waste management and the 3Rs**
  - Date: 7 March 2017
  - Venue: New Delhi, India
  - Aim: Information sharing on countries situation and needs to address 3Rs and solid waste management challenges and discussion on potential technologies applicable
  - Target countries: India, Iran, Myanmar, Sri Lanka



Part 4

## GET INVOLVED

# Get involved

## 1. APN Calls for Proposals (CRRP/CAPaBLE):

– [www.apn-gcr.org/call/](http://www.apn-gcr.org/call/)

## 2. Become an external reviewer

- Review proposals
- Peer reviewer of APN Science Bulletin

## 3. Become a partner

# Thank you!

For more information: <http://www.apn-gcr.org/>

News, announcements and global change community updates.



APN E-Lib: [www.apn-gcr.org/resources](http://www.apn-gcr.org/resources)

Archive of publications, project metadata and outputs of completed/ongoing projects.

### Contact us:

APN Secretariat, East Building 4F. 1-5-2 Wakinohama Kaigan  
Dori, Chuo-ku, Kobe 651-0073, Japan. Tel: +81-78-230-8017

Fax: +81-78-230-8018; Email: [info@apn-gcr.org](mailto:info@apn-gcr.org)

# ANNUAL REPORT APEC VC CHILE

**CHILEAN NODE**

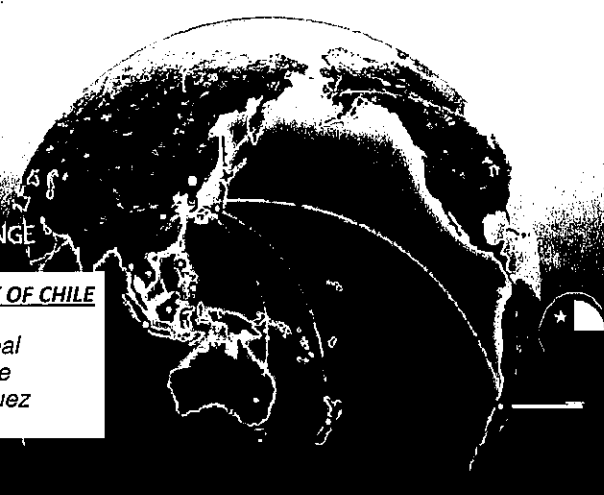
**APEC-VC**

APEC VIRTUAL CENTER FOR ENVIRONMENTAL TECHNOLOGY EXCHANGE



FACULTY OF MEDICINE, UNIVERSITY OF CHILE

Dr. Lionel Gil Hormazabal  
 MsC. José P. Díaz Garrote  
 Dra. Marta Adonis Parraguez



**SEOUL WORKSHOP**  
 19-20 OF OCTOBER 2016

APEC-VC

## GENERAL INFORMATION CHILE - APEC

APEC 21 economies

Chile signed agreement 1994

APEC 63 % of total world population

63% of chilean exports goes to APEC economies

55% of imports are from APEC economies

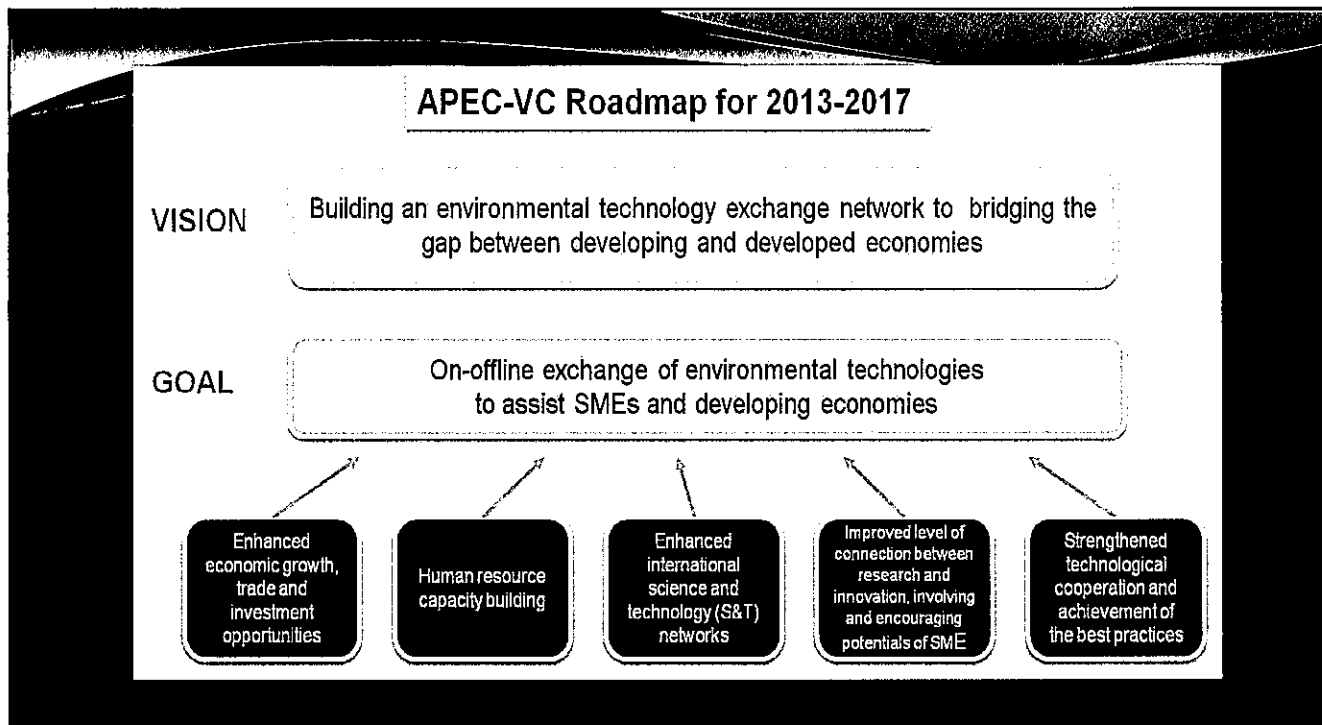
Free Trade Agreements (FTA) with 15 APEC members

The IMF projected that Pacific economies represent nearly 58% of global GDP in 2013

Main commercial APEC chilean partners: China, USA, Japan, South Korea, Mexico and Peru



Sources: SOFOFA (Federation of Chilean Industry) and Ministry of Economy



APEC-VC

## OBJECTIVES

- Facilitate the exchange of environmental technology information within APEC economies.
- Promote business opportunities
- Exchange technology and product information of the chilean environmental industry .
- Provide the latest updated chilean information about environment: pollution, technologies, laws, regulations, policies, measures and projects.
- Contribute to environmental protection in Chile.

APEC-VC Chile    HOME    ABOUT APEC-VC    INFORMACION BÁSICA    MENÚ EVENT    LINKS

Save the Earth, Save the Future  
Chile - Chile

CAMARA DE COMERCIO CHILENO COREANA S.A.    91 2 2 37 0 0 0

10 Años de Vigencia del TLC entre Chile y Corea: Logros y Desafíos

30 Abril

<http://apec-vcchile.med.uchile.cl>

APEC-VC

**APEC-VC CHILE ACTIVITIES**

We have completely changed our web page from CONICYT to the University of Chile, Faculty of Medicine. Technical support from the U. of Chile.

We have enhanced contacts with entrepreneurs organizations mainly linked to the Chile- Korea Chamber of Commerce. Connection and information with more than 700 Chilean and Korean companies.

Information about Actualization of Chilean Regulations in the field of of Air Pollution. PM<sub>2.5</sub>

**ATMOSPHERIC DECONTAMINATION PLAN**

The new PPDA was approved by the council of ministries October 4<sup>th</sup>, 2016 proposing a series of measures to reduce pollution emitted by transportation, industrial and residential, among others.

It also establishes better mechanisms for offsetting emissions, control and promotion of clean bicycle transport and electric vehicles. The main objective is to preserve and protect the health of Santiago inhabitants. The plan will start may 1<sup>th</sup>, 2017.

