BERITA ENSEARCH

JANUARY — JUNE 2015 / 1st — 2nd QUARTER

e-Bulletin at www.ensearch.org/resources/beritaensearch

ENSEARCH
For a Better Environment

BRIEF HISTORY OF ENSEARCH

ENSEARCH was formed in 1984 by a pioneer group of local professionals and academics from multidisciplinary backgrounds. Its first President (1984-2000) was Ir. K. Kumarasivam and its first Hon. Secretary General was Dato' Dr. Abu Bakar Jaafar. Today, ENSEARCH has more than 300 members consisting of corporate, individual and life members.

It is acknowledged that enhanced awareness and capacity building of organizations and individuals through education and training is essential to achieve the objectives of Malaysian Environmental Quality Act, 1974. Therefore ENSEARCH began formulating and implementing training programs to enhance the capacity for environmental management in Malaysia.

In addition, ENSEARCH organizes Tea Talks and Public Lectures to enhance awareness on pertinent and comprehensive issues on the environment.

ENSEARCH has also been actively involved in dialogue sessions with relevant authorities in development of legislative and regulatory frameworks that are supportive of good environmental management practices.

In recognition of ENSEARCH's objectives, it has been given tax-exempt status whereby the donations to ENSEARCH are exempted by from tax.

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"To waste, to destroy our natural resources, to skin and exhaust the land instead of using it so as to increase its usefulness, will result in undermining in the days of our children the very prosperity which we ought by right to hand down to them amplified and developed."

- *Theodore Roosevelt* -

EDITOR'S NOTE

ENSEARCH

is a non-profit association of organizations, professionals, students and people with interest in learning and promoting effective ways to manage the impact of human activities on the environment.

We at ENSEARCH believe that everyone is responsible for managing and mitigating the impacts of their corporate, professional and daily living activities on the environment.

ENSEARCH is also involved in indigenous fruit tree species conservation and poverty eradication through its project Cyber Plant Conservation Network www.cpcnet.atbioversity.net

Hi members !

Welcome to our first edition of the BERITA for 2015. We've had some changes in the personnel lately and I am pleased to say that we now return with a solid team backing the ENSEARCH Secretariat, with the appointment of Sharon and Benedeth as the Senior Projects Officer and Project Officer respectively.

ENSEARCH has been busy in the half of 2015 with many activities, such as trainings, forum and technical visits. Among the major events to date were the K. Kumarasivam Endowment Fund (KKEF) Memorial Public Lecture Young Environmentalist Award 2014 held in January, as well as the ENSEARCH Annual General Meeting (AGM) which took place in May. At the AGM, there were no major changes in those at the helm of ENSEARCH as most of the office bearers were either re-elected or were still serving their two-year term.

Looking ahead, there are many exciting programmes ahead for this year with several trainings and seminars in the pipeline. There is plenty in store for all of you members out there, and we look forward to another productive second half of 2015 from ENSEARCH.

To our Muslim friends and members, I take this opportunity to wish you all "Selamat Berpuasa" and of course a very festive "Selamat Hari Raya Aidil Fitri".

KHOO BOON KEAT
Chairperson,
Website & Publication

OUR VISION

"Malaysians are environmentally aware and are committed to taking personal responsibility to manage and mitigate the impacts of their corporate, professional and daily living activities on the environment"

OUR MISSION

"To promote excellence in environmental management among organizations, professionals and interested persons."

PROFILE OF COUNCIL MEMBER

Geetha P Kumaran

'Ecology had a good balance of outdoor field research and indoor 'classroom' study and this set the foundation for Geetha P. Kumaran's passion in environmental management. Upon graduating from University Malaya (UM) with an Honours Degree in Ecology, Geetha was the offered a full scholarship & fellowship to be in the pioneer batch of the Masters programme in Biotechnology at UM. She was the first to graduate amongst the five of them!

Fast forward, Geetha joined ENSEARCH in 2003 and is now in her 12th year as the Honorary Secretary General. She has made numerous contributions to the organisation including being the Organising Committees and Technical Committees of Ensearch Conferences such as the 'Waste Management Conference and Exhibition 2011' and the inaugural 'Sustainable and Environmental Management Conference and Exhibition 2013'. She has also been the Chairperson of several environmental forums including the recent 'Forum on Environmental Legislation' May 2015. Geetha also represents ENSEARCH as an alternate member of the Environmental Quality Council of Malaysia, a Panel Review member of the DOE Handbook for EIA guidelines (2013-2014), a Panel Member of the DOE-NGO Forum on EIA Amendment, the Chairperson for CIDB WG4 on DIY ISO14000 for Contractors, a member of SIRIM's ISCZ-M Committee on Industry Standards on Environmental Management and many more. She is a voice for ENSEARCH literally on radio and television where she has been interviewed on issues like solid waste and water.

She is the Lead Consultant of Europasia Engineering Services and a Director of Enviro Enhance. With the Department of Environment (DOE) Malaysia, Geetha is registered as an Environmental Consultant, an EIA Consultant and an Environmental Auditor. Her passion and work has gotten her directly involved in projects pertaining to EIAs, Post EIAs, EMPs, related studies and also for projects involving wastewater treatment systems. With her background in wastewater treatment acquired during her Master's degree, she is also well-versed in putting together technical documents and trouble shooting for wastewater treatment plants. As a Lead Consultant, she is responsible for Project Management of EIAs in order to obtain the necessary approvals.

