

BERITA ENSEARCH

Capacity Building NGO in the Environmental Field as an Enabler to Malaysian Professionals Growth

Brief History of ENSEARCH

ENSEARCH was formed on 26th November 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 competency of organisations 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 programmes 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 strengthens the environmental management practices in Malaysia. In recognition of ENSEARCH's objectives, it has been given tax-exempt status whereby the donations to ENSEARCH are exempted from tax.

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NOTE TO MEMBERS

Members are encouraged to write to us at admin@ensearch.org in the event of changing contact details. Corporate members are recommended to provide more than one contact (email address) to facilitate better dissemination of ENSEARCH information.

Editor's Note

Dear Members,

It has been an eventful 3rd quarter of the year and hope everyone is doing well!

The new cabinet is finally established and things are progressing at the reformed environmental related ministries. Hence we would like to congratulate the new ministers appointed, YB Dr Xavier Jayakumar as the Minister of Water, Land and Natural Resources (KATS) and YB Yeo Bee Yin as the Minister of Energy, Science, Technology, Environment and Climate Change (MESTECC).

Moving on, efforts from the ministries actively addressing the existing and arising issues could be seen, especially stakeholder engagements, be it closed door or public town hall sessions, followed by announced targets and commitments. Thus, all eyes are on several contentious issues revolving environmental conservation and pollution in the country.

As World Rivers Day is celebrated in September globally, the River of Life project in Kuala Lumpur calls for action from public to not just raise awareness but to conserve the river. I was involved in the ROLPOP outreach program earlier and is glad to see promising development of the project. In this bulletin, let's hear from Mr Sathis Venkitasamy, our recent KKEF Internship Award winner on River Address and how we could contribute by doing our own part.

In relations to forestry which global statistics indicate that deforestation is the second leading cause of global warming, YB Teresa Kok (MPI) announced no expansion of oil palm plantations to maintain Malaysia's over 50% forest cover and Dr Xavier (KATS) stated the reforestation plan citing Ulu Muda Forest Reserve case. It is exciting to hear that finally Ulu Muda is catching the right attention, as I was involved in the study of turning UMFRR into State Park with permitted ecotourism to prevent and stop logging activities in order to conserve the water catchment that provides water supply to Kedah and Penang. Let's also hear from Sen Tanp's opinion on deforestation and reforestation in Malaysia.

A few breakthrough on solid waste management also made the headlines. Following the applauded commitment from YB Yeo Bee Yin and MESTECC to "Breakup with Plastic" addressing single used plastics, the Federal Territories Ministry announced banned on plastic straws in federal territories starting 1st of January 2019. There are also joint efforts from a few ministries to tackle the illegal imported plastics issue. Grassroots NGO also voiced their concerns pertaining the Waste to Energy plant in Kepong. Looking at the alarming stats of waste generation and lack of public support on 3R (Reduce, Reuse, Recycle) practices, our country is in desperate need of sustainable waste treatment and disposal systems. In this bulletin, we have Mr Zaipul Anwar and Ahmad Rahman's paper on waste policies and practices to understand the situation in Malaysia.

Last but not least, we would like to also congratulate the Department of Environment's efforts to create awareness among youth and young generations in conjunction with the World Ozone Day celebration on 25th September. Let's **"Keep Cool and Carry on the Montreal Protocol"**!

Kelvin Diong

Editor

Publication and Website

Featured Member

ENSEARCH Council Member

Dr Hari Ramalu Ragavan was elected as a Council Member for 2018/2019 term. He has been with ENSEARCH as Member since 1998 and now serving as one of the Council Members. He is also the new Chairman for K.Kumarasivam Endowment Fund (KKEF), an Independent Board of Trustees under ENSEARCH.

Dr Hari was born in Teluk Intan, Perak in 1967. He started his formal education at Sultan Abdul Aziz School - Primary and Secondary. He completed Sijil Tinggi Pelajaran Malaysia (STPM) at Han Chiang High School, Penang and further his Bachelors Degree at University of Malaya.

Dr Hari later pursued his Master of Science (M.Sc) in Environmental Management at Lund University, Sweden and PhD at University of Manchester, UK.

As an environmental enthusiast, he started his career in FMM as Economic Officer in charge of Environment, R&D and Technology. In 1997, he worked for Centre for Environmental Technologies (CETEC) as Project Officer.