APEC-VC

**APEC-VC CHILE ACTIVITIES**

Dr. Lionel Gil coordinator of APEC-VC Chile, was invited to a meeting of the Environment Committee of the Senate, led by Senator Alejandro Navarro, in which the issue was the evaluation of the progress made in the last 20 years on the problem of air pollution in Chile. The session was held on Tuesday July 12, 2016, in the session hall of Congress in Valparaiso.

Dr. Gil presented a summary of the investigations of his research group, in the last twenty years, stressing the importance of investigating the toxicity of particulate matter  $PM_{2.5}$  for the development of air quality standards. He pointed out that the standards are defined by the weight particulate material and not based on its toxicity. He indicated that the toxicity of the weight of an amount of particles depends on the emission source.

APEC-VC

**APEC-VC CHILE ACTIVITIES**

This might be a problem since for instance air pollutions in Coyhaique is mainly related to the use firewood where as in Santiago is related to many different sources. So can be use the same standard?

News. We have provide news information in different subjects such as : Economy, New Technologies, Energy Efficiency.

An informative manuscript with respected to Trans Pacific Partnership (TPP ) generated by APEC-VC Chile is now available in the Chile APEC-VC webpage in English. This document provided information in English for Latin American people which do not speak English.

International Training in Environmental Medicine



APEC-VC

**PROBLEMS**

The main problem of the VC Chilean node is the lack of financial support makes difficult to:

Improve the web site quality and technology

APEC-VC

**ADVANTAGE**

The APEC-VC Chile provide information in Spanish for around 400 million people in America. All presentations of the Chilean Node in APEC-VC annual meeting, are published in English.

APEC-VC

**TASKS FOR THE NEW APEC-VC PROJECT**

- Rebuild the web site to meet the objectives of the New APEC-VC project 2012-2017.
- Strengthening Chile APEC-VC by adding new items to the common classification system, enrich content uploaded and improve the convenience of searching method.
- Diffuse and promote the information on environment and energy conservation technologies, environmental protection measures and policies.
- To diffuse APEC growth strategies with the aim to achieve economic growth sustainable, innovative and secure.

## TASKS FOR THE NEW APEC-VC PROJECT

- Improve the access to environmental goods and services and links this to development of a Chilean Industry environmentally friendly.
- Promote related business, by disseminating information on these technologies through the framework of APEC-VC-Chile.
- Promote the findings or lessons learned from previous APEC-VC projects.
- Promote the project in the public and private sector.
- Find Beneficiaries for this APEC project

APEC-VC

## GANTT CHART 2016-2017

Year & Month Item	2016				2017		
	1-3	6	7-9	10-12	1-3	4-6	7-9
Seoul Meeting 2016							
Continuing rebuild of the web site							
Adding new items							
Adding more items to the news							
Diffuse information on Envir. & Energy Conservation Tech.							
Diffuse APEC growth strategies							
Promote the findings or lessons learned from APEC-VC projects							
Promote envir. business within the participant economies							
Searching beneficiaries in the Industrial Private and Public sector							
Promote the APEC project in Chilean gov. institutions and private sector							

## APEC-VC CHILE



Dr. Lionel Gil Hormazabal



Dra. Marta Adonis Parraguez



MSC. José Pedro Díaz Garrote

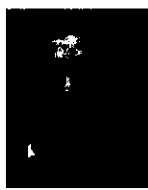
### TECHNICAL SUPPORT



Sr. Danl Fochesato



Sr. Ricardo Sanhueza



Sr. Raul Vallejos

**CeTeCáncer**  
 Centro de Tecnologías para el Cáncer  
 Facultad de Medicina Universidad de Chile

APEC-VC Chile

Save the Earth. Save the Future

CAMARA DE COMERCIO CHILENO COPACAMA S.A.

10 Años de Vigencia del TLC entre Chile y Corea: Logros y Desafíos

30 Abril

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**CHILEAN NOTE**

**APEC-VC**

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# APEC VC MALAYSIA

20  
Tahun  
1994-2014



LESTARI<sup>®</sup>  
UNIVERSITI KEBANGSAAN MALAYSIA

**Nik Mohd Noor Faizul Md Saad**

Institute for Environment and Development (LESTARI)  
The National University of Malaysia (UKM)

## Our Commitment Towards sustainable Development: LESTARI-UKM

The establishment of APEC VC is in line with a very **significant efforts** towards environmental sustainability that has been done by the Institute for Environment and Development (LESTARI) Universiti Kebangsaan Malaysia (UKM) as a focal point for environmental technology in Malaysia since 2006.



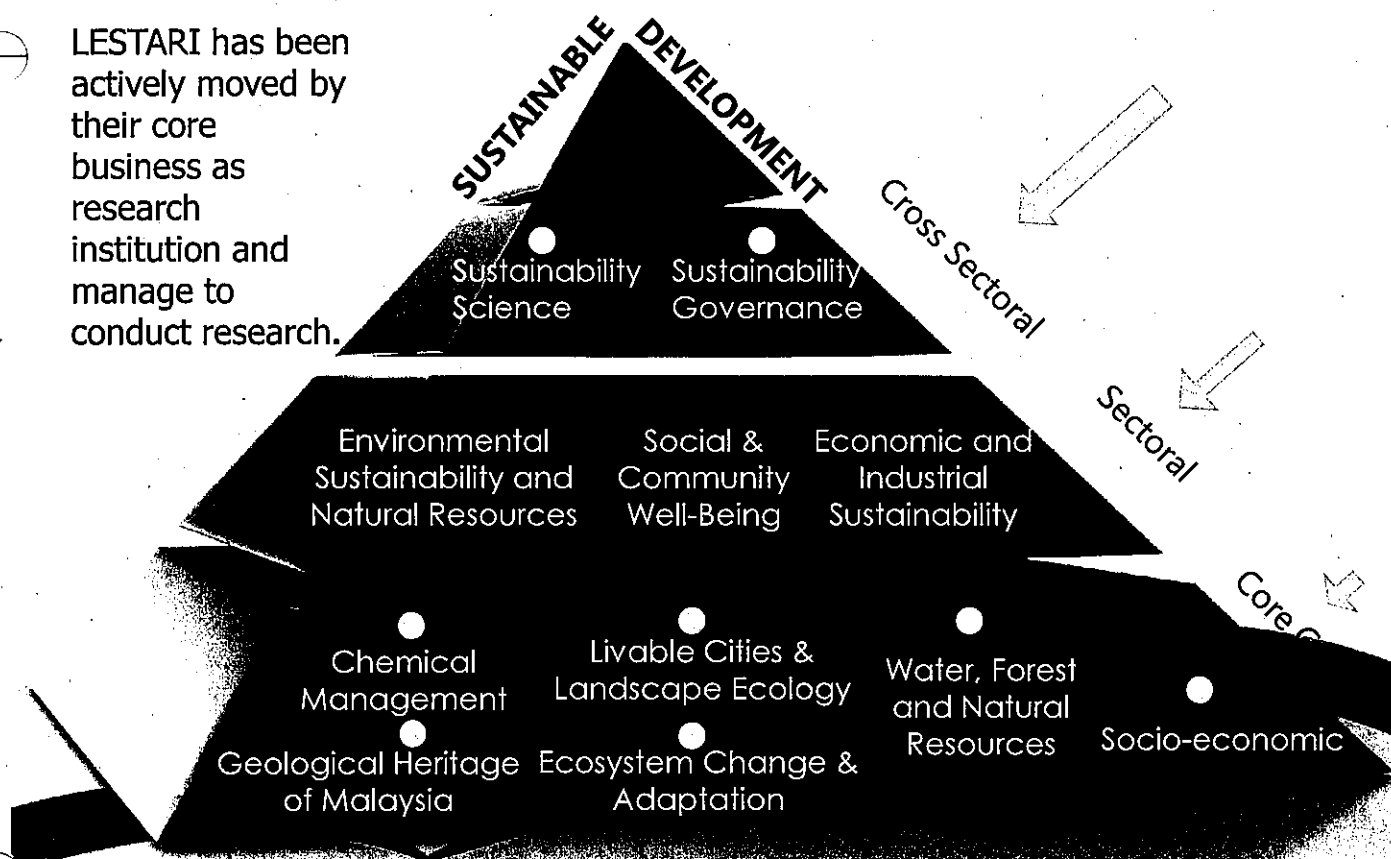
The establishment of LESTARI is to realize the goal of sustainable development through research and capacity development.



