



ANNUAL REPORT

2013 / 2014

"Never doubt that a small group of thoughtful, committed, citizens can change the world. Indeed, it is the only thing that ever has."

- Margaret Mead

STRUCTURE OF THIS REPORT

This report will cover the activities of UMCARES – The UM Environmental Secretariat from January 2013 to April 2014. While this covers a period of more than a year, this is necessary as it includes the final moments of the secretariat as an individual non-formal entity. In 2014 the university announced its total commitment to community engagement and campus sustainability by creating a whole new centre, UMCARES – The Community & Sustainability Centre. This report therefore presents our achievements over the past year and during the build-up towards complete institutionalisation. While the era of the Secretariat may now be over, things can only get bigger and better from here.

CONTENTS

Structure of this Report	2
Message from the Volunteer Coordinator	3
About UMCARES – University of Malaya Environmental Secretariat	4
UMCARES Vision & Mission	5
The People behind UMCARES	6
Organisation structure	8
Fulfilling the Requests of the People	9
Flagship Project – Zero Waste Campaign (ZWC)	12
Flagship Project – UMCROPS Urban Farm	14
The Stream of Life	17
Flagship Project – Water Warriors	18
Project ReViVaL – Revive Varsity Lake	19
Flagship Project – Low Carbon City Framework and Assessment System (LCCF)	20
Green Squads and the Annual UMCARES Environmental Competition	21
Inculcating a Sustainable Lifestyle	23
Networking for Sustainability	26
Getting Attention	28
UMCARES Interns	30
UMCARES Sustainability Summit 2013	31
The Future of UMCARES	32
UMCARES Financial Report	34
Acknowledgements	35
UMCARES T-shirt Design Competition	36

**MESSAGE from the
VOLUNTEER COORDINATOR
DR ZEEDA FATIMAH MOHAMAD**

It has been a great pleasure and a humbling experience acting as the UMCARES volunteer coordinator for the past 3 years. I have learnt so much and it has been especially rewarding because of the inspirational and selfless contributions from our diverse volunteers – staff and students, young and old, from all parts of the UM community.



My own personal journey with UMCARES started when I attended a very unique meeting as a new lecturer in 2008. The meeting was chaired by our VC at the time (Dato' Rafiah Salim) who personally made a campus wide call for UM staff to volunteer to green the campus. The meeting attracted about 30 staff from various backgrounds; juniors and seniors alike. Being an Ecology graduate from UM, I was also highly inspired that my former lecturers were there too. The brainstorming that ensued was spirited and full of hope. The group decided to name themselves "UMCARES".

Years have passed since that memorable afternoon meeting. Since then, UMCARES as a campus sustainability movement has evolved in leaps and bounds. Under the leadership of our founding volunteer coordinator, Prof. IR. Aziz Abd Raman, plus the on-going support from subsequent Vice-Chancellors (Tan Sri Ghauth Jasmon and at present, Dato' Amin Jalaluddin) UMCARES' efforts in campus sustainability have been driven by a dynamic combination of firm grassroots strength and increasing top management support. Especially significant are the roles of our 'unsung heroes' of core staff and student volunteers who blaze the way to ensure that significant areas of environmental improvement in UM are addressed, albeit various limitations and challenges. Listening to their individual adventures is an inspiring experience in itself!

Indeed, 2014 is another significant year for UMCARES. Since our official establishment as a volunteer-based Environmental Secretariat in September 2009, we are now given a larger mandate to extend our internal sustainability efforts to go beyond UM's borders. Through our recent merger with UM's community engagement unit (formerly under CItRa) – UMCARES is now upgraded to **UMCares - The Community and Sustainability Centre**. With this restructuring we are entering into another major phase of our institutionalization – signifying the university's commitment to sustainability and community engagement. It will be a challenging yet exciting journey ahead.

This report will cover our journey over 2013 up to the point of our realignment as the new UMCares. We warmly welcome you to read about our adventures and what we have achieved so far - in the hope that you too will feel the call to be a part of the UMCares family - providing precious contributions to campus sustainability in your own unique way.

Thank you.

UMCARES

– University of Malaya Environmental Secretariat

It all began in 2008 with a call by the then-Vice Chancellor, Datuk Rafiah Salim for volunteers to green the campus. Since then, a motley crew of academic staff and student volunteers has raised their hands to do their part for campus sustainability.

From the first ever 'Earth Hour' to a student petition against the 'white coffin' of polystyrene, passionate individuals from all walks of university life stepped forward with myriad initiatives to ensure that the University of Malaya stayed on the green track.

Institutionally, UMCARES grew in leaps and bounds. Established as a secretariat under the Office of the Vice-Chancellor in September 2009, it soon hired its first full-time officer. By 2013 it had a total of 3 contract officers, a complete network of student and staff lead volunteers and advisors for a number of environmental flagship projects and a slew of regular annual events to garner more volunteer participation.

By this time several student initiatives such as the Zero Waste Campaign (ZWC) had evolved into campus-wide programmes. With obvious positive results and data that provided quantifiable evidence of the environmental benefits of these projects, the top management began to sit up and take notice of the work that the Secretariat was doing.

In 2013, the grassroots strength of UMCARES became increasingly evident; publicity initiatives successfully tapped the power of social media and a number of key people in the university threw their support behind the Secretariat's efforts. Among these was Prof. Faisal Rafiq Mohamd Adikan, the Deputy Vice Chancellor of Development. With his support, UMCARES became an advisor to Development and Estate issues, and under his leadership, the Water Warriors began working with JPPHB to revive and rehabilitate the Varsity Lake.

2014 marked the end of the Secretariat's days. The community component of the former Community & Industry Liaison Centre (CItra) absorbed the secretariat's role as well as its name; UMCARES had become the Community and Sustainability Centre. Community engagement and campus sustainability is now completely institutionalised. There will soon be bigger and better things to come...

2008

Call for volunteers

2009

Secretariat
under the Office of
the Vice-Chancellor

2010

Volunteer
project
coordination &
collaboration

2012

Institutional
integration &
broader
community
participation

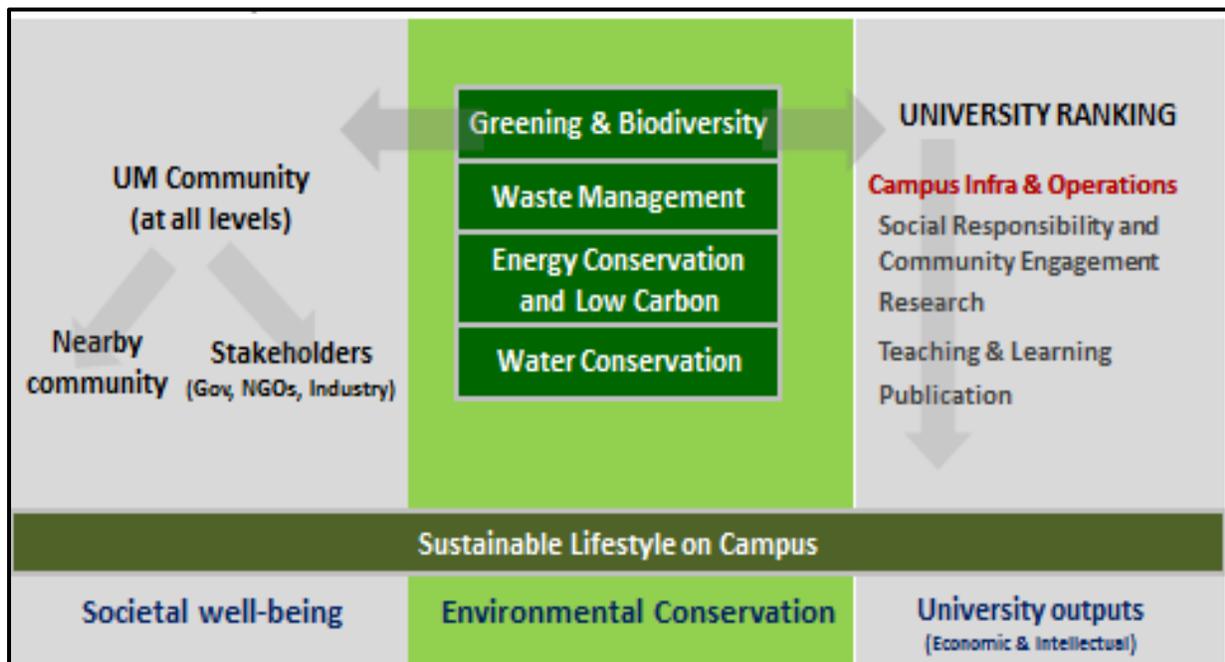
2014

Complete
institutionalisation
& dedicated
centre

Mission To transform UM into a more sustainable campus

- Objectives**
- (1) Assist relevant units in UM to develop **short and long term strategies** to transform UM into a well-respected sustainable campus.
 - (2) Plan and implement activities to increase environmental **awareness, understanding and appreciation** among the campus community, and to harness sustainable **action and practices on the ground**.
 - (3) Provide **coordination and institutional support** to enhance the effectiveness of campus environmental activities

THE UMCARES EVOLVING WORKING MODEL



THE PEOPLE BEHIND UMCARES

A number of visionaries are behind the success of UMCARES. It all began with the then-Vice Chancellor Datuk Rafiah Salim and her call for volunteers. From then on Prof. Ir Dr Abdul Aziz b Abdul Raman and Dr Zeeda Fatimah Mohamad, with the support of an invisible collage of staff and staff volunteers, blazed the trail to campus sustainability.

