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UTM *Prospering* **LIVES**



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UTM
Prospering
LIVES



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FOREWORD

UTM Prospering Lives is a publication that highlights the University-Community relationship where research projects undertaken by university researchers were conducted to impact lives of the community. This symbiotic relationship entails working together between university and community members in upgrading the quality of life in every possible aspect.

The work done by CCIN in coordinating the research projects and Office of Corporate Affairs for documenting the research for our future reference contributes to a meaningful university for society relationship.

Please feel free to contact us if you would like to collaborate with UTM in projects that will benefit the community and the society.

Happy reading!

Assoc. Prof. Dr. Zaleha Abdullah
Director
Office of Corporate Affairs
Universiti Teknologi Malaysia



Prospering Lives with Translational Research

UTM is committed to be the best at what we do and to bring out the best of our people. We work together to achieve our common goals, to not only excel in academics but also expand our research and innovation beyond the campus.



UTM subscribes to the idea of Translational Research using our core strengths : Science, Technology and Engineering, applying the concept of applied knowledge to address industrial and societal issues. Apart from creating new knowledge and generating new insights, we work together with our partners to transform our academics to become entrepreneurs with impactful products to benefit the communities for years to come.



This magazine intends to highlight exemplary activities that have impacted communities through Technology and Knowledge Transfer Programmes, University Social Responsibility Programmes and Service Learning Programmes conducted by UTM staff and students which have all been designed to be in line with the Sustainable Development Goals (SDG) agenda.

This third issue features UTM Urban Farming in Johor as a result of various outstanding projects under the university that provides communities with advanced alternatives, solutions and knowledge in the field of agriculture.

PROSPERING LIVES
FROM OUR
EXPERTS TO COMMUNITY



UTM - URBAN FARMING IN JOHOR



PRACTISING
HUGEL
CULTURE



REJUVENATION
THROUGH
EDIBLE GARDEN



EDUCATING
GREENER URBAN
LIFE STYLE



OPEN LABORATORY
FOR COMMUNITY



PRACTISING HUGEL CULTURE

Hugel Culture or also known as “Hill Culture” or “Hill Mound” is an agriculture ecosystem development technique that aims to be more sustainable and independent than conventional system of modern agriculture. It is a process that rises bed gardens using rotten woods as preparation base together with organic substances, nutrients and air pocket to ensure a greater effectiveness of roots growth. It is also a gardening method that involved the usage of compost from degraded material to increase the quality of soil over time.

Sustainable Food Waste Composting for Urban Farming, Majlis Bandaraya Iskandar Puteri

Executive Summary

Uncontrolled solid waste disposal has been one of the challenges faced by housing areas embarking on an urban farming initiative. It is important to come up with a practical solution for managing food wastes as an alternative to landfills. Faculty of Science, UTM in collaboration with Majlis Perbandaran Iskandar Puteri (MBIP), has designed a model and a pilot project to be implemented in selected residential areas.

The pilot project aims to test the feasibility of the model and for it to be replicated in other residential areas. The sustainable composting techniques and hugel culture were used for the community garden project. The awareness talks on low carbon society, use of public transport, composting, and recycling were also delivered to the community.



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Beneficiary

Community of Taman Sri Orkid, Gateway Horizon Hill and Pangsapuri Kenari Kangkar Pulai.



Achievement

- Finalist of Anugerah Kejiranan Hijau organized by PLAN Malaysia
- Received 4 Star Community Engagement Impact Rating in 2019 by UTM CCIN



Impact

- 30 participants were satisfied with the program
- 10 kg food waste was used per week as compost
- Three persons did individually at home and the rest of the community based used green bin provided by MBIP
- A number of waste disposal areas were transformed into urban farming
- Established one IP module




Hugel Culture practices by communities





Edisi Pertama
 © Modul Kebun Bandar (Teknik Kultur Hugel dan Pengkomposan Mampas)

Hak cipta terpeliharai. Tidak dibenarkan mengeluar ulang mana-mana bahagian artikel, ilustrasi, dan isi kandungan buku ini dalam apa jua bentuk dan cara apa jua sama ada dengan cara elektronik, fotokopi, mekanik, atau cara lain sebelum mendapat izin bertulis daripada Majlis Bandaraya Iskandar Puteri dan Universiti Teknologi Malaysia. Perundangan tertakluk kepada perkaratan royalti atau honorarium.