Dr Hari worked closely with ENSEARCH's founder, the late Ir. K. Kumarasivam on a number of ENSEARCH's projects while he was in CETEC. In 1998, he became the member of ENSEARCH.

He joined United Nation Development Programme (UNDP) in 2004 till 2013 as Programme Manager. At UNDP he worked in the sustainable development cluster and had developed, managed and monitored/evaluated at least 15 projects worth USD40 million.

He has advised UNDP, World Bank, USAID, UNIDO, UNEP and ADB in Sri Lanka, Papua New Guinea, Cambodia, Philippines, Nepal, Myanmar, Timor Leste and Vietnam as well as Malaysia in the area climate change and ecosystems management involving communities, private sector and local governments. Since 2015, Dr Hari works as a Principal Consultant with AKAR ASIA Consulting.

He is married to Dr. Mala Rajo Sathian who works at the Department of South East Asia, University Malaya. Dr Mala and himself are blessed with 2 daughters.



Dr Hari Ramalu Ragavan joined ENSEARCH since 1998.



Dr Hari with Dr Anthony Chiu, Board of Trustee Member for Asia Pacific Roundtable on Sustainable Consumption and Production (APRSCP) after a radio interview at BFM, the Business Radio Station.



Dr Hari with ENSEARCH Council Members during the photo session with Young Environmentalist Internship Award 2017 recipient, Mr Sathis Venkitasamy.