She is presently actively involved in conducting Post-EIA monitoring, auditing and EMP awareness training courses. As a testament of her direct involvement in on site compliance matters, her Post EIA sites have been chosen as study sites by the Department of Environment, like the Sering Ukay Development for sample development of hill slopes and Jade Hills development for sample mixed development.

As emcee for KKEF

PROFILE OF COUNCIL MEMBER

Geetha P Kumaran

'Water' said Geetha passionately, is and will be one of the biggest challenges in Malaysia. Our habit of being wasteful, not thinking things long term and planning for it, our weakness in not investing and using the latest technology, will put Malaysia in peril of such a precious natural resource. Water security is a national issue. Private sector, the authorities, professionals and society must play their part and put this in perspective for our own sake.

Geetha also volunteers her time to MSWME, Malaysian Water Partnership and the JKR Committee on Environment amongst others. She finds association work very rewarding. Her pet charities are WWF and MAKNA. An alumni of ACS, Kampar (Perak), Geetha's inspiration are her devoted mother (still strong, fit and always in a 'sari') and Prof. Phang Siew Moi (of UM). As the youngest of four siblings, she enjoys meeting people from all walks of life and is shown in her involvements in PTAs of her daughters' schools. Weekly, she finds time to do yoga and dance. Her pride and joy is her family; teenage daughters Divya and Darshana, Dinesh her husband. Being this passionate and busy, what are her plans in the future?-Geetha smiled as she HAD planned to retire. In the meantime, she is taking the middle path to have more flexible working hours thus, have more time to train and capacity build others. In the medium term, she hopes to obtain a PhD. Now that she is finished an MRT audit, catch her in action as trainer for 'Environmental Compliance for Construction Site Personnel' this July!

Husband Dinesh, daughters Divya and Darshana

ACS Kampar school reunion 2012

SEM 2013

FEATURE

Global Warming Indicator using Environmentally Extended Economic Input Output Analysis Planning

By Farah Ayuni Shafie*[1,2], Dasimah Omar[1] and Subramaniam Karuppannan[2]

[1]Faculty of Architecture, Surveying and Planning, Universiti Teknologi MARA, Shah Alam, Malaysia
[2]Faculty of Health Sciences, Universiti Teknologi MARA, Puncak Alam, Malaysia

ABSTRACT

Sustainability is the upkeep of biodiversity to ensure the availability of resources in the future. Understanding the requirement of a geographical area and its ecological and economical resource is an important requirement in the management of a sustainable city. As the world community's concern over global warming and climate change impacts is growing, research addressing such impacts also advances.

Urban metabolism acknowledges a city with a system flow between it and the environment. One of the viable methods in urban metabolism is economic input-output analysis. The idea of the analysis is to derive an environmental indicator from available economic data. The environmental impacts with global warming indicator is addressed in greenhouse gases emissions.

The underlying principle of this method is to extend the Leontief matrix which is previously used for economic studies to entail environmental aspects. This article discusses the prospect of environmentally extended economic input output tool to evaluate direct and indirect environmental impacts associated with the consumption of goods and services by household individuals. This method relies on national or regional economic input output table and on greenhouse gases emission intensity. The merits and drawbacks of this accounting approach are also included.

This approach is also applicable to other nations, municipalities or cities where local household expenditures data are not available. Advancement and development in urban metabolism is anticipated to provide an informed and rapid evaluation on the existing city environmental performance and assist in decision making of future environmental assessment and urban development planning.

Keywords: economic input-output analysis, global warming, environmental assessment

* *Corresponding author: farahayuni@salam.uitm.edu.my*

INTRODUCTION

Urbanization can cause environmental impacts to the cities as a result from the increasing population, high demand of natural resources and environmental pollutants production. In urban planning, scientific and technical knowledge are assimilated and applied in a public sphere where the activities are in predictive and futuristic nature. Generally, the process occurs through a public discourse between all groups and individuals interested in and/or affected by urban development and management activities pursued by the public or private sector. The stakeholders in urban and regional planning agencies are required to foresee the societal problems that may arise and arrive with direct and tangible solution.

Urban metabolism analysis emerged from a growing understanding of the limited availability of fossil fuels and their impacts on the environment as well as ideas about efficiency of that use (Holmes & Pincetl, 2012). Because of growing concern over global warming and climate change, urban metabolism accounting method also develop to take into account carbon and other greenhouse gases metabolism. The urban metabolism framework is seen as a potential to provide a rigorous tool for analyzing relevant energy pathways at different scales and can lead to the development of management systems that increase resource use efficiencies, recycling of wastes and conservation of energy.

ENVIRONMENTALLY EXTENDED ECONOMIC INPUT OUTPUT ANALYSIS

Though typically applied as a method of accounting for total energy and materials inputs and outputs into cities, urban metabolism has offered significant value for revealing urban populations focus and speed up consumption over time. Most urban metabolism researches use “top-down approach” where coarse or highly aggregated data are utilized and environmentally extended input output analysis falls into this category. Input-Output Analysis is an economics term that refers to the study of the effects that different sectors have on the economy as a whole, for a particular nation or region.