But there are a number of other people in the background who made everything possible. From the administrative staff, popularly known as Teha, Fiza and Hariz to paid project staff such as Jaron, Lan, Dodi and Samsul; these were the core of UMCARES. Beyond them were ever more passionate lead volunteers for the various flagship programmes, such as Assoc. Prof. Dr. Sumiani (ZWC), Assoc. Prof. Dr. Norhaslina Hassan, Dr. Muhamad Azzam Ismail and the LCCF research team, Pn. Ati Rosemary and Pn. Sharifah Noor Nazim (Green Office), Affan Nasarudin and Asiah Kadir (Water Warriors).

In the early days, Prof. Dr. Kurunathan A/L Ratnavelu (as the then DVC Development) was invaluable in his support of the establishment of the Zero Waste Campaign Facility at Damansara Gate. Prof. Datuk Dr. Rohana Yusof (DVC HEP) has also been fundamental in her unfaltering support for UMCARES' efforts in the residential colleges and the UMCARES Environmental Competition.

Providing strength in numbers as always were the student volunteers. From the Green Squads in the residential colleges to those who signed up as part of the Water Warriors crew and others who turned up for events and programmes as ready and willing all-around helpers and runners. A new development in 2013 was the arrival of interns at UMCARES. In collaboration with AISEC, UMCARES hosted 7 international interns from Germany, China, the Philippines and Poland, all of whom worked on developing interpretive material for UM's potential ecotourism sites. Later in the year, UM interns joined the team and made a number of useful contributions to UMCARES projects.



The most powerful development in UMCARES' evolution however, was the turnaround that took place in 2013 with top management support. When Tan Sri Ghauth Jasmon was Vice-Chancellor, he was unequivocally behind UMCARES, even taking the time out to visit the UMCROPS farm site. Prof. Dato' Dr. Amin Jamaludin the current Vice-Chancellor is also very supportive of the sustainable campus initiative, directing the Bursar's office to ensure that the Secretariat has funds to continue its work.



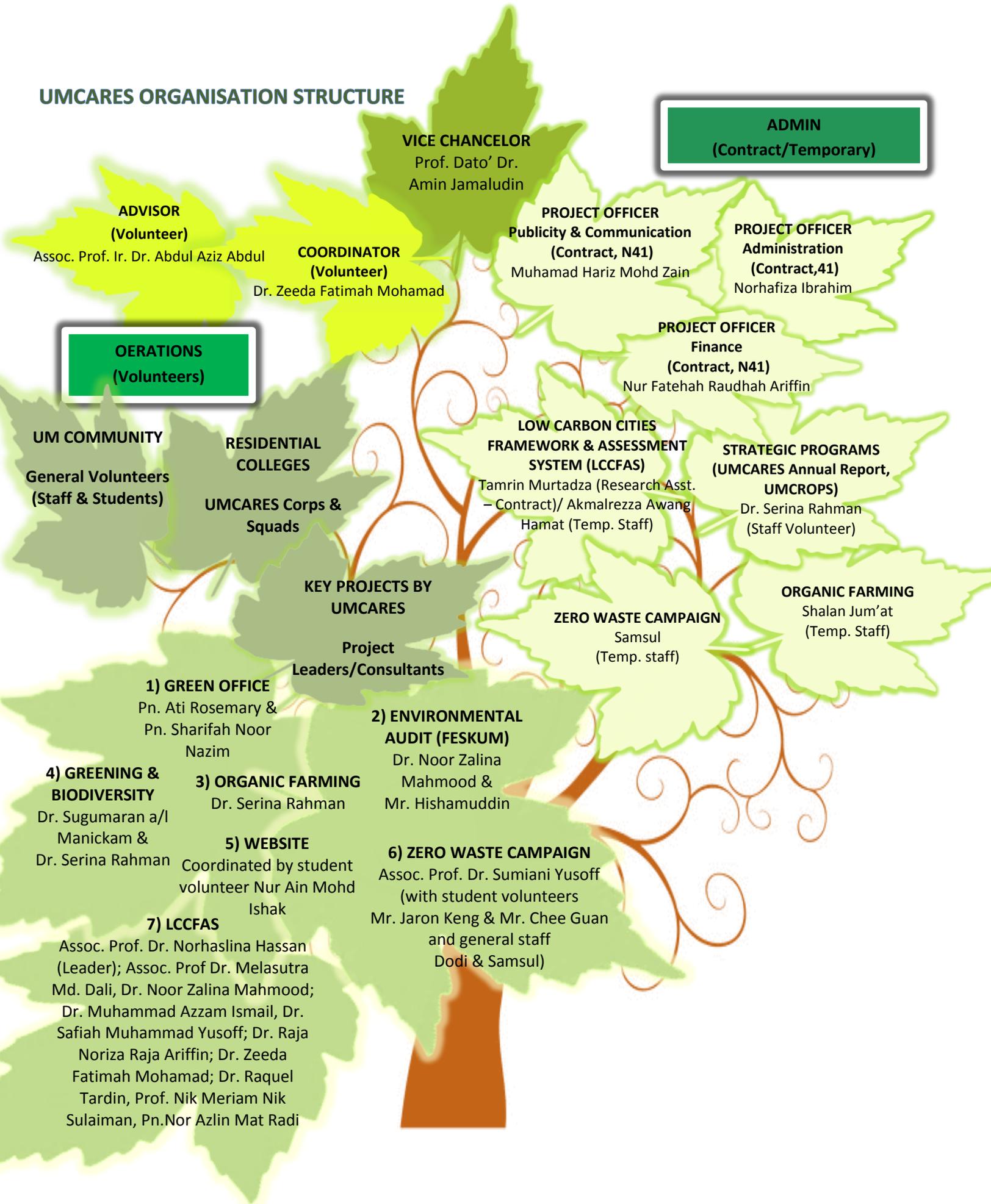
But the change that really mattered was the support given by the new Deputy Vice Chancellor (Development), Prof Faisal Rafiq Mohamd Adikan. His belief in UMCARES allowed the Secretariat to make a bigger impact on campus, advise on estate and development matters, and push through the revival and rehabilitation of the lake. In 2013 grassroots action was well and truly backed up by top-management direction.



With the recent realignment exercise, it was the man who was there from the very beginning, Prof. Ir. Dr. Abdul Aziz b Abdul Raman who put the machinery in motion to complete the institutionalization of the Environmental Secretariat. The new UMCares now reports to Prof. Dr. Awang Bulgiba, and his dedication to enhancing UM's involvement and credibility in community engagement and sustainability is blazing the way forward for the new centre.



UMCARES ORGANISATION STRUCTURE



ADMIN
(Contract/Temporary)

VICE CHANCELOR
Prof. Dato' Dr.
Amin Jamaludin

ADVISOR
(Volunteer)
Assoc. Prof. Ir. Dr. Abdul Aziz Abdul

COORDINATOR
(Volunteer)
Dr. Zeeda Fatimah Mohamad

PROJECT OFFICER
Publicity & Communication
(Contract, N41)
Muhamad Hariz Mohd Zain

PROJECT OFFICER
Administration
(Contract,41)
Norhafiza Ibrahim

OPERATIONS
(Volunteers)

PROJECT OFFICER
Finance
(Contract, N41)
Nur Fatehah Raudhah Ariffin

UM COMMUNITY
General Volunteers
(Staff & Students)

RESIDENTIAL COLLEGES

UMCARES Corps & Squads

LOW CARBON CITIES FRAMEWORK & ASSESSMENT SYSTEM (LCCFAS)
Tamrin Murtadza (Research Asst. – Contract)/ Akmalrezza Awang Hamat (Temp. Staff)

STRATEGIC PROGRAMS (UMCARES Annual Report, UMCROPS)
Dr. Serina Rahman (Staff Volunteer)

KEY PROJECTS BY UMCARES
Project Leaders/Consultants

ZERO WASTE CAMPAIGN
Samsul (Temp. staff)

ORGANIC FARMING
Shalan Jum'at (Temp. Staff)

1) GREEN OFFICE
Pn. Ati Rosemary & Pn. Sharifah Noor Nazim

2) ENVIRONMENTAL AUDIT (FESKUM)
Dr. Noor Zalina Mahmood & Mr. Hishamuddin

4) GREENING & BIODIVERSITY
Dr. Sugumaran a/l Manickam & Dr. Serina Rahman

3) ORGANIC FARMING
Dr. Serina Rahman

5) WEBSITE
Coordinated by student volunteer Nur Ain Mohd Ishak

6) ZERO WASTE CAMPAIGN
Assoc. Prof. Dr. Sumiani Yusoff (with student volunteers Mr. Jaron Keng & Mr. Chee Guan and general staff Dodi & Samsul)

7) LCCFAS
Assoc. Prof. Dr. Norhaslina Hassan (Leader); Assoc. Prof Dr. Melasutra Md. Dali, Dr. Noor Zalina Mahmood; Dr. Muhammad Azzam Ismail, Dr. Safiah Muhammad Yusoff; Dr. Raja Noriza Raja Ariffin; Dr. Zeeda Fatimah Mohamad; Dr. Raquel Tardin, Prof. Nik Meriam Nik Sulaiman, Pn.Nor Azlin Mat Radi

FULFILLING THE REQUESTS OF THE PEOPLE

At the end of the UMCARES Sustainability Summit 2012, several requests and suggestions were made by the UM citizenry. The plans for 2013 were built around these and this report will provide the details of many of those developments.