LESTARI<sup>®</sup>  
UNIVERSITI KEBANGSAAN MALAYSIA

# Integrated and Holistic Approach

LESTARI has been actively moved by their core business as research institution and manage to conduct research.



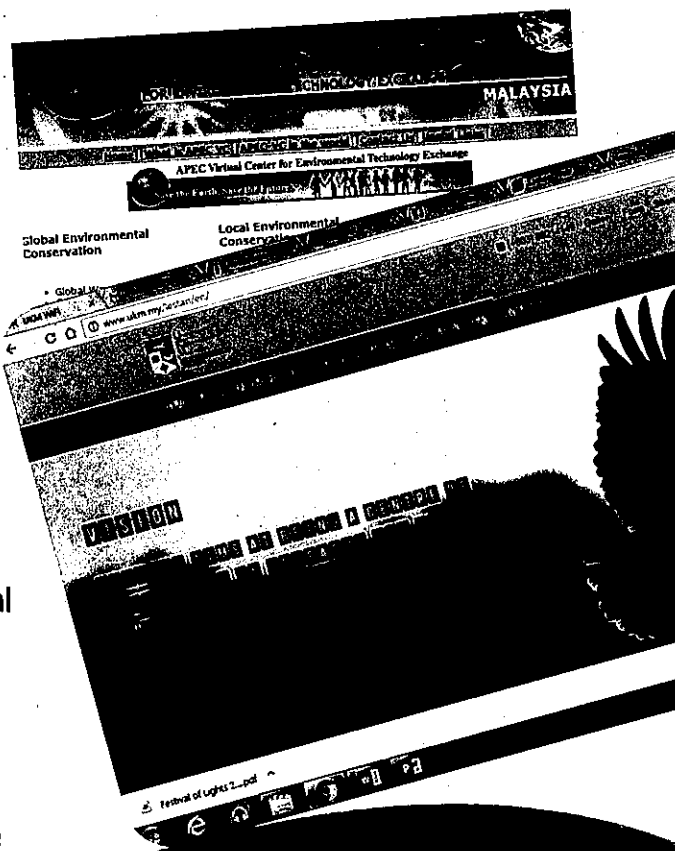
## Current Situation

### 1. Information Platform

Since 2006, LESTARI starts to development the APEC VC Malaysia portal ([www.ukm.my/apecvc](http://www.ukm.my/apecvc)) to gather information on environmental technology in the country.

In 2009, the portal **has been moved** from LESTARI main server to the main server at the UKM Information Technology Centre to enhance their access stability of the portal. The portal is now can be accessed at [www.ukm.my/apecvc](http://www.ukm.my/apecvc).

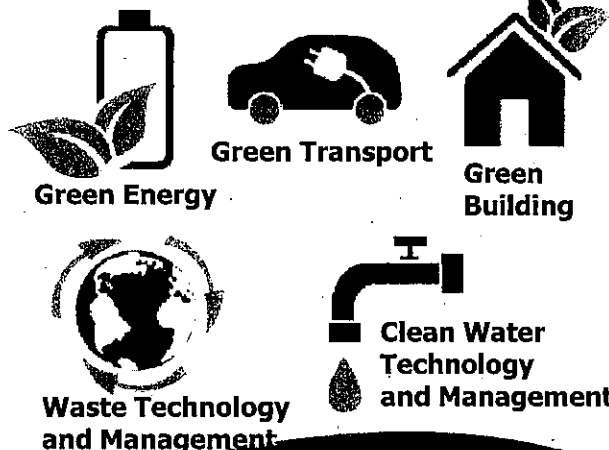
All the information in the portal is always being updated based on available local information from government sectors, NGOs and Private sectors.



# Current Situation

## 2. Strengthening Capability and Networking

- International Greentech & Eco Products Exhibition & Conference Malaysia (IGEM) 2016
- Provide a platform for the key drivers of green technology sector within Malaysia and International.
- IGEM 2016 is the 6th in its series to drive the green industry in Malaysia, as well as keeping it in sync with the most current innovations and initiatives in the market.
- Bearing the theme "Green Business for Sustainability"
- Attracts more than 400 booths from local and international organization



# Current Situation

## 3. Research and Innovation Initiative

Some Current Highlighted Research Projects:

Research Projects	Funder
Variation and Health Impact of ground-level ozone in Malaysia: Mitigation Procedures and Future Policy Implementation	MOHE
Mainstreamin Establishment of Sustainability Science Demonstration Pilot Project on Restoring and Managing Langat River, Malaysia for Future	UNESCO
Globally Harmonised System of Classification - Chemical Industry	MOHE
Future Cities: Science to Action for Building Resilience of Urban Communities in Conjunction with Associate Partners in the UK and Malaysia	NEWTOWN FUND- BRITISH COUNCIL
Establishment of Sustainability Science Demonstration Site on Water and Environmental Sustainability Education Linked with Ecotourism in Langkawi Geopark	UNESCO

# Current Situation

Some Current Highlighted Research Projects: (CONTINUE..)

Research Projects	Funder
Assessing Community Risk Insurance Initiatives and Identifying Enabling Policy and Institutional Factors for Maximizing Climate Change Adaptation and Disaster Risk Reduction Benefits of Risk Insurance	IGES, JAPAN
Establish The Asian Network on Climate Science and Technology (ANCST) in Conjunction with principal partners Advisory Committee on Protection of the Sea (ACOPS) and The Guy Carpenter Centre, City University of Hong Kong	Cambridge Malaysian Education and Development Trust (CMEDT)
Integrating CCA, DRR and L+D to Address Emerging Challenges Due to Slow Onset Processes	The Asia Pacific Network for Global



# Current Situation

## 4. Technology Transfer & Sharing Through Outreach Activities by Eco-volunteers of UKM

- **Sustainable Community Programme 2016**
  - 3 series programme
  - To give the basic understanding on how to conserve the environment.
  - Focus to different state for different year





# Current Situation

## 4. Technology Transfer & Sharing Through Outreach Activities Eco-volunteers of UKM

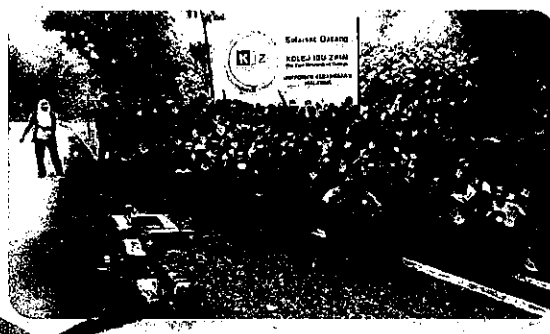
- **Ecosystem Discovery Journey Training Series**
  - Involves 3 modules develop by LESTARI UKM
  - target group is for University students, School teachers & Government staffs
  - LESTARI is now developing modules for kids/primary school



# Current Situation

## 4. Technology Transfer & Sharing Through Outreach Activities

- **Develop an Elective Subject (LMCP1522)**
  - specific for student to conduct outdoor activities on environmental conservation and protection.
  - Every semester attracts 200 students.