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"IP Module is prepared for community to enhance their skills and knowledge in Hugel Culture technique and composting"
 - Dr. Huszalina (Faculty of Science, UTM)



"Dah ada boleh dituai. Ya gemuk-gemuk. Dah 3 kali dikutip hasilnya"
 - Mrs. Maziah, Guru (S.M.K. Impian Emas)





EDUCATING GREENER URBAN LIFESTYLE

Educating greener urban life style through green science projects implementation among school community. UTM also aimed at educating other communities in general to implement a better and greener agricultural approach which simultaneously giving them a chance to enhance the scenery of their residency with herbs and vegetable plants and get a supplemental revenue from it. _____

Informal Science Learning through Green Science Projects, Jelajah Sains Siri Hijau 2019

Executive Summary

Green efforts can start effectively from schools. Jelajah Sains is a STEM education program that involves a collaboration between Faculty of Science, UTM, Jabatan Pendidikan Negeri Johor (JPNJ). After its success in 2017 and 2018 for improving the interest and mastery in Science among 700 primary school students from various schools, the same students from four selected schools then participated in Jelajah Sains Siri Hijau (JSSH) 2019. It became the first association with Majlis Bandaraya Iskandar Puteri (MBIP) by adding a greener environment as its focus.

JSSH 2019 provided informal science learning experience while implementing green science projects in schools such as smart dustbin, DIY soap from used cooking oil, and edible garden which also educating students and teachers about gardening and composting. Through the program, the students were also able to continue maintain the garden and prosper from the harvested products.

Modules were developed by academicians from all departments in Faculty of Science and delivered by UTM students from the Co-Curriculum Centre and Service Learning (CCSL), Kelab Pembimbing Rakan Sebaya Kolej Tun Razak, and Kolej Tuanku Canselor Smart Camp club. The program injected awareness on urban farming as one of the solutions to have greener lifestyle in schools and environmental free habits in general.

Beneficiary

Four schools in Johor Bahru

Impact

- 160 secondary school students participated
- Created awareness on greener lifestyle through science projects

Achievement

- Developed five science project modules
- Received an outstanding 5 Star Community Engagement Impact Rating in 2019 by UTM



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Educating
greener
urban
lifestyle in
schools

Rejuvenation of Flat Taman Jaya through 'Science for All' and Urban Farming & Composting

Executive Summary

Quality of life requires one to be in a conducive environment that may be challenging to certain community groups such as those residing in low medium cost public housing. This had prompted the Faculty of Science, UTM in collaboration with Majlis Bandaraya Iskandar Puteri (MBIP) and Think City, to propose a rejuvenation program for Flat Taman Jaya.

The program started with a Festival-like day in February 2019 that exhibited a number of green projects to transfer knowledge from University to the community besides having more engagements through gotong-royong in cleaning up the neighborhood.

Urban Farming & Composting project was also organized which aimed at educating and exposing the community to implement a better and greener agricultural approach. Knowledge of green agriculture was cultivated amongst the community by a demonstration of composting food waste to be used as an alternative green fertilizer.



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Achievement

- Urban Farming & Composting project was implemented in the neighborhood
- Ongoing research collaboration between experts from UTM, MBIP and ThinkCity in water for Sungai Skudai
- The continuation of UTM-MBIP-Thinkcity collaboration in duplicating and improvising urban farming project for more communities
- Education module in urban farming and composting were developed



Beneficiary

- Community of Flat Taman Jaya
- Sungai Skudai



Impact

- Created awareness and educated the community about river rejuvenation, urban farming and greener lifestyle.
- Continuous collaboration for research and greener environment development


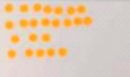






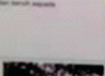
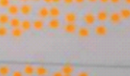


Educating greener urban lifestyle in surrounding communities

RANCANGAN PEMULIHARAAN SUNGAI SKUDAI

Sebelum membuat lawatan ke World Urban Forum (WUF9) yang lalu, pihak MBIP telah mendapatkan penglibatan Think City bagi membantu dalam usaha pelaksanaan projek pemuliharaan sungai berasaskan komuniti yang melibatkan tiga komponen utama:

- Pelan tindakan Sungai Skudai yang melibatkan tiga PBTs (MBJB, MBIP, Majlis Perbandaran Kulai)
- Rancangan kawasan khas (RKK) yang merangkumi kualiti air, sumber pencemaran kaedah pembersihan sungai, penambahbaikan kawasan awam dan program perubahan tingkah laku.

3) PROJEK PERINTIS FLAT TAMAN JAYA

Komponen	Apakah projek pilihan anda?
<p>Edukasi komuniti / Peralihan budaya - menjadikan budaya UTM</p> 	
<p>Buang sampah di tempat - pemuliharaan budaya UTM</p> 	
<p>Persembahkan alam sekitar dan hijau</p> <ul style="list-style-type: none"> Menanam pokok-pokok dan sebagainya Menggunakan alat pengangkutan awam Menggunakan alat pengangkutan awam 	
<p>Program keselamatan untuk pemuliharaan kawasan khas</p> <ul style="list-style-type: none"> Membuat dan memasang alat pengangkutan awam Membuat dan memasang alat pengangkutan awam 	
<p>Program mengumpul bungkusan flat</p> <ul style="list-style-type: none"> Membuat dan memasang alat pengangkutan awam Membuat dan memasang alat pengangkutan awam 	
<p>Bekalan air dan pemuliharaan sumber</p> 	

thinkCITY
REANIMATING THE CITY TOGETHER



Lukisan Harapan

buat Padang Bfutsal
011 62 11 7639
Saya inginkan penduduk bersatu membersihkan flat Taman Jaya

Sungai Bersih.