MULTIDISCIPLINARY CONTRIBUTIONS

It was mentioned that staff and students beyond the sciences should be more active in campus sustainability initiatives. Interestingly, several of our lead volunteers are from the Faculty of Built Environment and many of our student volunteers are not from the sciences. Many active student volunteers come from medicine and engineering; and in 2013 a notable interest in the UMCROPS initiative especially, has come from support staff from various units within the university.

ROLE MODELS

There was a call for more role models to inspire the student population to take more responsibility for campus sustainability. In 2013 UMCARES used the power of Youtube and the skills of lead volunteer Asiah Kadir to develop several short videos to attract more attention and encourage action. These clips featured lead volunteers, many of whom the student population could relate to as well as look up to and emulate as 'seniors' and mentors. The most acute success from this strategy was seen after the freshman orientation week (Minggu Haluan Siswa). A young, vibrant face of UMCARES was showcased to the new intake. Coupled with inspiring video footage and messages from the lead volunteers, UMCARES recorded the most positive response it had ever garnered since its formation. Capacity-building camps then allowed residential college Green Squads to hand over the torch to freshly recruited and recently inspired juniors as they learnt new skills with which to improve the sustainability of their campus homes.



ENCOURAGING STUDENT PARTICIPATION THROUGH MERIT POINTS

Another request from a student participant of the summit was the provision of merit points to encourage more environmental volunteerism on campus. The UMCARES administrative team worked with the Student Affairs Department (HEP) to make this happen, and now students who volunteer with UMCARES (depending on the role they play) will not only be awarded with merit points, but they will also have official records of their contribution to the university on their graduation transcripts.

MORE INTEGRATION WITH GROUPS LIKE KELAB ALAMI

Kelab Alami Mukim Tg Kupang youth participated in the 2012 Sustainability Summit and caught the attention of those who were there. There were requests to offer more opportunities for the UM family to meet and interact with Kelab Alami youth and other similar organisations so as to inspire the UM community to act. In 2013, Kelab Alami Mukim Tg Kupang was invited to participate in the UMCARES Earth Hour event and the group also hosted the AISEC international interns in Johor and became their guides in their local seagrass meadows. Staff of the Community and Industry Liaison Centre (CitRa) also visited the Kelab Alami Mukim Tg Kupang ecotourism site, inspiring several in the unit to want to replicate similar initiatives in Kuala Lumpur and the surrounds.

With the support of the original founders of Kelab Alami and in collaboration with the Sustainable Science Research Cluster and the Asia Core Research Programme, the Water Warriors lead volunteers (Affan and Asiah) set up a new branch of Kelab Alami in Kuala Selangor. Named Kelab Alami Kawa (*kawa* is river in Japanese), this group of youth are being trained as local guides and freshwater monitoring experts. These youth were also invited to visit UM and spent some time in Rimba Ilmu, the UMCROPS urban farm and the Museum of Zoology.



CONTINUED CAPACITY-BUILDING AND EXPANSION OF THE ENVIRONMENTAL COMPETITION

While many commended the existing capacity-building efforts, more were requested. In 2013 capacity-building for sustainability was built around the themes of the environmental competition. Workshop content included water monitoring, biodiversity identification, waste issues, tree-tagging and GPS use. For the first time ever, all 12 residential colleges participated in the competition, with many putting to good use the skills learnt during these training sessions. Several colleges set up farm sites of their own and many began to document the biodiversity on their college grounds. A few colleges took water monitoring activities seriously and mapped out possible pollution points from their college to surrounding streams.

Sustainability skills were also taught to the students of the Pusat Asasi Sains Universiti Malaya (PASUM) during their orientation week. Students were taught how to do a quick biodiversity assessment and mapping of several sites around UM, as well as conduct a rubbish survey and clean-up. After the culmination of the environmental competition at the end of 2013, it was decided that capacity-building would be extended to a year-long programme, allowing for more time for the freshman intake to learn and apply the skills learnt to their daily lives and their residential colleges.

EXPANSION OF STUDENT AND STAFF INVOLVEMENT IN ENVIRONMENTAL INITIATIVES

In 2013 there was a real spurt of student and staff initiatives for the environment. Inspired by the UMCROPS initiative as a source of organic pollen (flowers), a group from the Zoology department began the groundwork for a bee farm in the Faculty of Science. Water Warriors became a reality, led by two research assistants under the Sustainable Science Research Cluster. Several students and former Green Squad volunteers decided to become more active with the ZWC programme and added weight to e-waste, pre-loved clothing and banner collection efforts. Students from Enactus began to take a serious interest in the UMCROPS farm and came forward to help provide ideas for the commercialization of crops and its transformation into a self-sufficient urban farming and nature education centre. As a result of that effort, several students in the group have pledged their commitment to creating a student farming group from within the Faculty of Science.



FLAGSHIP PROJECT – ZERO WASTE CAMPAIGN (ZWC)

ZWC began as a student project and evolved into a campus wide effort to implement an integrated waste management model in UM with the ultimate goal of achieving zero waste campus status. ZWC has developed innovative means of diverting solid waste from being disposed in landfills; streamlining recycling activities and developing strategies to increase the rate of recycling on campus; creating awareness amongst staff and students about waste separation and other waste issues; and capacity-building and creating strategic collaborations with UM stakeholders.

ZWC has not only made an impact within campus, it has also garnered the interest of corporate sponsors such as CIMB Bank and CHG Sdn Bhd. The facility also works closely with a number of recycling and waste collection companies such as Isti Tulin Sdn Bhd, Pelangi Sutera Sdn Bhd, Kris Biofuel and Life Line Clothing.

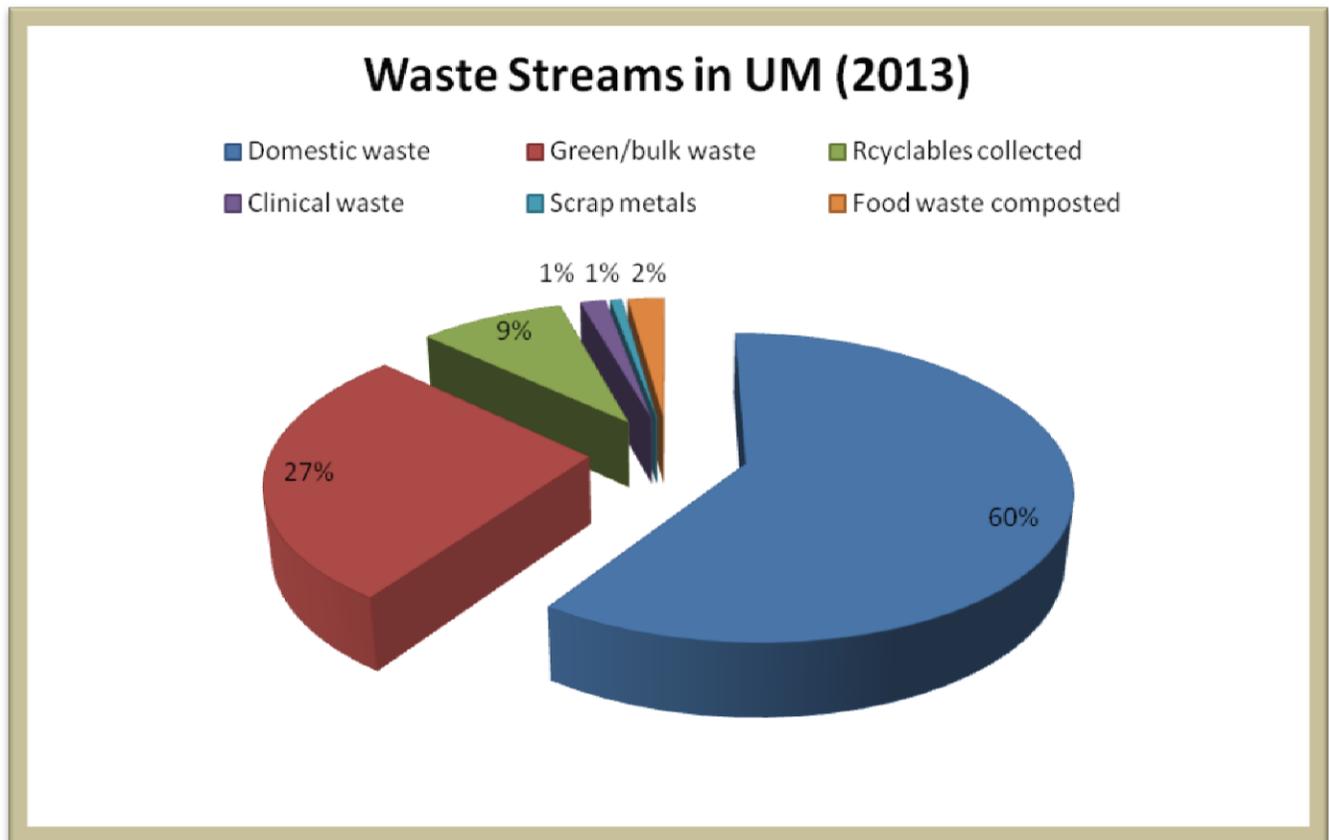
In 2013 ZWC went from strength to strength. Formerly led by staff and student volunteers and manned by two workers, UM support for the initiative meant that the facility could hire its original student founder, Jaron Keng, as the official Project Manager. Support from the Deputy Vice-Chancellor (Development) ensured the continuity of one facility worker, the placement of more tri-color recycling bins all over campus and the installation of collection bins for pre-loved clothes, shoes and other items. Student interest in ZWC efforts led to collaborations with AISEC for e-waste and computer recycling through SOLSTech, Enactus for the marketing and sale of ZWC-produced compost and with various enthusiastic individuals such as (former UMCARES idol) She Mei for the collection and recycling of buntings and banners through Biji-Biji.