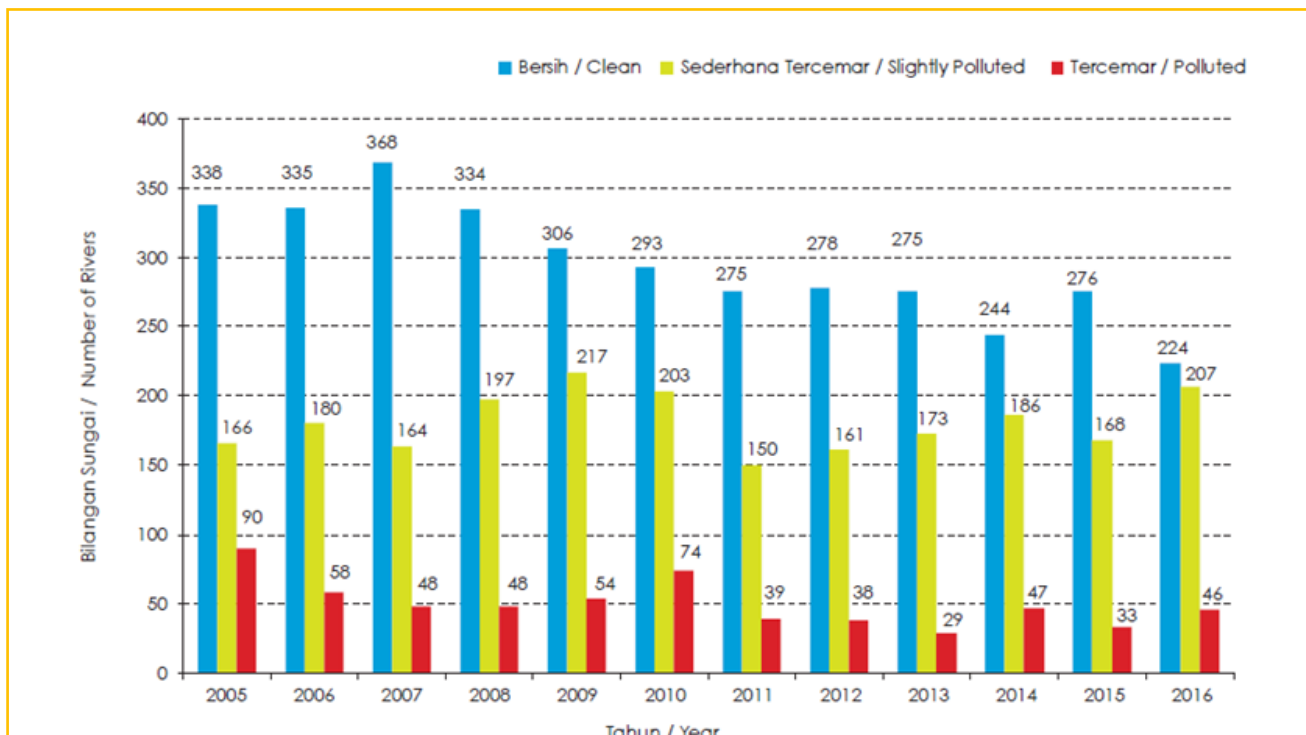
Featured Article

River Address: Key Component of River Care

By: Sathis Venkitasamy

Kuala Lumpur is the capital city of Malaysia, received its name at confluence of two rivers which are Klang River and Gombak River respectively. This phenomenon shows the key importance of river to Malaysia. Having close to 3000 rivers, Malaysia undoubtedly is the icon for this key freshwater source. Rivers in Malaysia are not only important for ecological aspect, but also serve as major drinking water source for country's population. More than 90% of Malaysian drinking water source comes from rivers. Despite its key role, this valuable freshwater source is not treated with care by our current generation. In 2016, only 47% of rivers monitored by DOE are clean compared to 57% in 2015 (EQR, 2016). The reduction of 10% within 10 years does not reflect a good development for a country which depends on river as its drinking water source.

The trend in the future will be more alarming in absence of actions or mitigation measures taken. Government agencies, private sectors, NGOs and public do aware and is seen carrying out respective measures in their respective ways. However, it is not enough as this is a national issue which requires actions from 32.4 million Malaysian citizens. There is a need for holistic management to curb this devastating issue. It can be started either from top down or bottom up but it must involve stakeholders from all levels. I would say public who is one of the main beneficiaries need to play key role. We cannot depend on the agencies or regulatory bodies to look after the rivers but we should initiate our own actions. At times, we realise the need to act but we are unsure on the initiative or immediate action we should take to curb the issue.



Source: River Water Quality Trend, 2005-2016 (Environmental Quality Report,

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With this in mind, GEC has developed a tool, **RIVER ADDRESS** to link people with the river to stimulate the ownership (GEC,2016). The River Address could be identified via the three components below:

(1): Identify your river basin

- You have to locate your house in map. Then, find the drain located near your house.
- Identify nearest river and joining rivers as well.

(2): Get to know where your drinking water comes from

- Mostly, we will be getting water from water treatment plants but there will be cases
- We get water from groundwater etc.

(3): Find out the location of the nearest wastewater treatment plant.

- You need to know where your wastewater goes as well.



DO YOU KNOW WHERE IS YOUR RIVER BASIN?



STEP 1: Locate your house in the map given. Find the drain located within your housing area.

STEP 2: Can you identify the nearest river? **List down the name.**

STEP 3: Does the river leads into a 2nd river? **List down the name.**

STEP 4: Follow the river flow until it reaches the sea. **List down any connecting rivers on the way.**



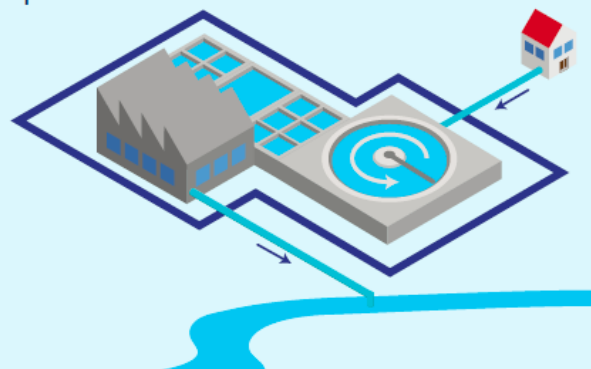
DO YOU KNOW WHERE YOUR DRINKING / TAP WATER COMES FROM?

Find the nearest water treatment plant. **List down the location / name.**



FIND OUT WHERE YOUR WASTEWATER GOES TO

Find the nearest wastewater treatment plant. **List down the location / name.**



Source: River Address (Global Environment Centre, 2016)

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River Address: Key Component of River Care

By: *Sathis Venkitasamy*

River address is a simple yet meaningful exercise developed by Global Environment Centre (GEC) to get public or stakeholders to know more about their respective river basin. By knowing the river address, we can initiate action at local level and protect our river basin. It is essential to identify drains as part of the river basin as drains are normally the carrier of pollutants to the river. The drains are designed to channel rainwater to river but our irresponsible actions are polluting it. There are a few practices that could be adopted to conserve and clean the river. We can initiative drain clean- up activities, as cleaning drain does not only help to clear the pollutant loadings into river but also save us from Dengue issues. Besides this, river cleaning and adoption activities can be initiated with involvement of youths and children as the key stakeholders, who will own the river basin In the future.