The objective of the Input-Output Analysis is to provide a simplified overview of the environmental impacts caused by the residential and transport demands of the city in a country (Minx et al, 2010). The analysis of city characterization is important as to get a broader picture of the environmental impacts of the city. The environmental impacts of the cities are increasing due to the expanding population, growing demands on natural resources and increasing production of pollution to the environment (Dias et al, 2014). Combining economic elements with energy flow analysis allows the construction of environmental input-output tables which can help to refine the understanding of the actors in urban metabolic processes (Zhang, 2013).

DATA COLLECTION PROCEDURE FOR ENVIRONMENTALLY-EXTENDED ECONOMIC INPUT OUTPUT ANALYSIS.

Environmentally-extended economic input output analysis can be conducted at regional, national, city or household level. For further discussion, a case study for Barcelona, Spain will be used. For this instance, a Catalonia economic input output data where Barcelona is located is used.

Firstly, the monetary fluxes within the economic sectors were obtained. The Catalonia economic Input Output table (data for the year 2005) is provided by the Statistical Institute of Catalonia. It is composed of 14 economic sectors. For this study, the 14 economic sectors Input Output data is used to narrow down the economic sectors due to limitation of data on Catalonia greenhouse gases emission by economic sectors. These 14 economic sectors comprise of almost 96% of Catalan economy with the value of 458 Million Euro (M€). Inverse Leontief matrix is calculated by using I-O equation as following:

$$X - AX = Y \quad (1)$$
$$(I - A)X = Y \quad (2)$$
$$X = (I - A)^{-1} Y \quad (3)$$

With

X = column vector of industrial gross output
Y = column vector of final demand
A = matrix of coefficients that indicate the amount of one economic sector product needed to produce one unit of another economic sector product.
I = Identity matrix (matrix with "1" in the diagonal, "0" in all other fields)

(I-A)-1 = "Leontief Inverse (Matrix)"

Then, the total final of each sector is divided by Catalonia's total population to determine average individual consumption. The "inverse Leontief" matrix is multiplied by the final consumption vector (Y) to get gross output (X). Greenhouse gases emission for each economic sector is obtained from 2nd National Communication to the United Nations Framework Convention on Climate Change (UNFCCC). Finally, the intensity of each considered sector is calculated by dividing the greenhouse gases emission with the calculated gross output.

ANALYSIS AND OUTCOMES

The final result of an economic input output analysis is an intensity factor in the form of kilogram carbon dioxide equivalent per currency. With the intensity factor, environmental impacts from different regions or cities can be compared and ranked accordingly. This study identifies the sectors with the largest impacts to enable the risk managers to prioritise strategies in reducing the impacts towards sustainable consumption. The quantitative analysis at both macro and micro level of environmental impacts due to global warming and resulting from economic sectors in Barcelona is expressed in measurable and comparable units.

Extract of an output from the regional study in Barcelona, Spain (Shafie et al, 2013) is presented in Table 1.

Table 1 : Greenhouse gases emission intensity （in kg eq. CO2/€ ） for each economic sector

Type of economic sector	GHG emission (kt eq. CO_2/year) for 2005	Gross output (M€)	GHG emissions intensity (kg eq. CO_2/€)
Products of agriculture, livestock, hunting, forestry and fishing	4360	8265	0,5275
Products of extractive industries	4506	3694	1,2200
Manufactured products	15002	103421	0,1451
Electricity, gas and water	9429	7369	1,2796
Construction work	13714	15805	0,8677
Transport and communications	14736	23134	0,6370
Health services and social services	2801	11887	0,2356
Real estate and business services	13714	43387	0,3161
Education	2801	7025	0,3987
Other social services	2801	11828	0,2368

The Greenhouse Gases Emissions for Catalonia Inventory is also obtained from Statistical Institute of Catalonia. It appears that for this regional greenhouse gases emission inventory, some economic sectors are lacking of data. The inventory only has seven general categories with limited economic activities namely process energy, industrial process, agriculture and treatment of waste. Therefore, only data that are available and significant are included in this study.

Designation of greenhouse gases emission is based on assumption and estimation. The economic sectors in input–output table are matched with the economic sectors from the greenhouse gases inventory. Some economic sectors are self-explanatory. Assumptions are made to economic sectors lacking the greenhouse gases emissions data. The intensity of economic sectors with lack of data in terms of gross output or greenhouse gases emissions is considered as the same with similar activities （such as for education and other social services ）. Greenhouse gases emission intensity is required to determine the Global Warming Potential （GWP ） by economic sectors and also total greenhouse gases emission for a region or a city.

Now, the global warming potential for each economic sector can be identified. Figure 1 summarizes the impact assessment for Barcelona. The total emissions for Barcelona amounted to 24.44 kg CO2eq./cap/day. From the analysis, it is shown that the demand for manufactured products creates the highest greenhouse gases emissions in its whole supply chain （7.24 CO2eq./cap/day ） followed by the real estate and business services with 4.83 CO2eq./cap/day. The third highest greenhouse gases emitter is from the transport and communications sector with 3.11 CO2eq./cap/day ）. For manufactured products sector, the highest contributor emission is directly emitted by its own sector.