The strength of ZWC is its holistic approach to campus waste reduction. Not only has it been able to engage with and gather support from all levels of the UM community, but it has also provided the top management and potential collaborators with solid data and facts as evidence of its contribution. Driven by a true expert in waste matters, Dr Sumiani and with passionate, innovative and effective staff on the ground, its efforts have shown a real reduction in the university's waste output. With further support from both the grassroots and the decision-makers, ZWC can only become even more effective in driving the campus towards zero waste status.



Jaron was interviewed by ASTRO Awani for a segment on waste management issues (online link to the ASTRO segment is available at: <https://www.facebook.com/umcares/posts/668672873167103>). More information and photos on this project can be found at this link: <https://www.facebook.com/zerowastecampaignum>.



FLAGSHIP PROJECT – UMCROPS URBAN FARM

The UMCROPS Urban Farm is a sustainable food source experiment and urban farming demonstration site. In collaboration with the Science Café, it showcases a complete food-to-waste-to-soil-to-harvest loop that reduces waste impacts, carbon footprints and maximizes the green productivity of unused land.

It has been 1.5 years since the revival of the farm project. During that time crops have changed several times and the soil has evolved from rock hard and barren to a fertile dark brown moist and earthworm-rich substrate conducive to myriad vegetables, fruit trees, herbs and flowering plants. Sweet organic harvests have been eaten in the Science Café and distributed to the farm’s avid supporters and saplings have also been given away to those who caught the urban farming bug.

A number of positive developments have come out of the farm in 2013. As more people came to know about it and enjoyed its harvests, the site became a useful base for knowledge exchange, innovations and interaction.

EXPERIMENTS AND LOW-COST INNOVATION

One of the key concepts behind the UMCROPS initiative is its low-cost simple approach to farming and other solutions. The farm itself is a recycling demonstration site. The limited infrastructure available was built using waste wood and other materials collected from construction sites; and fun items available for visiting children such as the drum set are also examples of waste material upscaling. Recyclables such as tin cans and plastic bottles are kept at the farm and data is collected for the ZWC initiative.

Students often use the farm as a collection site for experiments and samples. Many tap the ingenuity of the UMCROPS Project Manager, Shalan Jum’at to help them develop simple yet effective tools with which to achieve their research goals. Innovative fly traps, insect sampling nets, rainwater harvesting cum aquaculture contraptions, experimental water treatment systems and many others have come out of these collaborations.



INSPIRING REPLICATE FARMS ON CAMPUS

Residential colleges keen to improve on their college sustainability for the environmental competition have been attentive learners at the farm. With Shalan's help and free saplings and seeds from the UMCROPS site, several colleges have set up their own farms and herb gardens. Residential college 6 drew on the expertise of Dr Sugumaran of Rimba Ilmu, who also provided them with saplings from the botanical garden.

SPREADING THE FARMING BUG

The UMCROPS farm has been a useful tool in spawning an interest in urban agriculture. In 2013 staff and students were infected by Shalan's passion and got involved with the farm in one way or another. The first group that got drawn into the project was three staff from the Science Café; Imam, Suaji and Gus. Not only were they capacity-built to sort their waste, they used their weekends to help till the soil and build beautifully rustic infrastructure at the site (made entirely from recycled material). By early 2014, several support staff in the Faculty of Science gave in to the farming bug and also began to spend evenings and weekends with Shalan at the farm. Support staff and several academics from other faculties and centres have also become avid fans, either stopping by to exchange seedlings and saplings or to monitor the progress of fruit trees and the latest vegetable crops.

The UMCROPS farm evolved into a learning centre as lecturers brought their students either for a short introductory visit or for full day farming immersions. Students were taught the rubrics of urban farming, and put their hands to hoeing, burying food waste, creating compost and even grass-cutting. Student groups such as Enactus and others trying to meet their community engagement requirements also spent time at the farm, with several staying on beyond their project period.

Many staff and students are drawn to the farm because it reminds them of simpler days in the village, and one group of students from the Faculty of Science is so enthused by the opportunity to feel 'closer to home' that they have begun a 'farming support group' so that they can become regular volunteer farmhands.



ENGAGING WITH UM'S EXTERNAL COMMUNITIES

As a contribution to our nearby neighbours, urban farming was extended to Taman Medan Cahaya Phase II. In this collaboration with the UM Community and Industry Liaison Centre (CltRa), Shalan ran a number of farming workshops with the local women and helped to revive their attempts at carpark area farming. Within 6 months the women were able to harvest crops for their own consumption and sale. In mid-2013, this initiative was expanded to replicate the rainwater harvesting cum aquaculture set up at the UMCROPS farm site. This allowed the women access to nutrient rich water for their plants and garnered the interest of local men through the opportunity to breed catfish.

At the end of 2013, a student group from Enactus joined the effort and is now working to market produce from the community and develop a regular sales channel to supplement their incomes. With Shalan's guidance, the students are also expanding on the rainwater harvesting set up so that there are more sources of water in times of drought.

UM's external communities also use the farm site as a learning centre. The Taman Medan Cahaya ladies paid a visit in June 2013 to pick up ideas for their plots, and schools that are part of the former CltRa's adopted schools' network also use the site as part of a nature immersion programme. The Enactus group is working on developing the farm site as a self-sufficient education centre and has begun the process by training themselves as guides for the farm and bringing in disadvantaged children to learn how to farm for a day.

THE RABBITS' CONTRIBUTION TO UMCROPS

2013 was the year of the rabbit for the UMCROPS site. Two rabbits were donated to the farm as a source of manure; unfortunately one died due to health complications and disability. The remaining rabbit was paired off with a Science lecturer's pet and returned with a number of offspring. Two survived to stay on with their mother on the farm until late 2013. The rabbits were a big draw with students and visiting children and also contributed a great amount of fertilizer to the farm. This was a much healthier alternative to store-bought chemical-rich fertilizer and the rabbits were also useful in finishing off excess vegetable crops. The rabbits were occasionally allowed to roam free around the farm – unfortunately one day they escaped (or were set free by monkeys!) and all three died from possible poisoning as they seem to have consumed wild mushrooms that had flourished after the rain.



THE STREAM OF LIFE

Just downhill from the UMCROPS farm and part of the 'tour' if anyone asks to visit the farm, is the Stream of Life. Once a nondescript, overlooked and ignored waterway, the area has been cleaned up and completely revitalized.

The iron-rich and at times polluted water that flowed down from the hillside and off the Science Café has been partially dammed for filtration; by the time the water reaches the bottom-most pond it runs clear and clean. The stream is now lined with flowers, herbs and fruit trees and has become home to myriad insects, frogs and birdlife. A number of kingfishers, egrets and owls have taken up residency at the site and introduced ducks constantly attract the attention of passersby.

The brainchild of the Deputy Dean (Development) of Science, Prof. Dr. Zainudin Bin Arifin and a pet project of the Dean of Science, Prof Dato' Dr. Sofian Azirun, the dream became a reality through the prodding of the Water Warriors after a visit to rehabilitated rivers in Japan. The sheer physical labour of Shalan Jum'at and friends from the Science Café brought the vision to life; rehabilitation was done entirely by hand – nary a machine could be used given the delicate slopes in the area.