Through knowing the source of the drinking water, we would know which immediate river or drinking water source which we could care for. In Malaysia, the drinking water may comes from rivers from other river basin. This is most applicable to most of the urban citizens. This gives us opportunity to extend our initiative beyond our own river basin. We could protect the source through various initiatives. Water demand management is a key component to save the river. The more water we use, the more water needs to be treated. There lies the need to look for alternative sources as well as upgrading the capacity of existing water treatment plant. Hence, water conservation is an important aspect to protect the water source.

Identification of the location of wastewater treatment plant and understanding how wastewater is treated could instill the awareness on waste management. From our house, there are separated sewerage lines that bring wastewater from toilets, shower rooms, sinks and washing machines to the treatment plant. Improper dumping or channeling of waste into these outlets could cause problems to our wastewater treatment plants. The used cooking oil that is commonly deposited into kitchen sink could cause blockages in sewerage line. Therefore, it should be sent for recycling.

In a nutshell, there are numerous ways to initiate actions to care for deteriorating rivers. River address can be the start up exercise for us to get to know our river basin and help us to initiate target based initiatives. There are two main elements when we talk about river care. One is to preserve and another one is to improve. It is common that our actions focused on improvement or remediation however it should also includes preservation of the river especially river providing drinking water. To realize this, river address should serve as an important tool.

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**If the feeding inlet to the river is polluted,
how can we improve water quality of rivers?**

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Reforestation a Costly Affair

By: Sen Tanp



I REFER to the report “Xavier: Reforestation is the way forward” (The Star, Aug 19) and would like applaud Dr Xavier Jayakumar’s support for a massive reforestation programme. While I also support reforestation, I would like to bring the following points to his attention.

1. Reforestation is not a magic bullet to solve environmental issues such as access to water, floods and landslides. It is time-consuming, costly and there isn’t a 100% guarantee of success. Reforestation failures in northern Nigeria and marginal success in southwest China are good examples. There is also no guarantee that reforested lands will be able to provide sufficient and effective ecological services such as water catchment, watershed protection, flood and erosion control.

Furthermore, reforestation is a classic “treat the symptom, not the cause” approach. It should not divert us from addressing the fundamental problem – deforestation.

2. Beware of the reforestation programme’s unintended consequences. Under the false impression that reforestation will be able to solve all the environmental damage caused by deforestation, and that there is a well-funded NGO available to deal with the deforestation mess, unscrupulous entities might take advantage of the programme to justify and advocate for further logging and deforestation. This is not sustainability! Please be on guard and do not let them succeed.

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3. Logging brings in RM500mil a year to the states. The industries behind logging could earn 10 times this amount. Those are the gains but what about the missing losses in the equation? How much do the forest-deprived states such as Melaka, Selangor and Penang pay for clean water each year? How much money is being spent by the federal and state governments to mitigate floods and landslides caused by deforestation each year? How much is the economic damage caused by deforestation each year? Although there is no solid proof that this is a zero-sum game, I leave it to readers to ponder if deforestation is done to benefit certain entities at the expense of the people.

4. Since prevention is better than cure, zero forest conversion is the better way forward. If we are serious about tackling climate change and securing a better future for our coming generations, it is a practical goal we should strive for, especially since there is hardly 40% forest cover left in Peninsular Malaysia. First, there should be no more “first log, let degrade, then convert” practices to conveniently allow agricultural expansion. Second, Dr Xavier should consider expanding the current list of protected areas in Malaysia to include crucial water catchment (for example the Ulu Muda Forest Reserve) and environmentally sensitive areas (all the primary and secondary linkages identified in the Central Forest Spine Master Plan that are still intact). It will undoubtedly be a drawn-out battle with the states but our forests will be secured once the legislation is in place.



Selective logging should be welcomed as long as it is done transparently and sustainably

5. Zero forest conversion is by no means an anti-logging policy. Selective logging should be welcomed as long as it is done transparently and sustainably. There is, however, an urgent need to revise and implement stricter sustainable forest management practices through the Malaysian Timber Certification Council (MTCC). To begin, the Malaysian Timber Certification Scheme (MTCS) should be made obligatory for all forest managers in Malaysia.

Source:

THE STAR ONLINE

23rd August 2018

First, there should be no more “first log, let degrade, then convert” practices to conveniently allow agricultural expansion.