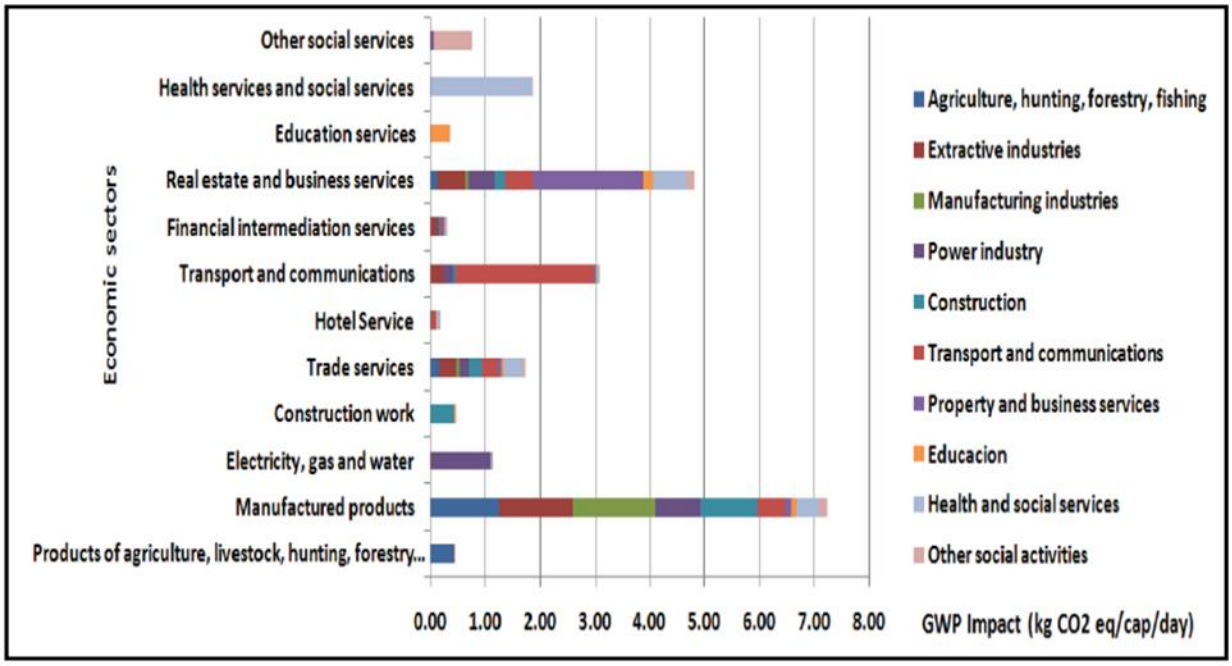

Figure 1: Economic activities in terms of CO_2 emission

PROPOSALS FOR FUTURE RESEARCH WORK IN THIS AREA

Understanding the limitations of this model allows for improved impact studies and a more precise interpretation of the results. Key assumptions of this model typically include fixed production patterns and no supply constraints. Assumptions about the amount of inputs that are supplied from the local region are also important. Ignoring these assumptions can lead to inaccurate impact estimates.

The future undertaking towards sustainable economy should strive towards better environmental performance from these economic activities that ultimately would result in lower carbon dioxide intensity. This output may be translated into current economic and urban policies in establishing a city, a nation or a region performing with lower greenhouse gases emission. The distinctive characteristic of environmentally extended economic input output analysis value as a sustainable tool for environmental assessment is its ability to be down-scaled and up-scaled according to industries, local municipalities and smaller geographical region.

Three major topics in which more studies on urban metabolism are required:

1. The analysis of carbon-related metabolic process can be strengthened by promoting studies in include underlying mechanism of an urban system such as energy and food consumption. These studies are essecntial so the impact of urban metabolisms on global climate change can be accounted.
2. Urban metabolics are hybrids in nature where natural and artificial components converge along the pathways. Therefore, better definition of the control points of the system and the path connection and their fluxes may construct a central index which can be optimized and regulated.
3. The impact of human factors on metabolic flows are known but more understanding on the favoured pathway over another. Additional survey information on human factors can be costly in terms of time and resources, but it can provide more accurate results especially in the human and environment interrelation.

CONCLUSION

Urban metabolism in general and economic input ouput analysis in particular, is a multi-disciplinary and integrated platform that examines material and energy flows in cities as complex systems as they are shaped by various social, economic and environmental forces. As the demands for higher inputs of materials and energy to sustain the growth of cities continue to increase, understanding the metabolism and the input output flow of cities becomes extremely important for policy makers and decision makers especially in planning a city or neighborhood. Improvement on available national economic input output reporting and greenhouse gases reporting should be emphasized because viable data would result in viable output. This approach can also be applied nationally in the environmental assessment such as in the planning of Strategic Environmental Assessment and the Environmental Impact Assessment. With the expanding of approaches towards urban metabolism, the pathway towards faster and comprehensive evaluation of the existing or future cities can be materialized. This informed and practical approach can be used to establish a national framework and greenhouse gases reduction towards sustainable cities and green economy.

ACKNOWLEDGEMENT

A concerted effort in establishing the database for Southern Europe has been initiated by the EcoTech Sudoe group under the European Commission initiative. Similar studies had been conducted and improved for three different cities; Aveiro in Portugal, Marseilles in France and Barcelona in Spain. The authors would like to extend our gratitude to the Industrial Ecology group at Universitat Autonoma de Barcelona for the knowledge transfer and making this approach viable for us in Malaysia.

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EVENTS & ACTIVITIES

FORUM ON ENVIRONMENTAL LEGISLATION 2015 (FEL 2015)

In conjunction with ENSEARCH 's 31st Annual General Meeting

Date : 14th May 2015 (Thursday).