Today the stream has truly become a centre of attraction in the Faculty of Science. Students stop by on their way to class to point out the feathered attractions, staff delay their ride home in the traffic to fish away their stress and some just lie or sit next to the stream to study and relax. The Stream of Life was an experiment in reviving a single water body in the university and it successfully captured the attention and imagination of those who pass by, nurturing an affinity for nature and the outdoors and a desire to maintain the area as one of the few remaining natural streams in the university.



FLAGSHIP PROJECT – WATER WARRIORS

Led by the incredibly passionate duo of Affan Nasarudin and Asiah Kadir, the Water Warriors surfaced in 2013 to revive, rehabilitate and protect campus water bodies. Their main weapon of choice to encourage UM community participation was the use of citizen science. Their biggest strength however, was their appeal to the university student community as role models and ‘seniors’ to emulate, complemented by their canny understanding and use of social media and Youtube to get the attention of the UM population. The Water Warriors often disseminate information at this link: <https://www.facebook.com/umwaterwarriors>.

The Water Warriors began their journey at a capacity-building programme for residential college Green Squads. This first experience teaching student groups the rubrics of water monitoring led to a slew of interest in continuing the programme in the colleges. The Green Squad of college 5 also signed on as regular water monitors for the lake.

Invigorated by this support and obvious progress in the Stream of Life project, the Water Warriors turned to the expertise of Dr Sakai and other researchers in the Sustainable Science Research Cluster Heartware programme to further develop their engagement with the UM community. Their ultimate goal was to identify the source of pollution at the Varsity Lake and take steps to repair and revitalize the area for public use. Tapping onto the Heartware approach, a number of heritage videos were created about the lake, which proved to be the magic magnet in drawing stakeholder interest to the importance of preserving UM’s Varsity Lake heritage and habitat.



PROJECT REVIVAL – REVIVE VARSITY LAKE

Led by the Deputy Vice Chancellor (Development), Project ReViVaL brings together a multidisciplinary team from the Dept of Estate and Development (JPPHB), the Sports Centre, the Faculties of Science and Engineering, the Water Warriors, the wider UM community and DBKL in a 3-step plan to save the UM Varsity Lake.

The first phase of the project involves a 6-month scientific and technical study to analyse water quality, determine sources of pollution and map out drainage routes around the lake. Scientific clarification of various water quality parameters are being done at this stage.

In the second phase (running concurrently with the first), citizen science modules and public awareness and participation are being carried out to assess the efficiency of the existing treatment system in improving lake water quality, set up a water quality model and predict water quality given different scenarios. Public participation in this process will help to garner UM community interest and ownership over the lake rehabilitation process.

In phase three, treatment and maintenance of the lake will begin. These remedies will be determined based on the results of the scientific and technical studies and may include natural or chemical treatment of pollution, sediment removal, erosion control, seepage solutions and aeration system implementation. Once this work is done, wetlands habitat elements will be re-introduced to the lake as a continuous natural treatment solution.

Project ReViVaL is expected to come to fruition in 2016, as remedying years of rampant development and habitat destruction takes time to repair and rehabilitate. It is hoped that once this is achieved, the lake will once again be the thriving soul of the university and the healthy heart of its network of natural habitats. The dream is to bring the lake back to its heyday where it was the centre of attention during orientation, festivals and convocation. It wasn't too long ago when the lake was an integral part of UM life and living – the hope is that it won't take too long to bring it back to where it belongs.



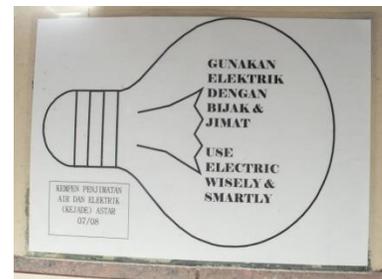
FLAGSHIP PROJECT – LOW CARBON CITY FRAMEWORK AND ASSESSMENT SYSTEM (LCCF)

The LCCF Project implements a system of assessment of a city's carbon footprint. The University of Malaya is essentially a mini-city within the city of Kuala Lumpur. Selected as a pilot partner by the Ministry of Energy, Green Technology and Water (KeTTHA), the LCCF team is working to gather baseline data that will help to increase the university's compatibility with its natural systems and guide it towards greener policies and decision-making. The project is in effect a 'live' test of the framework's applicability to the campus and its myriad green initiatives.

One of the main outputs from this project will be a strategy with which the university will reduce its carbon footprint and guidelines for future development. The multidisciplinary team of urban planners, waste and transport experts, architects and geographers bring together the best expertise available to develop effective university policies for integration and collaborative planning and management.

Among the elements assessed in this project are university physical infrastructure; ecology, green spaces, tree density and numbers; private and public transportation, road-use and parking; mixed-use, hill-slope and compact development; earth works, storm water management, flood mitigation, and water and waste management; energy consumption and alternative sources of energy; building performance, cooling systems and orientation; and cycling and pedestrian networks.

The LCCF project is an example of the strong research base behind a number of UMCARES projects. Collected data will be translated into policy and provide top-down directives and guidelines in support of grassroots efforts to reduce the university's impact on the natural environment. It is only by combining solid research such as this with university policy and grassroots energy that a truly sustainable campus can become a reality.



THE GREEN SQUADS AND THE ANNUAL UMCARES ENVIRONMENTAL COMPETITION

The UM Residential Colleges are a hotbed of energy and enthusiasm for various causes. Campus sustainability is one of them. In 2013 all 12 colleges participated in the annual UMCARES environmental competition, a first in UMCARES history. This overwhelming interest allows UMCARES to reach out to students who spend the most time on campus and for whom a sustainable campus would mean the most. This also means that capacity-building efforts reach many more students focused and striving towards the overarching goal of winning the environmental competition.



RESIDENTIAL COLLEGE MANAGEMENT SUPPORT

The key qualities behind a successful Green Squad in the residential colleges seem to be the support that it gets from the college management, as well as the college Fellow and Master. In colleges where the entire team believes in the need for sustainability, there is often good continuity between the year groups and an organised, cohesive and holistic approach to environmental awareness, activities and sustainability.



ROADSHOWS

In order to garner more participation from college residents, the UMCARES administrative team organised a number of roadshows for the colleges, featuring presentations by several lead volunteers. This effort allowed the college community to find out the details of the environmental competition and how they could better apply its principles to their daily lives. These roadshows were also opportunities for the students to convey their wish-list and capacity-building interests to the UMCARES team. Roadshows were also held for College Masters, resulting in all residential colleges participating in this year's environmental competition.



UMCARES ENVIRONMENTAL COMPETITION 2013

First launched in 2009, the annual Environmental Competition has become a hallmark of UMCARES' recurring activities and a cornerstone of residential college involvement in the secretariat. The main objective behind the competition is to instill an awareness, empathy and understanding of environmental issues and desire for action amongst residential college students. Based on the five key pillars of greening &



biodiversity, waste management, water conservation and low carbon impact, the colleges are audited for their environmental action and sustainability. The Green Squads also have to submit a full report detailing their efforts for the year, as well as prepare a full presentation of their work. A combination of the scores for these 3 components (audit, report and presentation) determines the annual winner of RM10,000 and a number of subsidiary titles and prizes.

In 2013 the competition was launched in March and ran until November. Throughout its course, residential college students were capacity-built with a variety of skills, attended roadshows, and handed over their knowledge to the freshman cohort that joined the college in September. By November each college was assessed on their efforts, campaigns and action for the environment, with the winners being announced in December.

For the first time all of UM's residential colleges participated in the competition, however, the difference between those who had several years' experience and the novices was very obvious. The results showed that more capacity-building in terms of environmental reporting, data collection and assessment, as well as presentation skills were required. Several of the colleges were still at a level of awareness-raising, whereas the expectation was that they should already be at the level of sustainability implementation and data collection. Programmes also needed to be more permanent and long-term. Colleges that had won previously seemed to be rather stagnant and did not show further enhancement of their efforts or increased action.

Given also that the results of the auditing session did not necessarily provide sufficient information with which to judge the colleges, it was decided that the auditing parameters would be adjusted to incorporate the principles of Eco Action 21 from Japan. Coupled with a decision to extend 2014's capacity-building programme to a year and launch the environmental competition in tandem with the university's new intake, it is hoped that future environmental competitions can elicit a higher standard of results and submissions.



INCULCATING A SUSTAINABLE LIFESTYLE

Living green is all about making the right choices. In UM, it is easy to make more sustainable choices on a daily basis. The campus grounds are conducive to low-impact sustainable activities such as jogging, walking and cycling and there are organised runs and myriad other green events taking place almost every week on campus.