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Policies, Challenges and Strategies for Municipal Waste Management in Malaysia

By: Zaipul Anwar Zainu & Ahmad Rahman Songip

1.0 Introduction

The management of municipal waste continues to be a major challenge in urban areas throughout the world, particularly in the rapidly growing cities and towns of the developing world. The lack of an effective and efficient municipal waste management system has had negative impact on the environment. With a projected population of over 31 million in 2016, Malaysian generates more than 25,000 metric tonnes of domestic waste per day (Nadzri, 2013).

At present, the average per capita generation of municipal waste in Malaysia is about 0.85 kg/person/day depending on the economic and geographical status of an area. In major cities, such as Kuala Lumpur, it is estimated that the generation of waste is about 1.5 kg/person/day (Budhiarta et al., 2011). Authorities in most major cities in Malaysia are seeking for an alternative waste management approach as the landfill approach currently adopted becomes unsustainable due to rapid development and lack of new landfill spaces. In response to that, the Malaysian government, as part of the 10th Malaysia Plan (2011-2015), adopted waste recycling as a long-term strategy for municipal waste management (Economic Planning Unit, 2010).

2.0 Policies of Municipal Waste Management (MWM) in Malaysia

Starting from 8th Malaysian Plan, the government has included “waste minimisation”, “promotion of reuse”, “developing a recycling-oriented”, and “implementation of pilot projects for recycling” as some of its main policy goals. In the 9th Malaysian Plan (2006 - 2010) further emphasis were given to the continuation of reduce, reuse, recovery and recycling of waste as well as greater use of environmentally friendly products.

As a result of this plan, a new department, known as National Solid Waste Management Department has been set up under the Ministry of Housing and Local Government (Economic Planning Unit, 2006). A new bill has been gazetted to implement the new Solid Waste and Public Cleansing Management Corporation Act 2007 (SWPCMC Act 2007). All matters relating to municipal waste management will be under the jurisdiction of this new department. The focus area of this department is Solid Waste Management (Manaf et al., 2009). This act also provides executive power to the Federal Government to implement municipal solid waste management and public cleansing activities throughout Peninsula Malaysia, Federal Territories of Putrajaya and Labuan.

Through the SWPCMC Act 2007, the Federal Government of Malaysia has taken over the responsibility of MWM from state local authorities (LA) and privatised them to concession companies. The Federal Government undertook this measure due to several factors including lack of human and financial resources to manage waste and non-standardised approach to MWM. Therefore, the aim of the privatisation exercise is to improve the quality of service, promote efficiency, provide better facilities and to have an integrated and holistic approach to Malaysian MWM (Yahaya and Larsen, 2008).

On top of that, the new laws also took into consideration waste minimisation, reuse, material recycling, energy recovery and landfill. While under the 9th Malaysia Plan, waste treatment facilities such as transfer stations, thermal treatment plants and waste to energy production facilities (WTE) were also earmarked as alternative treatment methods of municipal waste management potentially to be

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adopted in the near future.

In general, based on the new act, MWM in Malaysia involves the participation of various Government agencies from federal to state and down to LA. LA's role will be limited to receiving delegation of power from Federal Government. Nevertheless LA will be directly engaged with municipal solid waste. The decision to determine whether Municipal Solid Waste (MSW) collection is implemented either by local authority or private contractor is the LA's responsibility. Similarly, decision to determine the area for MSW collection will be based on the number of population by the LA.

2.1 Collection and Transportation

Among the more than 25,000 metric tonnes of waste generated daily as mentioned above, 45% are organic waste (food waste), 24% are plastics, 7% paper, 6% metal and 18% are glass and others as shown in **Table 1**. Mechanism of separation at source between recyclables and non-recyclables are done voluntarily by Malaysians themselves with collection mechanism by the concessionaires that had started even five years ago on September 2012 (Budhiarta et al., 2011).

Types of Waste	Percentage (%)
Organic (Food)	45
Plastics	24
Paper	7
Metal	6
Glass & Others	18
Total	100

Table 1: Waste composition generated per day in Peninsular Malaysia

A two plus one (2 + 1) collection system, 2 days for residual and 1 day for recyclable waste including bulky and green waste, was then being implemented. New standards on waste bin and garbage collection trucks were used and enforcement on the efficiency of the collection schedule was also being implemented (Nadzri, 2013).