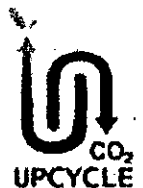
**Terima kasih**

**Thank You**

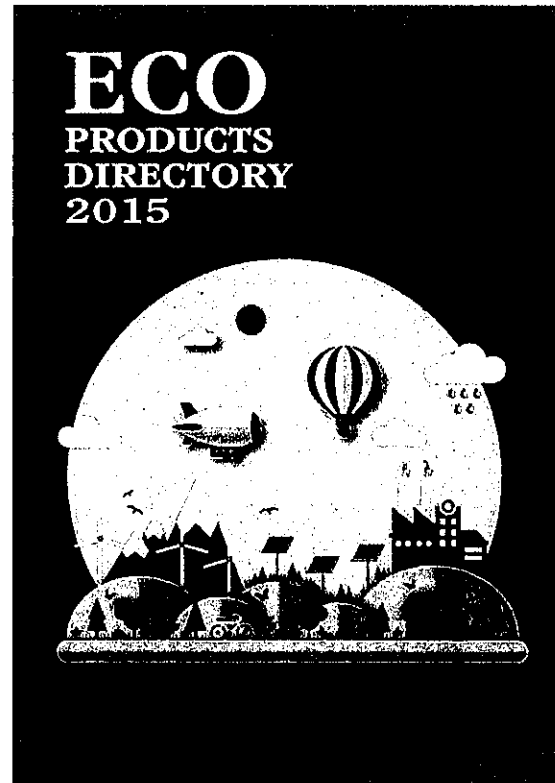
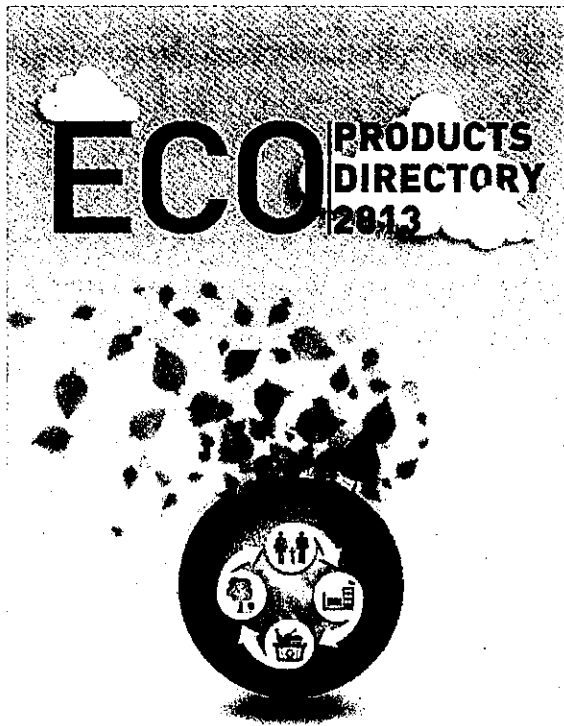


Ministry of Natural Resources and  
Environmental Conservation  
Environmental Information Center  
Department of Environmental Quality Promotion  
THAILAND

ECOLABEL  
INDEX  
THAILAND



# ECO PRODUCTS DIRECTORY



## Example of Product in Directory

**CFP-4-180** พลาสติกและบรรจุภัณฑ์พลาสติก

ปริมาณการปล่อยก๊าซเรือนกระจก เท่ากับ  
1.58 kg CO<sub>2</sub> e



บริษัท ทีทีที โกลบอล เคมิคอล จำกัด (มหาชน)  
ที่อยู่ 555/1 ศูนย์อเนกนอร์ดซีคอมเพล็กซ์  
อาคารเอ ชั้น 14 - 18 ถนนวิภาวดีรังสิต แขวงจตุจักร  
เขตจตุจักร กรุงเทพมหานคร 10900






พลาสติกและบรรจุภัณฑ์พลาสติก เม็ดพลาสติกโพลีเอทิลีน  
ชนิดความหนาแน่นสูง HC6600B 1 kg










**EC-5-023** อุปกรณ์ก่อสร้าง

**ข้อมูลด้านสิ่งแวดล้อม**

- เป็นปูนซีเมนต์ที่ผลิตจากกระบวนการที่ถูกออกแบบและปรับปรุงพัฒนาให้มีอัตราการสิ้นเปลืองพลังงานต่ำ และเป็นมิตรกับสิ่งแวดล้อม ตลอดกระบวนการไม่ปลดปล่อยมลพิษที่เป็นอันตรายต่อสิ่งแวดล้อม สามารถใช้พลังงานประเภท Fossil ด้วยการใชัพลังงานทดแทนประเภท RDF ด้วยการใชัพลังงานไฟฟ้าที่ผลิตจากพลังงานประเภท Fossil ด้วยการใชัพลังงานไฟฟ้าที่ผลิตจากความร้อนทิ้งของกระบวนการผลิตปูนซีเมนต์ ส่งผลให้ตลอดกระบวนการผลิตสามารถลดการปล่อยก๊าซเรือนกระจกที่มีผลกระทบต่อชั้นบรรยากาศโลกของเราลงได้อย่างต่อเนื่อง
- ปูนซีเมนต์ซีเปีย ซูเปอร์ ตรีฟไฟโอ เป็นปูนที่มีการออกแบบอย่างพิถีพิถันให้มีคุณสมบัติพิเศษและมีคุณภาพสูงกว่าปูนซีเมนต์ผสมทั่วไปมากกว่า 20% ด้วยน้ำหนักปูนซีเมนต์ซีเปียซูเปอร์ 40 กก. สามารถใช้งานได้เทียบเท่ากับปูนซีเมนต์ผสมทั่วไป 50 กก. ทำให้ประหยัดและคุ้มค่ายิ่งขึ้น



บริษัท ทีทีไอ โพลีน จำกัด (มหาชน)  
ที่อยู่ 299 หมู่ 5 ถนนมิตรภาพ ตำบลทับกวาง  
อำเภอแก่งคอย จังหวัดสระบุรี 18260

อุปกรณ์ก่อสร้าง ปูนซีเมนต์ซีเปีย ซูเปอร์ ตรีฟไฟโอ

# DEQP GREEN LABEL INDEX

Department of Environmental Quality Promotion

**G** **G** **G** **G**  
**GREEN** **Gold** **Silver** **Bronze**  
**PRODUCTION**

Products      Wovens/Textiles

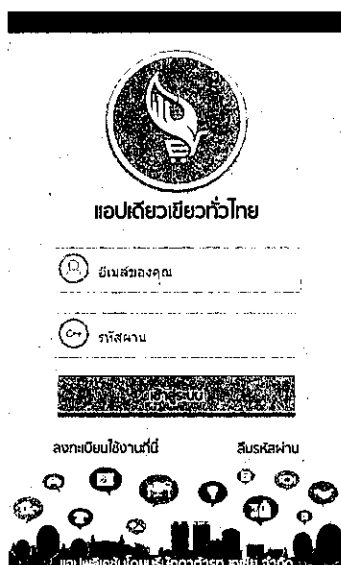
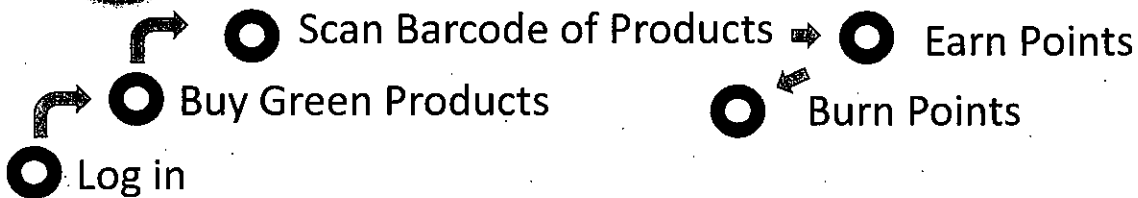
**G** **G** **G** **G**  
**GREEN** **Gold** **Silver** **Bronze**  
**OFFICE**

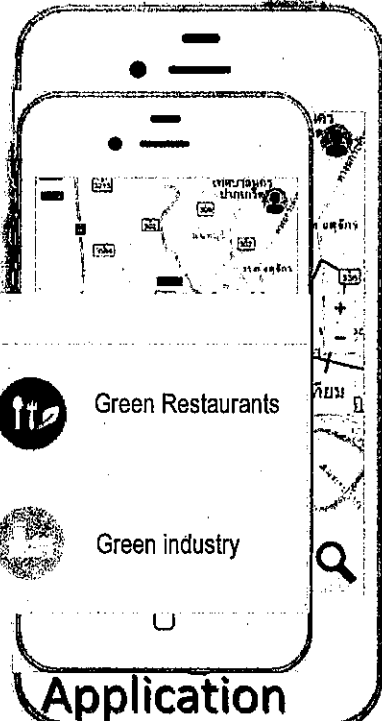
**G** **G** **G** **G**  
**GREEN** **Gold** **Silver** **Bronze**  
**ENERGY**

**CO<sub>2</sub>** **UPCYCLE** **UPCYCLE** **UPCYCLE** **UPCYCLE**



## GREEN CARD APPLICATION





### สินค้า Green Production and Service



Green Hotel and Resort



Organic food



Green Restaurants



Green Products



Green Office



Green industry

### ข่าวสารและกิจกรรม



#### ข่าวร่วม ภาครัฐและเอกชน

กรมวิชาการได้ ควบคุมสินค้า "สินค้าสีเขียว" ให้มีมาตรฐานภายในตลาดเกษตร...  
ผู้บริโภคที่ใส่ใจสิ่งแวดล้อมและใส่ใจสุขภาพ...  
กระทรวงพาณิชย์ได้...  
กระทรวงเกษตรและสหกรณ์ได้...