EARTH HOUR – MARCH 2013

Earth Hour was one of the first events ever held by UMCARES. 2013 was the fourth year running that it was organised by the secretariat. Led by lead volunteers Akmal Rezza and Affan Nasaruddin, this was an Earth Hour that caught everyone's attention. In a burst of inspiration, the decision was to create an installation at Dewan Tunku Chanceller (DTC) that would create awareness of the university's enormous use of plastic. With a call for used plastic bottles, volunteers collected more than 2500 bottles from donors, drains, rubbish bins and dumpsters all around campus – in just 3 days. The volunteers then strung all these bottles together and hung them from the trees in front of DTC. What began as a pile of recyclable rubbish actually turned out to be a very attractive piece of art. A photo competition surrounding the installation added on to the interest surrounding the piece and the message went viral.

This gave Earth Hour the publicity it needed. The event took place at the same time as the finals of FESKUM, which added on to the interest, and a good turnout of about 70 people turned up in spite of an earlier rainstorm. During the hour of darkness (8.30-9.30pm), traditional toys such as *terompah gergasi* (giant's clogs) and various types of stilts built by Shalan Jum'at as well as games such as *congkak*, hopscotch, coconut bowling and several others were on standby to entertain the crowd. To close the event, the Eco Drum Circle brought the lights back on. It was very clear that there are many ways to have fun without using electricity – and several profound statements were put forth in just one night of darkness.

FILM SCREENING – THIN ICE – APRIL 2013

In collaboration with the British High Commission, UMCARES screened the Inside Story of Climate Science: Thin Ice. The documentary showcased the truth behind climate change and the potential dangers that the planet is facing. A good turnout of about 30 participants attended the screening at RMIC auditorium.



PASUM CITIZEN SCIENCE EXERCISE – APRIL 2013

Inculcating a sustainability psyche starts as soon as the student joins the university. In 2014, new students to PASUM were exposed to a combination of presentations and games related to recycling, biodiversity, water monitoring and community engagement. This was their first exposure to UMCARES and sustainability and students and staff were keen to contribute to the cause by setting up a special PASUM volunteer squad. In 2013, final year PASUM students underwent biodiversity and rubbish assessment exercises before the end of their stay in UM so that they would leave with an awareness of the greenery (and its contaminants) on campus. Incidentally, this exercise turned out to be an historic one, as several of the green areas mapped by the students were soon taken over as construction sites for new buildings, and all that is left of it is a memory and a map drawn by these graduating students.



ORIENTATION WEEK (MINGGU HALUAN SISWA) – SEPTEMBER 2013

UMCARES first participated in orientation week in 2010, spawning some interest in its activities and a few of the secretariat's current batch of lead volunteers. In 2013, UMCARES was given more time with the freshmen during their orientation and the hook on this occasion was a series of UMCARES videos created by Asiah Kadir. Coupled with brief introductions by the UMCARES administrative team and Dr Zeeda Fatimah Mohamed, goodie bags with badges and files, a magic show and green messages by Ameerul Hazeeq a Green Squad volunteer and Green Cheers, there seemed to be great response from the new intake. Several signed on to be Green Squad volunteers and quite a number expressed their interest in volunteering with UMCARES. It is clear that these sessions are vital in garnering early student support for UMCARES and sustainable campus initiatives and are opportunities that must be maximized and used efficiently in subsequent years.



KL INTERNATIONAL JAZZ FESTIVAL – SEPTEMBER 2013

UMCARES was invited to take up a Green Zone at the KL International Jazz Festival in 2013. With a huge venue on offer, the secretariat was able to showcase its ZWC initiative, set up a green architecture corner, a film and video screening booth, as well as showcase produce and products from the UMCROPS urban farm (including the rabbits and ZWC's resident rooster). A walking magic show by a lead volunteer also helped to attract visitors to the booth. About 300 passersby and visitors



to the Jazz Festival stopped by the UMCARES booths, with several taking home organic produce, seedlings, saplings and compost.

EARTH DAY – APRIL 2014

While UMCARES was unable to celebrate Earth Hour in 2014, Earth Day was celebrated with a whole slew of events to raise awareness about the state of the environment. Also taking place at the same time was the Earth Day Run organised by the KL International Jazz Festival. On the same day, the UMCARES ZWC and Water Warriors crews organised the River of Life – Urban Rejuvenation for Sustainable Development technical talk, a full morning’s discussion on river rejuvenation.

For the next two days, the UM Rimba team held a UM wildlife photography exhibition and ZWC held an open day and recyclables collection at the Main library. Earth Day itself was on 22 April 2014, and to launch the day’s events, the UM Rimba team held a bird-watching session in the morning at Rimba Ilmu, and closed the day with a night walk and frogging session at the Stream of Life and UMCROPS farm.

Timberland also participated in Earth Day celebrations with a full day of events at Rimba Ilmu ranging from water monitoring to tree harvesting, plant specimen collecting and tree planting. At the same time the UM branch of the Sustainable Development Solutions Network (SDSN) held a Sustainability Solutions Dialogue at the Research and Management Innovations Complex. Over the following Saturday, 26th April, environmental icon and Eco Warrior Matthias Gelber held a full day Eco Leadership workshop at Wisma R&D, UM.

This was definitely the most jam-packed Earth Day celebration UM has ever had. With good external support and participation, it is hoped that more sessions like these can further increase awareness, interest and action for a sustainable campus.

GIVING THANKS

UMCARES would be nothing without its volunteers. Every year the Secretariat holds a volunteer appreciation dinner in honour of those who work tirelessly for the cause. In 2013 this was held at the Eastin Hotel. In future we hope to create official university-level awards for students and staff who make a real difference to the cause.



NETWORKING FOR SUSTAINABILITY

While the focus of the UMCARES Environmental Secretariat is the transformation of UM into a sustainable campus, the solutions cannot always be found internally. It is always necessary to look outwards across the region and beyond to find models of success from leading international universities. In order to achieve this, UMCARES has actively attended a number of events in order to capacity-build itself in campus sustainability.

THE INTERNATIONAL SUSTAINABLE CAMPUS NETWORK (ISCN)

In 2013 the annual ISCN conference was held at the National University of Singapore. This event is a yearly global forum to enable leading colleges, universities and corporate campuses to exchange information, ideas and best practices for sustainable campus operations. It also provides ideas on how to integrate sustainability in research and teaching. As a result of the invitation to attend the conference, the University of Malaya was formally accepted into the network and was offered the opportunity to co-host Malaysia's first Regional Conference on Campus Sustainability with University Malaysia Sabah.

1ST REGIONAL CONFERENCE ON CAMPUS SUSTAINABILITY

Hosted by the University of Malaysia Sabah (UMS) in Kota Kinabalu, UM was a partner in the organization of this first regional conference. UMCARES sent a full contingent of staff and lead volunteers to attend this meeting, and hosted a workshop on outreach for campus sustainability. Several speakers from amongst the UMCARES lead volunteers provided examples of how to reach out to the university community and beyond in terms of sustainability initiatives. Participants from other universities shared their experiences with outreach and for environmental awareness and action. Several lead volunteers presented papers and posters during the conference, with Affan Nasaruddin being awarded the Best Poster Presentation for the conference. Pn Ati Rosemary Ariffin (UMCARES Green Office lead staff volunteer) also won the Best Paper Award.



INNOVATION FOR INCLUSIVE DEVELOPMENT IN THAILAND AND SOUTHEAST ASIA BY UNIID-SEA, HOSTED BY CHULALONGKORN UNIVERSITY

Hosted by the Chulalongkorn University in Bangkok, Thailand, this workshop focused on the development of a syllabus for a Master’s programme on Inclusive Development. Community engagement and environmental sustainability are crucial components of inclusive development and it is a positive step forward that universities are beginning to offer formalized modules on this field. Dr Serina Rahman represented UM, UMCARES and Malaysia at this event, sharing Malaysian universities and UM’s efforts at inclusive development and community engagement for sustainability. The result of this session is a module that will be used in Chulalongkorn University and that can be adopted and adapted by any other university in the University Network for Innovations for Inclusive Development South East Asia (UNIIDSEA).



ASIAN STUDENTS ENVIRONMENT PLATFORM (ASEP) BY THE AEON ENVIRONMENTAL FOUNDATION

Approximately 80 undergraduate and postgraduate students from China, Korea, Japan, Malaysia and Vietnam will be selected for a 2 week immersion programme at the Tsinghua University, Beijing China. Students will also be given the opportunity to visit Tianjing City, Chengdu and Inner Mongolia while they are there. UM is the only Malaysian university selected by the Aeon Environmental Foundation to participate in this programme.



An extensive selection process took place to shortlist the lucky participants for this trip. 16 students with a deep interest in environmental issues or are majoring in environment-related disciplines were selected. Participating students will exchange knowledge, expand their understanding of and discuss water-related issues and how to protect this scarce resource. The platform enables the students to benefit from a global perspective of the issues at hand and learn about sustainable social development based on cultural traditions reworked in accordance with modern needs and demands. UM’s representatives will leave for China on the 4th of August 2014.