2.2 Recovery, Treatment and Disposal

The wastes generated are disposed off at 165 disposal sites in the country, which cater up to 95% of Malaysian waste, as shown in **Figure 1**. Of these, only 8 are sanitary landfills while the rest are open dumps. 11 more sanitary landfills are under various stages of implementation and construction. However, about 80% of these dumps have almost reached full capacity and are expected to be shut down over the next few years (Nadzri, 2013). Closing a landfill is environmentally challenging and involves acquiring other pieces of land, which will eventually become scarce in the future. At the moment, the country only has one WTE plant located at the central region and 4 mini incinerators under various stages of implementation in Langkawi, Tioman and Pangkor Island plus one in Cameron Highlands. In the 10th Malaysia Plan, another WTE plant is to be built and completed by 2018 in Negeri Sembilan.

3.0 Challenges in MWM

The main challenge brought by the rapid increase of municipal wastes is its detrimental effect to both humans and the environment. Currently, major waste management approach in Malaysia is still by landfilling and incineration method.

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3.1 Landfill

Due to increasing lack of space for new landfills, authorities in major cities in Malaysia are studying other waste management approaches. Among them is an approach to move away from unsanitary landfills due to greenhouse gas (GHG) emissions it causes such as methane and carbon dioxide. According to World Bank statistics, Malaysia produced 42.2% more Methane, 250.5% more carbon dioxide, 10.4% more Nitrous Oxide and 99.9% other type of GHG in year 2010 compared to previous years from 1990 - 2010 as shown in **Table 2** (The World Bank, n.d.). As these figures were dated seven years ago, the amount of GHG emissions presently is expected to be far greater. These statistics of Malaysia's environment are alarming. New sustainable MWM technologies are urgently required to address this issue because until today, the enforcement to control GHG emissions in Malaysia is still weak and inadequate.

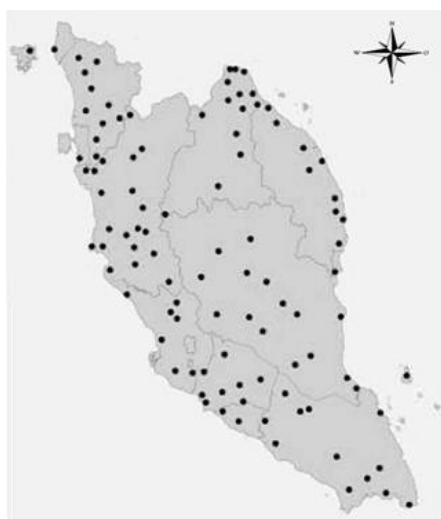


Figure 1: Locations of existing and closed landfill sites in Peninsula Malaysia. 80% of the existing landfill sites reaching full capacity and are expected to be shut down in the next few years.

Types of Gas Emission	Thousand metric tons or CO ₂ equivalent	Percentage Change (%)
	2010	1990-2010
Carbon Dioxide	198,348	250.5
Methane	33,599	42.2
Nitrous Oxide	15,010	10.4
Other GHG	1,195	99.9

Table 2: Trends in Greenhouse Gas (GHG) emissions

3.2 Incineration

Incineration is the second mostly used method to manage waste in Malaysia. It is one of the most effective means of dealing with various types of wastes. Despite being an attractive technological option for waste management, this type of combustion-based process for municipal solid waste treatment is a subject of intense debate around the world (Achillas et al., 2011). In the absence of effective controls, harmful pollutants such as dioxins may emit into the air, land and water which may affect human health and natural environment. Although incineration of municipal waste coupled with material and energy recovery can form an essential part of an integrated waste management system, yet strict controls are required to prevent its negative impacts on human health and natural environment (Misra and Pandey, 2005).

3.2 High Cost in Managing Waste

According to the previous Director General of National Solid Waste Management Department, 40% - 80% of LA expenditures are spent on managing municipal waste and public cleansing. The cost of MWM services per premise is around RM15.00 and the privatisation of the MWM had cost the Malaysian Government more than RM300 million.

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Capital expenditure (Capex) for a new landfill will be more than RM30 million in average whereas the operating expenditure (Opex) of a landfill is around RM30.00 - RM40.00/tonne in average (Nadzri, 2013).

In this situation, LAs are, in most cases, incapable of absorbing the high cost expenditure since the necessary resources to implement adequate municipal waste management systems are generally underestimated. The absence of these consequently leads to inadequate waste management with far-reaching ramifications to both public health and the environment (Badgie et al., 2012).