Venue : Kelab Golf Negara Subang (KGNS), Kelana Jaya.

Keynote : **Title: Environmental Legislation in Malaysia: The Past, The Present and The Future.**
Dato' Dr. Ahmad Kamarulnajuib bin Che Ibrahim.
Deputy Director General (Development), Department of Environment (DOE), Malaysia

Papers : **1) Title: Clean Air Regulations 2014: How is Industry Reacting?**
Mr. Peter Ho Yueh Chuen,
Director, ERE Consulting Group &
Mr. Tan Poh Aun
Principal, SoxNox Asia Sdn Bhd

2.) Title: : Future Requirements of EIA.
Pn. Norlin binti Jaafar
Director, Assessment Unit, DOE, Malaysia

3) Title: Environmental Legislation for Safeguarding our Waters.
En. Mohd. Sani bin Mat Daud
Senior Principal Assistant Director, Enforcement Unit, DOE, Malaysia

4) Title: Environmental Legislation for Forestry Protection.
Dato ' Hj. Nor Akhirrudin bin Mahmud
Deputy Director General of Forestry, Policy & Planning,
Forestry Department of Peninsular Malaysia

5) **Title: Environmental Legislation for Wildlife Protection.**
Mr. Allan Rodrigo Balang
Principal Assistant Director, Department of Wildlife and National Parks, Peninsular Malaysia

Panelists : Pn. Rohimah (representing Pn Norlin), En. Mohd Sani Mat Daud, Dato ' Dr. Nor Akhirrudin, Mr Allan Rodrigo Balang and Mr. Peter Ho, with Ir. Lee Heng Keng (moderator)

SUPPORTED BY :

Department of Environment Malaysia

EVENTS & ACTIVITIES

FORUM ON ENVIRONMENTAL LEGISLATION 2015 (FEL 2015)

In conjunction with ENSEARCH 's 31st Annual General Meeting

Summary :

The Forum on Environmental Legislation 2015 held in conjunction with ENSEARCH 's 31st AGM on 14th May 2015. This Forum aims to ensure current and future Environmental Legislative requirements are made known to practitioners and industries especially ENSEARCH 's Members. Approximately 100 participants were present.

Keynote: Environmental Legislation in Malaysia: The Past, The Present and The Future

This keynote paper was presented by YBhg Dato' Dr. Ahmad Kamarulnajuib Che Ibrahim, Deputy Director-General (Development), DOE. He presented the timeline of Malaysia 's Environmental Legislation history, which dated back to 1972 and also highlighted the accidents that leads to the need for more environmental legislation. He stressed on sustainable use of natural resources and that the ISO14000 certification is equally essential to support DOE efforts. He also explained Sec 32, 33 (a) and 34 (a) which focuses on Competent Persons for Report Submission and Scheduled Waste regulation. DOE wants all of us to be the eyes and ears to help with enforcement.

Paper 1: Clean Air Regulations 2014: How the Industry Reacting?

This started with Mr Peter Ho Yueh Chuen identifying inconsistencies and gaps found in the Clean Air Regulations 2014 (CAR). The presentation evoked a question: if the oil palm processing plants were exempted from black smoke emission compliance and recommended a need for new legislation.

Mr Tan Poh Aun followed up with Paper 1 highlighting the confusion faced by the industries wishing to follow the requirement in the 'Guidance Documents for Fuel Burning Equipment and Air Pollution Control System' with the non-existence of Annex 9. He also raised two issues:

- Which is the authority for acceptability of new Rain Cap Design – DOE or Professional Engineers (PE).
- Unregistered batching plants being moved around, depending on different state legislative requirement should be addressed under CAR2014.

Paper 2: Future Requirements of EIA

Pn Norlin bt Jaafar, focused on presenting the new EIA Policy and current state of amendment of EIA regulation. She shared the principals of the new EIA Policy; 3P (Proactive, Participatory, Practical), 2C (Credible, Cost) and 1T (Transparency) and elaborated on the amendments of the EIA regulation.

Paper 3: Environmental Legislation for Safeguarding our Water

En Mohd Sani bin Mat Daud highlighted the amendment of the EQA in 2012 which are on the changes in Section 10-18, 25, 34A and 34Aa (to address water pollution abatement) and sources are now defined as non-point and point. Apart from that, he also spoke about the DOE 's efforts in waste water management including community projects 'River of Life' (ROL), modeling techniques to predict impact of water discharge on water quality, in-situ testing and others.

EVENTS & ACTIVITIES

FORUM ON ENVIRONMENTAL LEGISLATION 2015 (FEL 2015)

In conjunction with ENSEARCH's 31st Annual General Meeting

Paper 4: Environmental Legislation for Forestry Protection

Dato' Haji Nor Akhirrudin's bin Mahmud presentation covered the National Forestry Policy 1978 (Rev 1992), Sustainable Forest Management, Selective Management System (SMS) for Timber Production and Malaysian Criteria and Indicators for Forest Management Certification which are the tools use by Forestry Department Peninsular Malaysia (FDPM) for forestry protection. Dato' also covered several important types of forest certification and regulation.