GETTING ATTENTION

2013 was the year that UMCARES came into its own on the social media platform. Several Facebook pages were created related to UMCARES initiatives, garnering a huge following and public support for campus initiatives. The UMCARES website finally went live and a series of videos produced by a UMCARES volunteer were the turning points in garnering student and staff support for several key initiatives. This experience has shown that in this day and age, the most effective way to reach target audiences through online social media – and videos say a whole lot more than text on a page. The following sections highlight the stars behind these successes.



Nur' Ain Ishak

As the webmaster for the UMCARES website, my job was to maintain and update the contents of the website. This way a visitor to the website can get the latest (and most accurate) information on UM's sustainable campus initiatives.

I believe small steps can lead to big changes especially in the environment. School and university are the right places to guide the younger generation to love Mother Nature because they are can become agents to spread environmental awareness beyond school and university gates. Through UMCARES I hope that we can nurture a younger generation that cares about nature. This effort is not an easy task. It involves sacrifices of time, money, manpower and many other things.

But no words can describe how great I feel being a part of this team and I would never regret contributing to this fantastic group. Everyone has their own strength and passion. This is my passion. I love computers and I really care about nature. With the knowledge that I have, I can create a medium of technology that will help to attract the younger generation to learn to love the environment. Other than a website, the use of Facebook and Twitter are also other useful mediums.

A sustainable campus is one that provides the present and future needs of the campus community while nurturing better surroundings. These needs include the latest developments and technology, a peaceful neighborhood, clean water and air and others. It is a hard task to balance and maintain all these needs because everyone on campus ha their own definition of sustainability. I believe that if everyone practiced tolerance and gratefulness, this initiative can expand beyond the campus grounds.



◀ Nur' Ain Ishak

Norasiah Kadir ▶



Norasiah Kadir

As a media and publicity volunteer with UMCARES, I created a number of videos to promote the secretariat and its work such as the ones on the flagship projects and 'Tasek Varsiti: Now and Then'. I also document UMCARES events such as the UMCARES Summit 2013 and Earth Hour.

Armed with the right footage, images and soundtrack, awareness videos can arouse the right crowd into a mix of happiness, anger, love, sadness and nostalgia all at the same time. When informed about a deteriorating environment, it can inspire people to create change. When history is shared, it becomes a learning experience and takes them to an era that they never knew existed. It is a different kind of awareness and perhaps a better approach for the younger generation.

Not only can videos act as a tool to get people excited by how 'cool and fun' it is to be an eco-hero, but they are a unique way of sharing crazy ideas and forever immortalizes the simple joys and happy memories of volunteering. UMCARES videos highlight the unsung heroes in the community: the volunteers that have always been hidden away, quietly doing the dirty work on the ground to make UM a cleaner and better place.

It was interesting to be able to record all of this in my early days as a UMCARES volunteer as I was able to listen and become motivated by hearing how UMCARES has grown since it first started and it was exciting to become a part of the journey.

A sustainable campus can be achieved by finding a balance between nature, development and people while aiming for a common goal of building a better university. From now onwards, our every action and decision must be carefully planned out so as not to be a burden or cause further damage. It's important to record and document our efforts so that when future generations look back, they will know that we have done everything that we could to create a sustainable campus.

UMCARES INTERNS

For the first time ever, UMCARES hosted interns – and in one fell swoop, we had seven international interns and six UM interns.

The international interns (Dennis, Zinfang, Xing Tian, Magdalena, Ula, Sheila and Maria) were sent to us through a Green Hug collaboration with AISEC. These interns focused on developing interpretive and promotional material for Rimba Ilmu, as well as potential ecotourism material for UM as a whole. Their work will eventually be absorbed in future efforts to promote UM (including several UMCARES sites) as an ecotourism destination. While they were in Malaysia, the interns were encouraged to travel and almost all of them spent some time at the Kelab Alami Mukim Tg Kupang ecotourism site in Johor. Not only were they guided in the natural habitats by Kelab Alami youth, but they also enjoyed some cultural immersion, fishing and cooking classes hosted by Shalan Jum'at at our UMCROPS project manager.

Our UM based interns (Amin, Fajri, Zizah, Redhza, Bakre and Iman) spent several months at the UMCARES office participating in and contributing to a wide variety of UMCARES initiatives. Throughout their time with the secretariat, they learnt specific skills such as water monitoring and the technicalities of the ZWC facility. They also spent time at the UMCROPS farm developing interpretive material for the crops there. Before they ended their stint as interns, they developed a potential project for the faculties, 'GreenFac' which incorporated elements of organic farming, recycling, a healthy lifestyle and a green army to further campus sustainability efforts. While it is yet to be seen whether such an initiative will become a reality, one of the interns (Fajri) has since been a regular volunteer MC at UMCARES events and Amin is being trained as an apprentice leader for the Water Warriors.



UMCARES SUSTAINABILITY SUMMIT 2013

Launched in 2012, the annual UMCARES Sustainability Summit is a platform to elicit ideas and share knowledge with the UM community. This event is an opportunity for the citizens of UM to express their sustainability goals and wishes, and for UMCARES to see how they might be able to meet or facilitate the achievement of that vision.

In 2013, the summit was combined with the prize-giving ceremony for the 2013 Environmental Competition. The programme comprised a number of presentations by lead volunteers so that the UM community would be aware of UMCARES activities and sustainability developments over the past year. Following that, a number of the residential colleges were selected to present their best efforts over 2013. The most important segment of the summit is always its feedback session; in 2013 this was a vibrant affair as many sections of the audience were keen to comment, ask questions and find out more about UM sustainability initiatives. Following a video presentation on the Varsity Lake heritage, the prizes for the environmental competition were given out.

The summit was a bigger success in 2013 given the strength of the feedback given. It is from these comments and opinions that the plans for the following year are devised. Active community participation and response indicates an increased awareness amongst the UM public and heightened interest and ownership over the university's carbon footprint and sustainability. This is a positive turn for the university's progress towards sustainable campus status. For it is only when its citizens take heed, ask questions and show interest that we can achieve our goal of an active, innovative, sustainable campus.

UMCARES ENVIRONMENTAL COMPETITION 2013 WINNERS

1ST PLACE - KK6

**JOINT 3RD PLACE -
KK12 & KK9**

**Inspirational Masters
Award - KK12 & KK6**
**Inspirational Fellows Award -
KK10 & KK6**

**Green Newcomer Award -
KK10**
**Environmental Idol Award -
KK12**

**Water Conservation Award -
KK4**

**Organic Farming Award –
KK5**

**Sustainable Lifestyle Award -
KK1**

**UM Cares E-Waste
Management Award - KK2**
**UM Cares Greener Cafeteria
Award - KK11**

**Organizational Enhancement
Awards - KK3 & KK7**
**Environmental Awareness
Promotion Award - KK8**



THE FUTURE OF UMCARES

The future of UMCARES is bright. Several new initiatives sprouted over 2013 and have begun to take root.

UM Rimba is a group of young volunteers who plan to work closely with Dr Sugumaran of Rimba Ilmu to gather biodiversity information on all of UM's green spaces, including the university's forest reserve. This information would be entered into an online database that can provide baseline data for campus specific research, as well as a reference site for resident flora and fauna species. This data would prove useful as input to the Dept of Estate and Development (JPPHB) when it comes to campus development and landscaping. The data could also contribute towards LCCF calculations. As an offshoot from this project, ecotourism initiatives could be developed using the information collected by establishing marked and tagged trails throughout the university. More information on this initiative can be found at the following link: <https://www.facebook.com/umrimba>. Look out for the group's planned Biodiversity Week in October 2014.

The Bee Green Project was mooted by a Zoology team keen to set up a UM Beekeeping Club. Bee clubs are common in several leading universities around the world, and are educational models for sustainability and citizen science. A bee club in UM would be the first in Malaysia and would be a positive step towards establishing the university's status as a leading institution in environment and sustainability issues. Supported by a UMCARES seed grant, the Zoology team has purchased stingless bees (*Apis trigona*) from a vendor in Malacca. The honey from these bees could potentially be a source of revenue for the club, and several related cottage products could possibly be developed from the honey and hives.

At the instigation of the Deputy Vice Chancellor (Development), a **Campus Scorecard** was developed as benchmarks and indicators from which the university can assess its environmental impact. With input from lead volunteers in all fields, this information and its necessary budget outlay was collated and forwarded on to the DVC for his reference and planning. It is the first time that UMCARES has been tapped on to provide this sort of information and it is a tremendous step forward to be able to have this access and opportunity to provide the

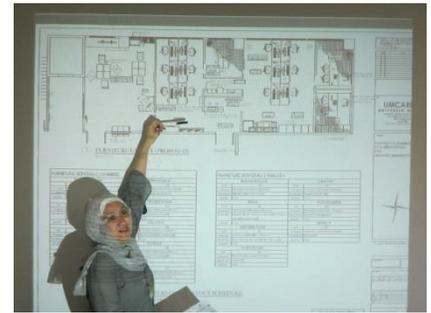


necessary input that could potentially decide the future sustainability direction of the university.