3.4 Public Awareness & Enforcement

The government has launched several recycling campaigns in year 2000s to involve the participation of non-governmental organisations (NGO) and community groups as well as the launch of an extensive public education and publicity campaign. Unfortunately, the campaign received only lukewarm responses from the public.

The overall failure of the campaign has been succinctly noted by the Minister of Housing and Local Government, in which he mentioned that after more than two years of recycling campaigns, only 2% of waste is recycled while it will take only nine and a half days to fill the Petronas Twin Towers with garbage (Omran et al., 2009).

In fact, the figures quoted above are way below the government's target of increasing the nation's recycling rate to 22% by 2020, which would require a drastic transformation in habits and attitudes of the Malaysian public (Omran et al., 2009).

Education and awareness is the key to reduce waste.

The amount of waste generated will continue to increase without a conscious decision by consumers to reduce, reuse and recycle. Early age education is also the key to ensure future generations contribute to sustainable MWM practices. Enforcement of regulation is another aspect to ensure rules are adhered to.

4.0 Future Strategies

The management of municipal waste in Malaysia is a challenge that must be planned and handled properly. Strategies to control the generation of municipal waste must be among the best and most appropriate methods to ensure sustainability. Control over the generation of municipal waste can help reduce municipal waste being sent to landfills. The generation of municipal waste can also be addressed by various means, such as enforcement of waste legislation, recycling, waste control at source, the design of an intelligent system for controlling the composition of municipal waste, and continuous awareness campaign on waste-related issues (Badgie et al., 2012). Below are some other strategies that can be adopted based on documents analysis, surveys and interview done with the experts in MWM to fulfill the vision of developing a sustainable waste management system in Malaysia.

4.1 Upgrade infrastructure & Human Capital

In general, meaningful progress has been made in Malaysia in terms of developing MWM infrastructures, but the desired goal of a clean and green nation has yet to be attained. Public awareness on waste management issues to be better informed about MWM remains inadequate.

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Despite the fact that the local government has spent almost 40% - 80% of their operational budget on municipal waste management-related issues, the need for critical talents and expertise in waste management must not be undermined. The relevant stakeholders must acquire and develop expertise to manage various municipal waste management effectively and efficiently as mentioned in the 11th Malaysia Plan to accelerate human capital development for an advanced nation (Economic Planning Unit, 2015).

4.2 Recycling Programme

One of the most serious problem that hinders the success of a recycling programme in Malaysia is the meek and shallow regulations and guidelines. National, state and local authorities should formulate regulations, policies and programmes that are sustainable. As an example, the programmes in Japan are carried out both through private and public systems, recycling is carried out through retailers' trade-in, barter system activities and community-based systems. While Germany has in place regulations on deposit system, waste disposal tax and amount of waste to be utilised in production [9]. Municipal waste recycling in Malaysia has a long way to go. Effort to reduce waste through waste minimisation or recycling should be planned properly. This does not mean that we have to switch to more capital-intensive and sophisticated systems because they are not necessarily more effective and efficient. The recycling programme should be properly planned involving all the relevant stakeholders including the government, municipalities, households, non-governmental organisations, manufacturers and last but not least the scavengers [9]. Current recycling rate of 5% is underestimated since recycling activities are still unregulated thus no proper data has been collected (Nadzri, 2013).

4.3 Development of Decision Support System (DSS)

In Malaysia, municipal waste analysis and data for major township and cities basically never have been well analysed and documented (Badgie et al., 2012). Several studies have been undertaken in the past on waste composition, but they were not undertaken using proper sampling techniques and lacks coordination. This is a factor that could defy a good strategy to manage municipal waste in this country. In other words, at the moment there is no DSS that has been developed for waste management system. This could hinder critical information from being utilised for future planning (Nadzri, 2013).

Successful waste management in any given country depends on reliable information about quantities, types, and the amount of material that can be captured and support decision-makers to make an informed decision in the future (Badgie et al., 2012).