Paper 5: Environmental Legislation for Wildlife Protection

Mr Allan Rodrigo Balang shared the four main Legislations enforced by the Department of Wildlife and National Parks; Wildlife Conservation Act 2010, National Parks Act 1980, International Trade in Endangered Species Act 2008 and Taman Negara Enactment 1938/39 and also challenges in enforcing the legislations. Mr Rodrigo further explained the Wildlife Conservation Act 2010 in terms of 1st schedule and 2nd schedule including, classification animals; International Trade in Endangered Species Act 2008 covered by 7 management authorities, penalties based on quantity/volume, 3 regulations in Appendix I, II, III; CITES and the jurisdiction of management authorities.

Panel Discussion and Q & A

Many questions were raised during this session mainly on EIA; regulations, requirements and reporting. Others included the differences in forest status terminology ('Permanently Reserved Forests' and 'Wildlife Reserves'), synchronization of State and Federal Legislations, incentives available for companies applying green technology and marine related enforcement and regulatory bodies.

Papers presented at FEL 2015 are available at

http://ensearch.org/resources/forum-on-environmental-legislation-2015-fel2015/

SNAPSHOTS

EVENTS & ACTIVITIES

PETRONAS PENAPISAN (MELAKA) SDN BHD TECHNICAL VISIT

Date : 5th February 2015 (Thursday)
Time : 7:30AM - 4:00PM
Venue : Petronas Penapisan (Melaka) Sdn Bhd
76300 Sungai Udang, Melaka.
Summary :

On the 5th of February, ENSEARCH organized a technical visit to Petronas Penapisan (Melaka) Sdn Bhd. A total of 25 participants, which comprised of ENSEARCH members, non-members and ENSEARCH secretariats joined the visit. The objectives of the visit are to create awareness and educate the participants to understand better the process involved in effluent treatment, safety and environmental management in the refinery. For environmental protection, the refinery complex is designed to reduced effluents discharged and emission. Two drainage systems made up of an oily sewage system and surface water drainage system were installed. For the oily water, the drain is connected to an effluent treating system where the oil is separated from the water and sent back to the process units to be reprocessed. The wastewater treatment plants utilises a microbiological process where microbes "digest" and breakdown the dissolved oil in the wastewater. The oil-free water is then discharged to the sea. Surface runoff water goes to the surface drains and finally into two ponds where water goes into a stream and river. The quality of the water in both ponds is monitored on a monthly basis. There are also ground-water monitoring wells installed to monitor ground water quality. A sludge farm to process the sludge from the effluent treatment system is also available. At the sludge farm, to treat the sludge, phytoremediation process (a process where green plants are directly used to stabilize or reduce contamination in soils, sludges, sediments, surface water, or ground water) is used. For emission, a flare with scrubber is installed to minimize particulate and hazardous gas emission to the atmosphere. The old method of open flaring is replaced with an innovative flare gas recovery unit where fuel is recovered. The air quality is monitored on a quarterly basis. For other by product such as waste heat from the natural gas turbine generator, it is recycled to generate electricity via Co-Gen (Cogeneration) process. For excess oxides of sulphur, it is captured and recovered by converting it into solid sulphur and other product via sulphur recovery incineration unit. It was an informative visit experienced by the participants, however it was unfortunate as the visit to the plant area was not possible because of technical problems at the plant system at that time.

PETRONAS Penapisan (Melaka) Sdn Bhd Technical Visit Group Photo

EVENTS & ACTIVITIES

K. KUMARASIVAM ENDOWMENT FUND (KKEF) MEMORIAL PUBLIC LECTURE & YOUNG ENVIRONMENTALIST AWARD 2014

Date : 29th Januaryry 2015 (Thursday)

Time : 5:00PM - 7:30PM

Venue : Dewan Presiden, Kelab Golf Negara Subang, Jalan SS/7, Kelana Jaya, 47301 Petaling Jaya.

Speaker : YBhg. Tan Sri Musa bin Tan Sri Hassan

Summary :

The KKEF Memorial Public Lecture and Young Environmentalist Award was held on the 29th January 2015 at Kelab Golf Negara Subang. KTA Tenaga Sdn. Bhd. of which Ir. K. Kumarasivam was a founding Partner, supported by providing RM 2,000.00 towards this event. The Speaker for the Public Lecture was YBhg. Tan Sri Musa bin Tan Sri Hassan, retired Inspector General of Police. The Public Lecture title "Environmental Crimes " was delivered by YBhg Tan Sri Musa bin Tan Sri Hassan drew interest of approximately 60 attendees both ENSEARCH members and the general public who were from diverse professional backgrounds.

"Environmental Crimes" lecture by YBhg. Tan Sri Musa bin Tan Sri Hassan during KKEF Memorial Public Lecture and Young Environmentalist Internship Award

The tenth recipient of the KKEF Young Environmentalist Award is Ms. Suzane M. Samy who holds Bachelor 's Degree in Resource Biotechnology and Masters in Environmental Management, specialising in coastal zones. She was chosen because she has demonstrated the ability to focus on a problem area and was able to articulate it well hence the Internship would benefit her. As part of the award, Ms. Suzane received a two-week (2nd March—14th March 2015) all expense paid Internship program with the Center for International Forestry Research (CIFOR).

The Intern in front of CIFOR's Lobby

ANNOUNCEMENTS

ENSEARCH
For a Better Environment

TRAINING

ENVIRONMENTAL COMPLIANCE FOR CONSTRUCTION SITE PERSONNEL

Date: 29th & 30th July (Wednesday & Thursday)
Time: 8:30 am — 05:00 pm
Venue: ENSEARCH Training Centre (*Map enclosed*),
30-3, Jalan PJU 5/16, Dataran Sunway, Kota Damansara,
47810 Petaling Jaya.