### Application

### Green Products



Green Products



- สถานที่
- สินค้า
- ข้อมูลใหม่ล่าสุด
- ชื่อสถานที่/สินค้า
- ประเภทสถานที่

พบจำนวน 5 รายการ

- รายงานสรุปผล
- ส่งออกเป็นไฟล์ Excel
- ส่งออกเป็นไฟล์ HTML

ลำดับที่	รูปภาพตัวอย่าง	ชื่อ	ประเภท	มาตรฐานที่ใช้งาน	จังหวัดที่ตั้ง
1		นิลาลงมา รีสอร์ท แอนด์ สปา	โรงแรม รีสอร์ท และที่พัก		กระบี่ จังหวัดกระบี่
2		ภูธารา รีสอร์ท	โรงแรม รีสอร์ท และที่พัก		นครราชสีมา จังหวัดนครราชสีมา
3		ทิพย์สุโขทัย รีสอร์ท	โรงแรม รีสอร์ท และที่พัก		ประจวบคีรีขันธ์ จังหวัดประจวบคีรีขันธ์
4		บ้านป่าเมี่ยง รีสอร์ท แอนด์สปา	โรงแรม รีสอร์ท และที่พัก		แม่ฮ่องสอน จังหวัดแม่ฮ่องสอน
5		ภูริทัต รีสอร์ท	โรงแรม รีสอร์ท และที่พัก		แม่ฮ่องสอน จังหวัดแม่ฮ่องสอน



# APEC-VC

APEC VIRTUAL CENTER FOR ENVIRONMENTAL TECHNOLOGY EXCHANGE



## INFORMATION SHARING

- Research & Development  
: R&D Database
- Policy Development  
: Laws & Regulations
- Technology Promotion  
: Eco goods, Green Technology
- Capacity Building  
: Projects and Initiatives, Training Programs, Seminars

## Technology & Promotion

APEC Virtual Center for Environmental Technology Exchange

[Home](#) > [Information Sharing](#) > [Technology & Promotion](#)

CATEGORY   Eco-Goods (4)   Equipment (2)   Instrument & Chemicals (2)   Etc (1)

choice ▾

SEARCH

### 4. The eco-dough

Date : 2015-11-23   Hit : 1147



Category : Eco-Goods

Application part : kids





Department of Science  
and Technology



INDUSTRIAL TECHNOLOGY  
DEVELOPMENT INSTITUTE

**2016**  
**ENVIRONMENTAL TECHNOLOGIES**  
**& R & D INITIATIVES**  
**OF APEC – VC PHILIPPINES**

**Dr. Carmel C. Gacho, ASEAN Engr.**  
Supervising Science Research Specialist  
Environment and Biotechnology Division  
Industrial Technology Development Institute  
Department of Science and Technology

Science, Technology and Innovation...



Department of Science  
and Technology



INDUSTRIAL TECHNOLOGY  
DEVELOPMENT INSTITUTE



Science, Technology and Innovation...



# Mandates EO 128

1. Undertake applied research & development to develop technologies and technological innovations in the field of industrial manufacturing, mineral processing, environment and energy.

2. Carry-out the transfer of research results directly to end-users or preferably via linkage units of other government agencies

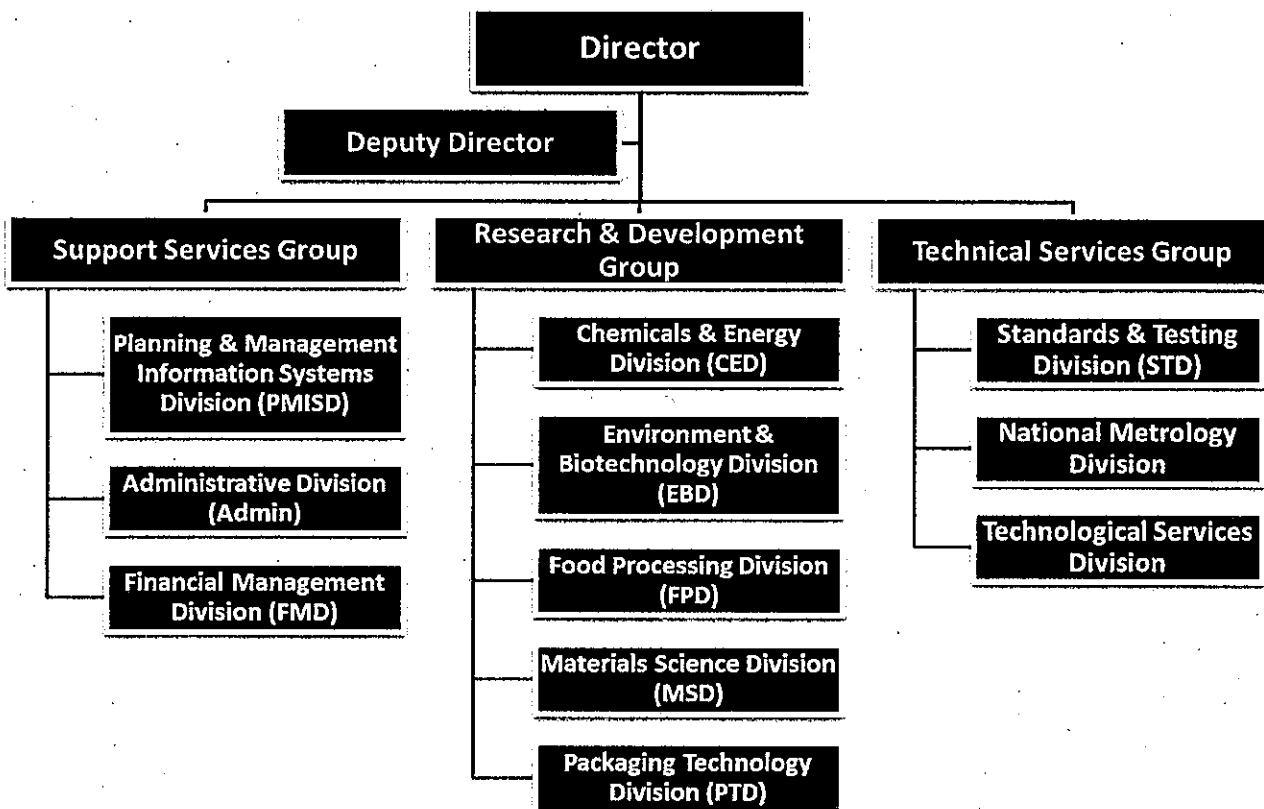
4. Organize training and provide technical advisory and consultancy services to industry clientele and end-users

3. Perform technical services, such as but not limited to, standards, analytical and calibration services mandated by law or as needed by industry

ITDI



## ITDI ORGANIZATIONAL STRUCTURE

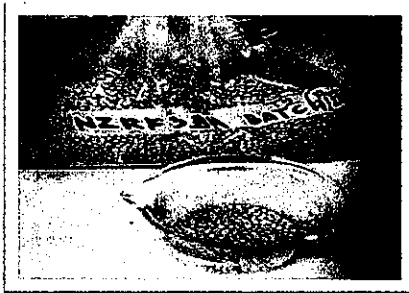




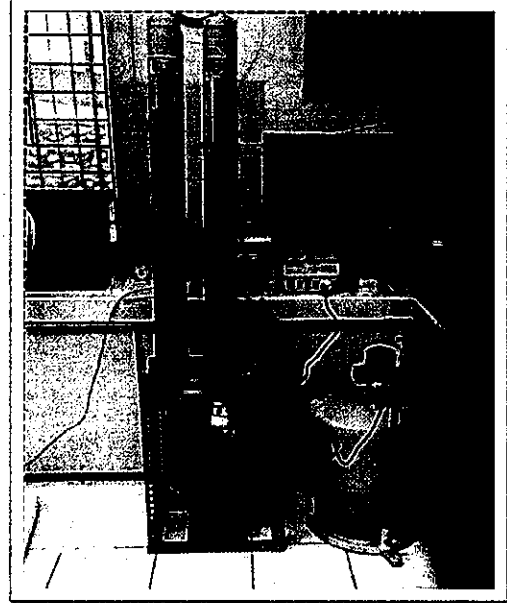
## COMPLETED AND ONGOING PROJECTS FOR ENERGY AND ENVIRONMENTAL SUSTAINABILITY

### *Surface modified zeolite for oil spill decontamination*

Surface modification of locally mined zeolite using hexadecyltrimethyl ammonium bromide (HDTMA-Br) significantly enhanced the property of the resulting adsorbent in the significant removal (99% at 20 ppm) of oil and grease from aqueous solution.