Following the results of the 2013 Environmental Competition and consultation with a Japanese team from the Ministry of Environment, Japan through Dr Abdul Halim Sulaiman and Assoc. Prof. Dr. Noor Zalina Mahmood from the Institute of Biological Sciences, an adaptation of **Eco Action 21** parameters will be incorporated into the next round of the Environmental Competition. In the meantime, Green Squad leaders will be trained in these audited aspects so that they are better able to act and instill relevant environmental policies and procedures within their residential colleges.

The **UMCARES Green Office** should be ready by the second half of 2014. The renovation of this new office in the Research, Management & Innovation Complex has taken a long time to come to fruition due to the hurdles that had to be overcome in the e-procurement process. The existing system and infrastructure does not allow for green purchasing options or credible green contractors to take up the job. However, after almost 2 years of lobbying, letter writing and negotiations, the issues have almost all been settled, a contractor has been hired and work can soon begin. Panasonic has agreed to contribute a number of its green solutions to the office and collaborate with UMCARES in research on the actual effectiveness of these environmentally-friendly appliances and equipment. Within a few months, the UMCARES team should have a sustainable office that it can call home.

A realignment exercise conducted on the Community and Industry Liaison Centre (CItra) led to the setting up of a new unit focusing on community engagement and sustainability. While this is essentially the original CItra scaled down to just its community component, the centre took on the UMCARES name and absorbed the sustainability functions of the secretariat. As a result, **UMCares** is now fully institutionalised as **the Community & Sustainability Centre** of the University of Malaya. The extra administrative support, better organised systems and the clout of a full director at its helm is an indication of the commitment of the university towards the sustainable campus initiatives. With **Dr Zeeda Fatimah Mohamad as the Director** of the new UMCares, the university's progress towards sustainable campus status can only be stronger and speedier from here on.



UMCARES FINANCES

EXPENSES

MAIN ACTIVITY	ALLOCATED	SPENT
<i>Sustainable Lifestyle</i>		
- UMCARES Capacity Building 2013	30,000.00	26,874.50
- UM Environmental Competition 2013	30,000.00	24,015.00
- MingguHaluan Siswa 2013	5,000.00	5,000.00
- UMCARES Summit 2013	20,000.00	18,763.00
- UMCARES Promotional Material	17,000.00	23,253.00
- UMCARES Report 2013	3,000.00	3,000.00
- Funding For Environmental Projects By Independent Groups		
- UMCARES Gotong-royong Initiative	5,000.00	3,000.00
<i>Energy & Low Carbon</i>		
- Low Carbon Cities Framework and Assessment (LCCFAS)	10,000.00	1,750.00
- UMCARES Earth Hour	2,000.00	2,434.00
<i>Zero Waste Campaign</i>		
- Zero Trash Campaign 2013	50,000.00	62,823.00
<i>Greening & Biodiversity</i>		
- Biodiversity Map and Rimba Ilmu Promotion		
- UM Organic Farming Program (UMCROP)	20,000.00	29,982.27
<i>Corporate Social & Responsibility</i>		
- Eco Film Fest and Anugerah Hijau 2012	6,000.00	0.00
- World Ocean Week Celebration 2012	5,000.00	0.00
- AIESEC Green Hug Student Exchange	2,000.00	0.00
TOTAL SPENT	-	200,894.77
REMAINING		~ 4,105.23
TOTAL	205,000.00	205,000.00

REVENUE

GAINS FROM	RM
1. COWTECH Biogas Supplied for Zero Waste Campaign Project	15,000
2. GREENTECH Fund for Low Carbon Cities Framework Assessment	50,000
3. Panasonic Fund for UMCARES Innovation Lab	30,000
UMCARES TOTAL REVENUE 2013	95,000

A MILLION THANKS...

Our special acknowledgement to the following staff and student volunteers, units within UM and external organizations (in no particular order) for their meaningful assistance and support to UMCARES throughout 2013 and 2014:

Staff volunteers and key supporters

Prof. Madya IR. Dr. Abdul Aziz Abdul Raman	Prof. Dr. Esther Daniel	Dr. Abdul Halim Sulaiman
Prof. Azizan Baharuddin	Assoc. Prof. Dr. Norhaslina Hassan	Dr. Raquel Tardin
Prof. Dr. Kurunathan A/L Ratnavelu	Assoc. Prof. Dr. Melasutra Md Dali	Dr. Fauziah Shahul Hamid
Prof. Dr. Faisal Rafiq Bin Mohamd Adikan	Dr. Noor Zalina Mahmood	Dr. Goh Hong Ching
Prof. Datuk Dr. Rohana Binti Yusof	Dr. Sugumaran A/L Manickam	Mr. Hishamuddin Abdul Halim
Prof. Nik Meriam Nik Sulaiman	Dr. Muhammad Azzam Ismail	Ms. Zarina Shariff
Prof. Dato' Dr. Mohd Sofian Bin Azirun	Dr. Safiah Muhammad Yusoff	Puan Ati Rosemary
Prof. Dr. Zainudin Bin Arifin	Dr. Raja Noriza Binti Raja Ariffin	Puan Sharifah Noor Nazim
Prof. Carolina Lopez Caballero	Assoc. Prof. Fatimah Kari	Puan Rosnah Sadri
Prof. Ir. Mohamed Rehan Karim	Dr. Nobumitsu Sakai	Dr. Serina Rahman
Prof. Dr. Noorsaadah Binti Abd Rahman	Dr. Faridah Othman	Puan Mariana Shahrir
Assoc. Prof. Sumiani Yusoff	Dr. Behzad Rismanchi	Mr Mohd Hairil Zainal Abidin
Assoc. Prof. Dr. Ahmad Salihin Hj Baba	Mr. Shamsul Rizwan Ghazalli	College Masters and UMCARES
Assoc. Prof. Dr. Junedah Binti Sanusi	Mr Samsul (ZWC)	Fellows of all KKs

Lead student volunteers and student organisations

Lau Chai Ming	Lili Fariza	Vanessa Ting
Jaron Keng	Fazly Rahmat	Nurul Fitrah Marican
Ng Chee Guan	Zazreen Ismail	Thary Gazi
Siti Norasiah Abd Kadir	Noor Shahzila Idris	Majlis Perwakilan Pelajar
Affan Nasaruddin	Sim Cheng Kim	Universiti Malaya (MPPUM)
Akmal Rezza Awang Hamat	Mohammad Shahrul Amin Bin Mohd Salleh	Pusat Asasi Sains UM (PASUM)
Tan Kee Aun	Najmul Fajri Usman	Environmental Science &
Innanie Ariffin	Mohammad Redhza Bin Rasidi Norhazizah Binti	Management Club
Nur' Ain Ishak	Abdol Raoff	All UMCARES squads in the KKs
Md Noor Musa	Benjamin Ong	

Various units within UM

DVC Office (Research & Innovation)	Bursary	All Residential Colleges in UM
DVC Office (Development)	Faculty of Science	Rimba Ilmu
DVC Office (Student Affairs)	Faculty of Economics	Centre For IT (PTM)
DVC Office (Academic & International)	Faculty of Engineering	Library
Department of Development & Asset Maintenance (JPPHB)	Fac of Built Environment	Security Office
Sustainability Science Cluster	Sports Centre	Transport Unit
Department of Science & Technology Studies	Cultural Centre	Rumah University

External organisations and individuals

Mr Shalan Jum'at, Dr Serina Rahman and Youth Rangers of Kelab Alami Tg. Kupang	Mr Azham Yahya
Pak Razak, the community of Mukim Pasangan and the Youth Rangers of Kelab Alami KAWA Kuala Selangor	RRCOM (Recycling Communities)
Ministry of Energy, Green Technology and Water (KETTHA)	UNIIDSEA (Grace Santos, Aildrene Tan & Doc Doy)
Greentech Corp Malaysia	Mr Nasim, Faculty of Science Cafe
Malaysian Environmental NGOs (MENGO)	Green Purchasing Network (GPNM)
The Green Growth Team of the UN Economic and Social Commission for Asia and the Pacific (UNESCAP)	Mr Fansuri Bin Alias, Manager CSR Corporate Communication & Branding, AEON CO. (M) Bhd
	Mr Tan Chee Hon, Head, Eco Innovation Dept., Panasonic Malaysia Sdn. Bhd.
	Hartalega Sdn. Bhd.

Editorial

Advisor: Dr Zeeda Fatimah Mohamad

Writer and Editor: Dr Serina Rahman

Contributors:

Dr Zeeda Fatimah Mohamad, Mr Muhamad Hariz Mohd Zain, Miss Nurfatehah Raudhah Ariffin, Miss Norhafiza Ibrahim, Mr Jaron Keng, Mr Tamrin Murtadza, Mr Affan Nasaruddin, Ms Siti Norasiah Kadir

UMCARES T-SHIRT DESIGN COMPETITION

WINNER - ABDUL AZIM BIN BADRUL HISHAM



1ST RUNNER UP - MOHD ZAMIR BIN MOHD ZAMRI



2ND RUNNER UP - UMI FASEHA BT. KOSNON