Overview

Site Compliance to latest requirements of the Environmental quality (Amendment) 2012 is seen to be lacking and needs continuous improvement. The improvements is expected to happen via education and training so that the understanding of the legislation is sound.

The training is tailored to promote higher level of compliance for site activities through capacity building and continuous learning. It is expected to address issues related to site specific developmental works with the ultimate objective to minimize any adverse impacts and reduce possibilities of the site being in a state of non-compliance.

Objectives

1. To inform and make aware the legislative requirements for environmental compliance at construction sites.
2. To educate site personnel on the aspects of environmental compliance in particular site erosion and sedimentation control, scheduled wastes management, housekeeping and record keeping;

Who Should Attend?

Environmental consultants, Environment Officers, Project Managers, site supervisors, Safety officers, Local and State government representatives who are interested to enhance their understanding of legislative requirements for site development

DOE - EiMAS
CPD Hours
Will be granted
To Registered Certified Environmental Professionals
HRDF Claimable - SBL Scheme

Training Fee

- **RM 900.00** (ENSEARCH Member)
- **RM 1000.00** (Non-ENSEARCH Member)

* *Register **3 or more** participants from the same organization to enjoy **10% discount***

- **RM 300.00** (ENSEARCH Student Member)
- **RM 350.00** (Student Non-ENSEARCH Member)

* To qualify for the student price, please submit a copy of your **Student ID** as proof

Trainer

Ms. Geetha P Kumaran

Ms Geetha who is a Registered EIA Consultant and Registered environmental Auditor with the Department of environment Malaysia has over 22 years of experience in the field of environmental consultancy. She is the Hon Sec Gen of ENSEARCH on a voluntary capacity since 2003 and thus has served many committees under the DOE's purview. She actively engages with the authorities on the needs for site compliance and is well equipped to provide solutions to specific site related issues.

Contact Us

Environmental Management & Research Association of Malaysia (ENSEARCH)

30-2, Jalan PJU 5/16, Dataran Sunway, Kota Damansara,
47810 Petaling Jaya, Selangor.

Contact Person: Ms. Benedeth
Phone: 03-6156 9807 / 08 Fax: 03- 6156 9803
E-mail: po@ensearch.org
Visit us on the web at http://ensearch.org

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Trainer's Biodata

Ms. Geetha P. Kumaran is an Ecology and Biotechnology Post graduate from the University of Malaya. She is a registered Environmental Impact Assessment (EIA) Consultant, Environmental Auditor (EA) with the Department of Environment Malaysia and Certified Erosion, Sedimentation, Storm Water Inspector (CESSWI) with EnviroCert International from USA. She has been a Lead Consultant with Europasia Engineering Services Sdn Bhd for more than 200 EIA's and Lead Auditor for numerous Post EIA Projects including the MRT Project.

Since 2003, she is holding office as the Honorary Secretary General of ENSEARCH, one of the largest environmental NGOs in Malaysia and is a current member of the pro-tem committee of the Institution of Environmental Professionals of Malaysia (IEPM), a body looking into the registration of Environmental professionals.

Ms. Geetha is ENSEARCH's alternate representative in the Environmental Quality Council (EQC), DOE Panel reviewer, CIDB Panel for the MCIEA Awards and one of the NGO reps on discussions on the Environmental Quality Act amendment. She is also actively involved as a trainer for EIAs and EMPs in ENSEARCH, CIDB and other bodies. She was also a JKR Contract Professional Staff responsible for contributions to EMP checklists, Bill of quantities and Environmental Technical Guidelines.

Ms. Geetha is passionate about ensuring our environment is protected by personnel who are knowledgeable and committed to comply with the comprehensive legislative requirement already in place locally.

Training Programme

Day 1

Time	Description
8:30 – 9:00 am	Registration of participants
9:00 – 10:15 am	Session 1: Introduction to EQA (Amendment) 2012
10:15 – 10:30 am	Q & A Session
10:30 – 10:50 am	Morning Break
10:50 – 12:30 pm	Session 2: Introduction to EQA (Amendment) 2012 (cont"d)
12:30 – 12:45 pm	Q & A Session
12:45 – 2:00 pm	Lunch Break
2:00 – 3:15 pm	Session 3: Understanding EIA and its re-quirements for compliance
3.15 – 3:30 pm	Q & A Session
3.30 – 3:45 pm	Afternoon Break
3:30 – 4:50 pm	Session 4: Understanding EMP and its requirements for compliance
4:50 – 5:00 pm	Q & A Session End of Day 1

Day 2

Time	Description
8:30 – 9:00 am	Registration of participants
9:00 – 10:30 am	Session 5: Site Erosion and Sedimentation Control
10:30 – 10:50 am	Morning Break
10:50 – 12:30 pm	Session 6: Scheduled Wastes Management
12:30 – 2:00 pm	Lunch Break
2:00 – 3:30 pm	Session 7: Documentation needs for site compliance
3.30 – 3:45 pm	Afternoon Break
3:45 – 5:00 pm	Collection of Feedback Form End of Training

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K . KUMARASIVAM YOUNG ENVIRONMENTALIST INTERNSHIP AWARD 2015

The Environmental Management and Research Association of Malaysia (ENSEARCH) would like to invite young Malaysians with a passion for environmental management excellence to apply for the **K. Kumarasivam Young Environmentalist Internship Award**. This award began in 2004 and will provide the selected individual with the opportunity to be placed as an Intern in a reputable center of environmental management excellence abroad for a period of at least two weeks. It will cover all expenses related to travel, accommodation and an allowance for living expenses. In previous awards, successful applicants have been placed in Korea, Germany, Australia, Thailand, India, Singapore, Sri Lanka, Taiwan, Hong Kong and Indonesia.