*Surface-modified zeolite*



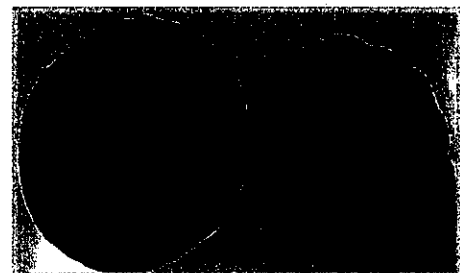
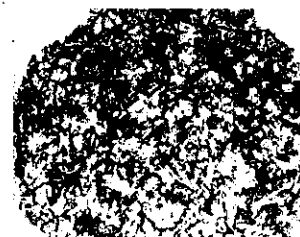
*Column-testing of surface-modified using diesel-contaminated wastewater*



### *Development of Chitosan-Calcium Carbonate Composite from Kitchen Waste for Oil Spill Remediation*

Chitosan-CaCO<sub>3</sub> composite film obtained from kitchen waste (shrimp shells and chicken eggshells) was successfully developed and applied for the remediation of oil (diesel and vegetable).

The maximum oil adsorption capacity of 50:50 chitosan-CaCO<sub>3</sub> composite film was found to be 4.03g/g which is 4 times of its weight.





***Development of a compact wastewater treatment system enhanced with bio-augmentation technology for Quick Service Restaurants (QSRs)***

---

A treatability study is being conducted using fabricated bench-scale system without carriers to determine the ability of the cultured and isolated microorganisms to treat wastewater from the quick service restaurant (QSR) sector.



*Fabricated bench-scale treatment system*



***Isolation of municipal solid waste inoculants and development of small-scale composter for biodegradable waste***

---

ITDI developed a small-scale composter to utilize the biodegradable waste generated within DOST into useful compost product.

A special inoculant is used to accelerate the biodegradation of waste load. Thermophilic condition was achieved during active composting.

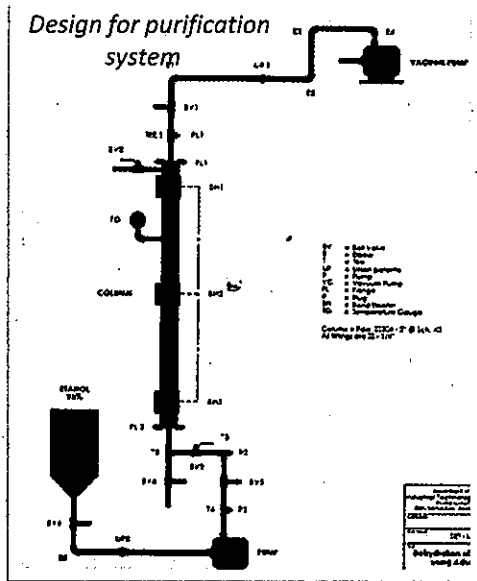
The motorized drum-type composter has a feed capacity of 50 kg per batch and is easy to operate and maintain with no leachate production.



*Small Scale Composter*



***Design of purification system for fuel-grade ethanol using zeolite based molecular sieve***

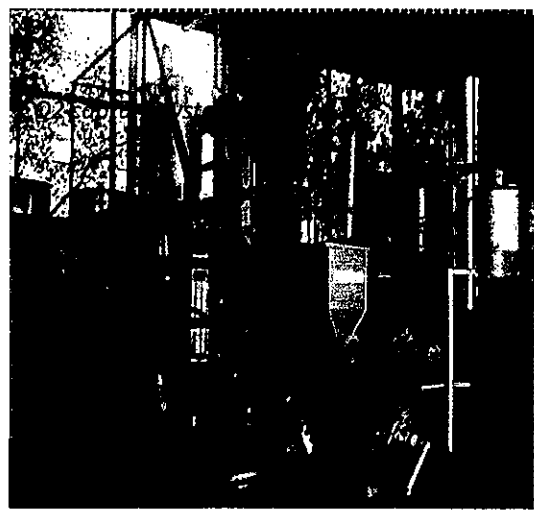


A purification system for ethanol was designed and fabricated.

The system was made up of a nanozeolite-based molecular sieve capable of dehydrating ethanol to come-up with a 99.5% purity for use as a biofuel.



***Design of carbon dioxide capture system utilizing molecular sieve membrane technology***



Designed and fabricated a CO<sub>2</sub> capture system made up of nanozeolite-based molecular sieve membrane.

The system is intended for capturing CO<sub>2</sub> from post-combustion emissions.

It was tested in a fluidized bed combustion system and diesel-fired boiler; capturing a significant amount of CO<sub>2</sub> which was about 15.0-18.5%,

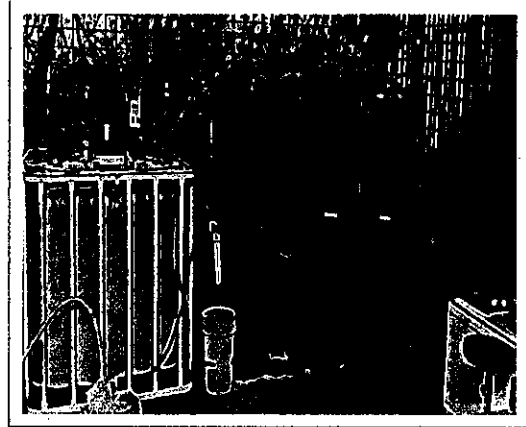


### *Pilot-scale treatment of distillery and meat processing wastewater using Anaerobic Sequencing batch Reactor (ASBR)*

A pilot-scale treatment system called "anaerobic sequencing batch reactor (ASBR)" was designed and fabricated for the treatment of distillery and meat processing wastewater for small scale industry.

After treatment, the effluent's quality passed all standards for effluent quality parameters.

Biogas produced was used as an alternative fuel (i. e. biofuel, cooking applications) and the sludge by-product as soil enhancer.

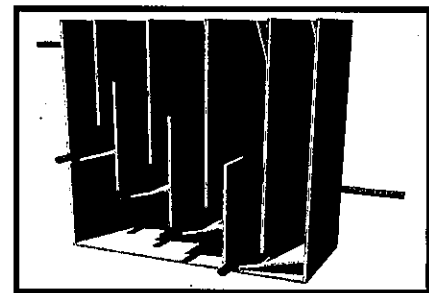
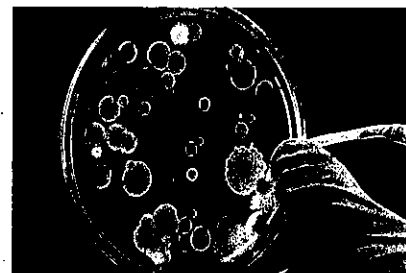


### *Microbial-based technologies for the rehabilitation of heavy metal-contaminated wastewater from mining site*

The study primarily aims to develop a cost-effective treatment system that would be able to remediate abandoned mine sites.

In particular, a biological treatment system will be designed and operated employing microorganisms found on site. This will involve the screening, isolation, and purification of the best pollutant degrading microorganisms found in the abandoned mining site.

The best isolates will be tested for their removal efficiencies both on a batch and continuous basis.