4.4 Alternative Technology

In considering alternative technology to be used for managing waste, Malaysia has to take into consideration the risk, sustainability, impact on environment and commercially proven technology and reliability for long term solution. Emerging technology, such as thermal plasma waste treatment method that employ pyrolysis and gasification, are available and looks promising. A thorough viability study of the method needs to be conducted rather than focusing on building new incinerators. The development of pyrolysis and gasification technologies has been successfully deployed in large-scale plants in Europe, North America and Japan (Gomez et al., 2009). Similar setup can be developed in this country especially in the area where hazardous gases are emitted such as in the

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petrochemical industrial area. A political and social issue can also be avoided if such setup can be realised because there are many evidence to indicate that the hazardous waste can be treated by this type of facility in the developed countries.

5.0 Conclusion

In conclusion, Malaysia's municipal waste management strategies had to a certain degree been able to improve the environmental quality, public health, and socio-economic development as detailed in the country's future vision. This is mainly attributed to growing interest of the government on environmental issues, as demonstrated by the establishment of SWPCMC Act 2007, the implementation of 10th and 11th Malaysia Plan and privatisation initiatives. However, more ground works are required to increase the effectiveness and efficiency in achieving the targeted objectives on municipal waste management with an integrated and sustainable perspective particularly for the local, state, and federal governments to undertake in attaining a clean, green, and beautiful Malaysia for all to cherish in the future.

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Past Events & Activities

Seminar on “Application of Continuous Emission Monitoring System (CEMS) as an Environmental Management (EM) Tool for Guided Self-Regulations (GSR)”

ENSEARCH has successfully organized the Seminar on “Application of Continuous Emission Monitoring System (CEMS) as an Environmental Management (EM) Tool for Guided Self-Regulations (GSR) on 27th September 2018 at Silka Maytower Hotel, Kuala Lumpur.

EIMAS approved 4 CPD Points to Environmental Management Practitioners. With strong support from both public and private sectors, the seminar and exhibition welcomed 7 exhibitors, 7 speakers and 80 participants from various backgrounds.

The Seminar was officiated by ENSEARCH Vice President, Datuk Ir Othman Bin Abd Rahim. In his speech, Datuk Othman expressed his gratitude to the participants, exhibitors and ENSEARCH Secretariat for successful organisation of the Seminar.

ENSEARCH would like to thank all the individuals and organisations who supported the Seminar and Exhibition. We hope the seminar is able to empower practitioners in better application of the CEMS for Guided Self-Regulations (GSR).



ENSEARCH Vice President, Datuk Ir Othman Abd Rahim addressing the participants during the opening ceremony.

The CEMS Seminar received overwhelming response and compliments from participants.

As such, another session is planned to be organised in 1st Quarter of 2019.

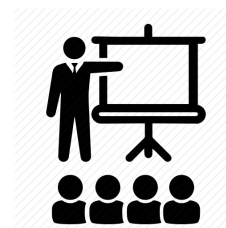


ENSEARCH

Training and Activities Calendar 2018

SEP Continuous Emission Monitoring System (CEMS) as
Environmental Management (EM) Tool in
Guided Self-Regulation (GSR) Seminar & Exhibition

27th September



OCT Technical Field Visit 2018
30th October



NOV Hillslope Development Forum
[Date to be confirmed]

DEC Ocean Plastic Waste Workshop
4th December

&

**KKEF: Memorial Public Lecture & Young Environmentalist Internship
Award 2018**

13th December



ENSEARCH Trainings are **HRDF Claimable & EiMAS CPD Points Applicable**. For more information: Please visit www.ensearch.org or drop us an email at spo@ensearch.org.

ENSEARCH

Seminar/Training Room for RENT



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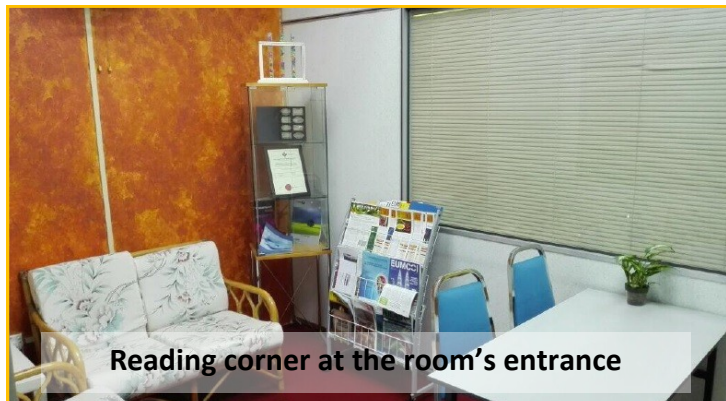
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