Candidates are invited to submit their: photocopy IC, current photo, current evidence of employment/education, detailed CV, essay (hardcopy & softcopy) and cover letter stating area of interest for internship and how they would benefit from the experience to be gained.

Selection Criteria:

1. Below 35 years old (at the time of application) as of 1 June 2015.
2. Anyone who is passionate about the environment is encouraged to apply.
3. Must have at least 2 years of experience in environmental related field - you can be a researcher, professional, civil servant or entrepreneur.
4. Detailed CV highlighting interests, leadership and accomplishments in your field of expertise.
5. Include at least two (2) professional referees.
6. Submission of a type-written (*Font: Times New Roman, Font Size: 12*) English essay of not more than 1,000 words, with thoughts and ideas, based on your personal experience, of current environmental issues/causes that you are passionate about. **Please refer to the Essay Format and Guidelines.**
7. Shortlisted candidates will be contacted for interview.

Upon return, the candidate will be required to write a report on what he/she has gained as an intern and share his/her experiences and findings in an ENSEARCH organized function.

Please submit the above to the KKEF Awards Committee at No. 30-2, Jalan PJU5/16, Dataran Sunway, Kota Damansara, 47810 Petaling Jaya and /or email to **kkef@ensearch.org** before **30th June 2015**. Further details about ENSEARCH and the KKEF awards are available at www.ensearch.org/kkef/ Tel: 03-61569807/08 Fax: 03-61569803.

ANNOUNCEMENTS

ENSEARCH
For a Better Environment
ENVIRONMENTAL MANAGEMENT & RESEARCH ASSOCIATION OF MALAYSIA

K.Kumarasivam Endowment Fund (KKEF) Young Environmentalist Internship Award Essay Submission Format and Guidelines.

Essay format:

1. Essay should be typed in Times New Roman font, size 12, 1.5 spacing.
2. The essay should be 1,000 words maximum.
3. Essay should be written in English.
4. Deadline for submission is **30th June 2015**.

Essay Content:

Contents must be based on thoughts and ideas, based on your personal experience, of current environmental issues/causes that you are passionate about. Too much out-sourced scholarly explanations are not recommended.

Essay Guidelines:

1. Your understanding of the environmental issues/aspects in general or one specific one that you are interested in or specializing. (200 words)
2. Your experience in dealing with these issues/aspects in the past and currently. (200 words)
3. What you would like to do under the internship to pursue your interest or passion mentioned above. (400 words)
4. What way could you bring benefit to the nation as outcome of your internship? (200 words)

ENSEARCH SABAH BRANCH NEWS

The ENSEARCH SABAH BRANCH NEWS; where all news and announcements related to our Branch in Sabah will be published.

SABAH BRANCH COMMITTEE 2014/2015

Chairperson	: *Ahmed Tariq Datuk Aripen*
Hon. Secretary	: *Tania Golinggi*
Treasurer	: *Dean Yee*
Committee Members	: *Vanessa Jipin*
	: *Nora Liew*
	: *Mohd. Iskandar Shah Ali*
	: *Vijay Panickar*
Co-opted Members	: *Eng Weng Hong*
	: *Datuk Adeline Leong*
Executive Secretary	: *Wynnie Jong*

ENSEARCH CALENDAR 2015

JULY

ENVIRONMENTAL COMPLIANCE FOR CONSTRUCTION SITE PERSONNEL TRAINING

29th & 30th (Wednesday & Thursday)

AUGUST

INTRODUCTION TO ODOUR DETERMINATION, MODELLING & ASSESSMENT

(LEVEL 1) TRAINING

11th & 12th (Tuesday & Wednesday)

SEPTEMBER

WATER QUALITY MODELLING TRAINING

9th & 10th (Wednesday & Thursday)

BIOLOGICAL ASSESSMENT TRAINING

29th & 30th (Tuesday & Wednesday)

OCTOBER

SUSTAINABILITY AND ENVIRONMENTAL MANAGEMENT 2015 CONFERENCE

27th & 28th (Tuesday & Wednesday)

The ENSEARCH Training Courses for 2015 is available in our website at

www.ensearch.org

ENSEARCH SECRETARIAT 2015

Executive Secretary	*: Ms. Edna Xavier*
Senior Project Officer	*: Ms. Sharon Woo*
Project Officer	*: Ms. Benedeth Flarine*
External Accountant	*: Ms. Tan Siok Yin*

"For a Better Environment"

ENVIRONMENTAL MANAGEMENT & RESEARCH
ASSOCIATION OF MALAYSIA (ENSEARCH)
30-2 Jalan PJU 5/16,
Dataran Sunway, Kota Damansara,
47810 Petaling Jaya,
Selangor Darul Ehsan.
Tel : 03-61569807 / 08
Fax : 03 - 61569803
Email : admin@ensearch.org
Website : www.ensearch.org