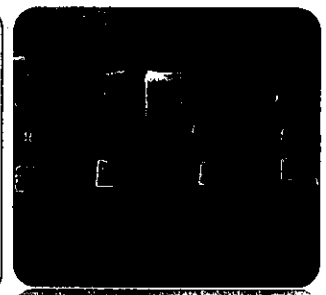




***Competitive sorption and removal of heavy metals  
from aqueous solution using locally-mined modified zeolite***

This study deals with the development of a cost-effective material for the removal of heavy metals ( Cu, Ni, Cr, Pb, and Zn) from aqueous solution employing local zeolite.

Batch adsorption test and column testing will be carried-out on simulated and industrial wastewater.



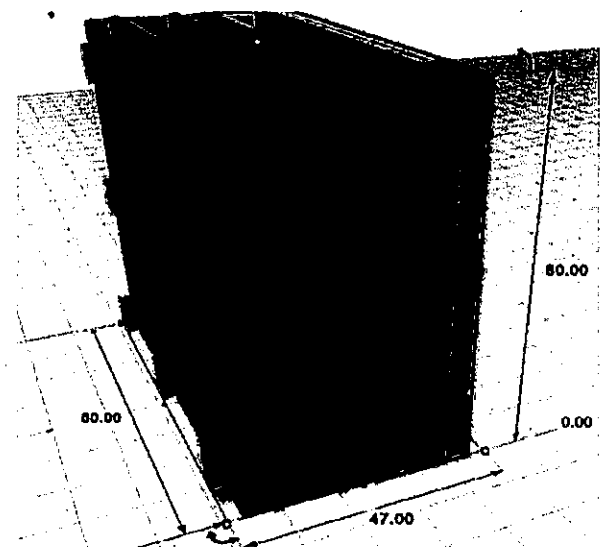
***OTHER PROJECTS FUNDED BY DOST***

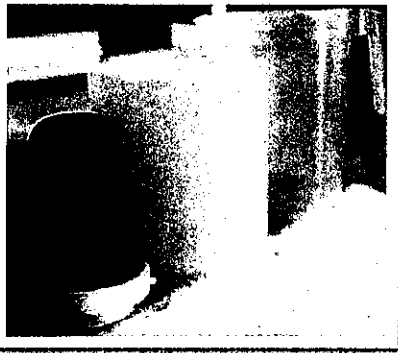
**Nanostructured Electrocatalyst Composites for Direct Fuel  
Cell: Preparation, Characterization and Performance Evaluation**

The project aims to use ethanol as a safe substitute for toxic methanol in fuel .

To come-up with a cost efficient fuel cell, the project is undertaking R & D activities using platinum-tin (PtSn) and palladium-nickel (PdNi) composites.

These alternative combinations will be tested for their capacity to electrocatalyze ethanol to determine if they could make fuel cell technology more sustainable.





### Ceramic Water Filter

The filters are coated with a nano-antimicrobial agent and made from red clay which is abundant in many Philippine provinces. This filter can purify tap water, deep well water, and raw water from springs and is available at capacities of 1.5 and 6.0 L, making it suitable for household use.

### ECO-SEP

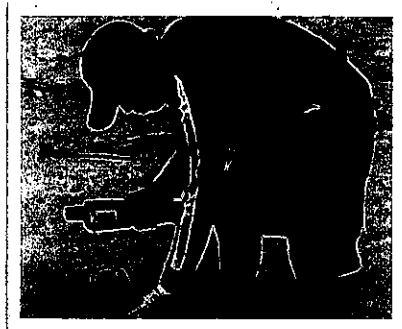
Eco-Sep, or the Eco-Friendly Septic System, is a self-sustaining, low-cost, and portable/movable wastewater treatment system that cleans up domestic wastewater and is equipped with organominerals to help sustain microbial growth which assists in the treatment of wastewater.



## MinERS Program

Begun in October 2013 and completed in September 2016, the Mineral Extraction with Responsibility for Sustainability or MinERS Program work for the sustainable growth and development of the small-scale mining industry.

The program aims to address concerns in small scale-mining industry, particularly the development of technologies that prohibit the use of mercury in order to promote better mine practices and technologies among industry players.

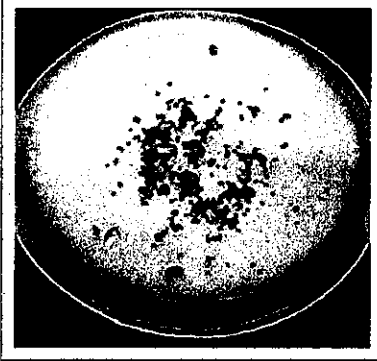


The MinERS Program consisted of 5 projects.





***MinERS Project A: Non-Hazardous Methods of Gold Extraction for Philippine Small-Scale Mining Applications***



This project is conducted to determine the feasibility of applying mercury and cyanide-less methods of extracting gold for small-scale mining by leaching the gold concentrate using hypochlorite and precipitation.

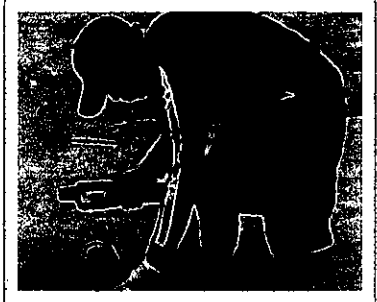
***MinERS Project B: Modeling of Fate and Transport of Heavy Metals in Surface Waters from Source at Mining Site to Downstream Receiving Waters***



This project aims to assess the human health hazards posed by tailings and wastewater discharges from mining activities by developing a transport model that can determine the expected concentration of heavy metals along any location reached by the surface water. Mercury, lead, and arsenic were considered for the study.



***MinERS Project C: Optimizing the Effectivity of Coco Peat Filter Bed in Field Applications***



This aims to evaluate and optimize the effectiveness of coco peat filter bed for wastewater treatment by monitoring parameters such as physicochemical and heavy metal concentration of treated mining effluent.

***MinERS Project E: Nanofiber Membrane Adsorption for Third Level Waste Water Treatment Method for Small Scale Mining Operations***

This project aims to enable miners to comply with the environmental protection laws and guidelines by designing an integrated wastewater treatment system using nanofiber membrane as a third level treatment facility.

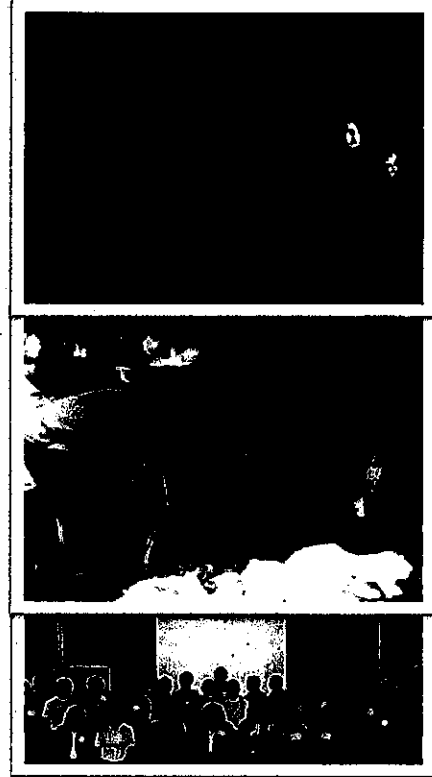




***MinERS Project G: The Gold and Copper Chase: Life Cycle Analysis of Sustainable Small Scale Production System***

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This project aims to develop practical systems for the sustainable mining and extraction of gold and copper by investigating methods which will refine the recovery of copper and gold while minimizing wasted minerals.



***Smarter Agriculture***

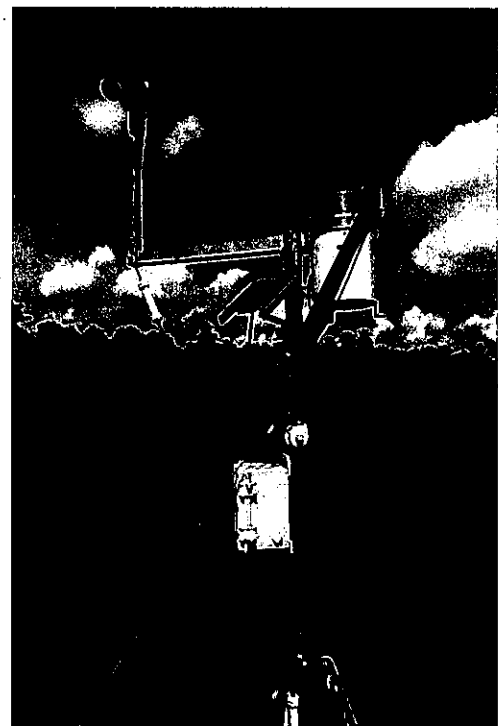
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Projects addressing the negative effects of climate change in the agriculture, aquatic, and natural resources sectors:

**Smarter Pest Identification Technology (SPId Tech)**- a mobile application that can identify agricultural pests in the field using image scanning.

**Cost-efficient Soil Moisture Monitoring System for Soil Water Deficit** - measures and monitors soil moisture

**Water Management Decision Support System (WAISS)** - estimates soil moisture deficit in annual crops like rice and corn and provides early warning for crop water stress



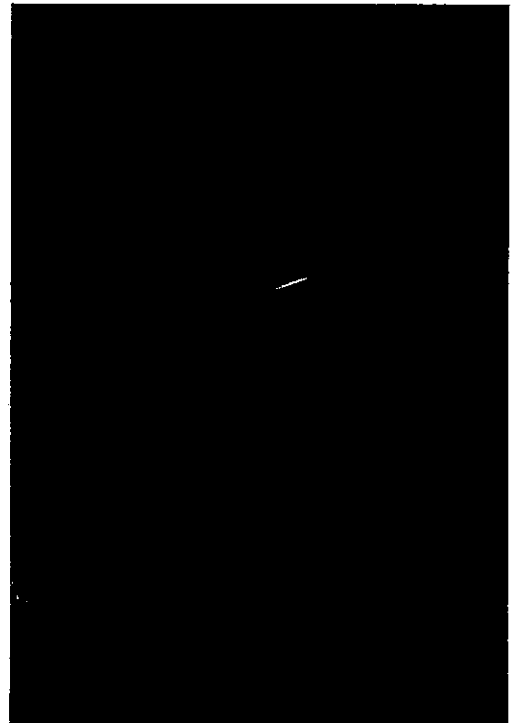


**SARAI Enhanced Agricultural Monitoring System (SEAMS)** - monitors in real-time the condition of the area planted to a crop through daily updated satellite images

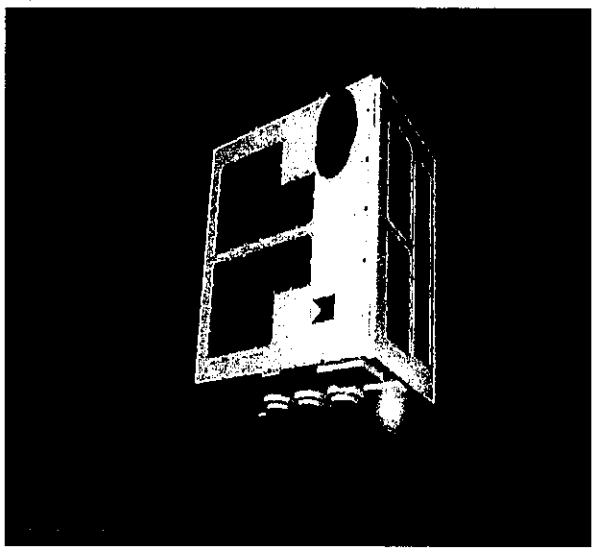
**Maize Nutrient Expert** - a system that provides comprehensive farm analysis

**Crop suitability maps**(for rice, corn, banana, coconut, coffee, and cacao) - shows three categories of crop production suitability – high, moderate, and marginal.

**Automatic Weather Stations (AWS) and Unmanned Aerial Vehicle (UAV)** - provide real-time weather data and aid in the statistical modelling for the crop forecasts and advisories.



## ***DIWATA-1: Philippine Microsatellite***



Joining the constellation is DIWATA 1, the first Philippine microsatellite to become part of the Asian consortium of microsatellites.

It is hoped to provide the Philippines with more data which are relevant to the country's diverse needs/applications for satellite imagery, especially for weather prediction systems, mapping, disaster management processes, and resource monitoring.

DIWATA-1 was launched and deployed into orbit in April 27, 2016.

# APEC Virtual Center Workshop 2016

19-20 October 2016

Prepared by Tom Sloan (Australia)

Acknowledgment to Dr Lance Heath

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## About Sustineo

- Sustineo is an Australian consulting firm that provides technical and management services to create positive and sustainable social economic change in Australia and across the Asia Pacific region.
- Sustineo specializes in research, evaluation, policy development, regulatory review and impact assessment across:
  - Economic development
  - Sustainability and climate change
  - Rural development
  - Peace and security
  - Audit and compliance



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# Sustainability and climate change

- Sustineo works to help address the social and economic factors associated with sustainability and climate change issues
- We design innovative and integrative approaches to help stakeholders understand the impact of climate change.
- We employ a systematic and holistic approach that recognises sustainability measures as an integral part of policy and technological development, not distinct from other drivers.

Lead Advisor – Dr Lance Heath



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## APEC-VC context

“APEC-VC is designed to promote the exchange of environmental business and the technology transfer to developing countries with a goal of contributing to preservation and restoration of our environments within the Asia-pacific region as well as around the world”

(<http://www.apec-vc.or.kr/>)

- The four pillars approach:
  - Research and Development
  - Technology Promotion
  - Policy and Economic Development and
  - Capacity Building.

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## Our Activities

- **APEC, Independent Assessment of the PPSTI.** The assessment highlighted the success of connecting with research institutions and facilitating R&D. Sustineo also noted the ongoing challenges of 'innovation' and industry stakeholder engagement.
- **APEC, Regulatory Reform – Case Studies on Innovation.** The project assessed the impact of regulations on innovation across a three APEC case studies: utility patents in Korea, pharmaceutical clinical trials in Malaysia, and urban water supply in Singapore and Australia. It investigated the linkages between regulatory reform, innovation and economic capacity building and distilled lessons for other economies in relation to improving innovation and uptake.

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## Our Activities (continued)

- **APEC, Case studies on structural reform – Telecommunications Testing and Certification Services in Chinese Taipei.** Sustineo assessed the impact of the APEC TEL MRA in relation to telecommunications technology industry. Sustineo highlighted the support the measures made of export industries, and identified lessons learn for member economies..
- **ASEAN, Supporting research and dialogue in consumer protection.** Sustineo conducted a large scale research project on consumer protection. The research surfaced key issues related to cross-border trade of products, mechanisms for ensuring quality in traded products and the importance of considering the Sustainable Development Goals.

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# Future actions and opportunities

1. Consider the benefits of aligning the work of APEC-VC, the SDGs, and Green Growth agenda
2. Pursue collaboration with Asia Pacific Network (APN) for Global Change Research
3. Promoting use of information technology for climate planning



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## 1. Aligning APEC-VC with the SDGs

- Goal 17: Strengthen the means of implementation and revitalize the global partnership for sustainable development,
- Goal 12: Ensure sustainable consumption and production patterns

“Innovation is embedded in the SDGs, together with advancing science and technology, as Goal 17, but science, technology and innovation must not be limited to SDG 17. They cut across all the SDGs as an important element of implementation.... It means questioning assumptions, rethinking established systems and procedures, and introducing new strategies. New technologies are important, but as a means to an end”  
(Secretary-General Ban Ki-moon)

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## 2. Pursue collaboration APN

- Scoping technology transfer workshop with APN for Global Change Research
- To consider how to engage the best partners and institutions in the region that are already making headway in technology transfer for a low carbon and climate resilient world.
- Potential to develop a framework that addresses the technology transfer needs of its member countries, particularly the barriers the countries are facing.



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## 3. Promoting use of information technology for climate planning

- Potential for information technology to help economies measure and respond to the challenges of climate change
- Challenge of measuring long term effectiveness of adaptation and capacity building efforts
- Pursing collaborations with ICLEI (<http://www.iclei.org/>) and Akvo (<http://akvo.org/>) to digitise ICLEI/Asian Cities Climate Change Resilience Network (ACCCRN) climate change adaptation toolkit. The toolkit enables local governments to assess their climate risks and vulnerabilities, and to formulate adaptive response plans accordingly.

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