Sediakan Tang sampah banyak.

Saya cadangkan Saya nak flat saya bersih dan cantik.

Menginginkan kawasan yang kondusif untuk tinggal dan belajar

Buat Bar Street warung

Saya cadangkan Sungai bersih dan cantik.

SISTEM JEMBUAN SAMPAH YANG LEBIH TERATUR.

Cantik, canggih, selamat, BITE

Kawasan Kediaman Bebas dari Pencemaran Kimia & Biologi.

Tangan ke arah kampung ke dalam Sungai.

Kawasan Rumah memajukan

Sungai yang bersih, hak kami

Kami nak flat kami bersih.

kami mahu persekitaran yang cantik dan bersih dengan potot-potot

Saya ingin flat yang dan aman di kawasan sungai yang bersih dan banyak pepohonan yg asli agar suasana sejuk dg kelincahannya.

JAYA MAMU LOKUPRANG KE ROSAK DPERBAIKI DAN FLAT KAMI DICAT.



REJUVENATION THROUGH EDIBLE GARDEN

The establishment of Edible Garden was aimed to create a sense of empowerment among communities to learn, organize and execute the rejuvenation program as well as encourage their entrepreneurial skills to generate revenue. _____

Bangsa Johor Bahagia Edible Garden

Executive Summary

In order to encourage unity amongst communities residing in different blocks, Bangsa Johor Bahagia Edible Garden which was part of a rejuvenation program for the community of Bandar Kangkar Pulai Flat, was established and guided by techniques and methods developed by UTM. UTM role in the rejuvenation program was to provide knowledge and technology transfer to the community together with Majlis Bandaraya Iskandar Puteri.

The edible garden aims to create a sense of empowerment among communities to learn, organize and execute a rejuvenation program, to ensure vegetables and crops are taken care off and harvests are shared amongst the community members, and to work on their entrepreneurial skills to generate revenue through a digital platform.



Community of Bandar Kangkar Pulai Flat.



- Vegetables and herbs can be harvested and sold online
- Communal activities have increased
- Bonding amongst members have improved



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Rejuvenation through
edible garden





OPEN LABORATORY FOR COMMUNITY

UTM has established an open laboratory for organic waste management to serve as an area for research and innovation particularly in developing a systematic composting system that supports solid waste segregation efforts and provide a fertigation system as a tool for the improvement of various biological aspects of chili.

Community Link Biocompost Open Laboratory

Executive Summary

The need to innovate and explore new ways of effective waste management is important for a desirable urban farming goals. Faculty of Science, UTM had established an open laboratory for organic waste management in June 2020 by converting a designated green area within the faculty. Named as “Community Link Biocompost Open Laboratory”, the project was made possible by the support from the Research and Sustainability Unit of Iskandar Puteri City Council.

The open lab serves as an area for research and innovation particularly in developing a systematic composting system that supports solid waste segregation efforts. New techniques or technology developed through the lab will be transferred to the surrounding communities embarking on urban farming.



Communities within Iskandar Puteri City Council.



- Participants embarked on urban farming
- Urban farming area adopted UTM model and technique



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Fertigation as a Tool for Small Scale Pesticide-free Chilli Production

Executive Summary

Chilli or its scientific name *Capsicum annum* is a popular vegetable crop in Malaysia and UTM has implemented an agriculture project with the aim of providing a fertigation system as a tool for the improvement of various biological aspects of chilli including plant growth and development, plant botany, and plant pathology. To date, its fertigation unit which consists of 180 plants yielded approximately 15 kg chilli per week and considered as pesticide free farming.

The outcome of this project is an optimum fertigation system for chilli production. As in line with the Fourth Industrial Revolution and agricultural precision, the project is in the process of integrating with IoT to enhance chilli production. Such integrated fertigation system could be applied for the improvement of chilli yield in the rural and urban areas.



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Beneficiary

Urban-farming community.



Achievement

- On-going project (~65 kg Chilli)



Impact

- Provides technical service on hands on small operating fertigation unit for chilli-free pesticide production
- Provides supporting unit for undergraduate and postgraduate programs at the Faculty of Science





Agrotani UTM



News
COVERAGE

Taking delight in urban farming during MCO

By YEE XIANG YUN



METRO NEWS

Saturday, 21 Nov 2020



The Kangkar Pulai Kenari Flats community farming project recently bagged the first runner-up prize in this year's Town and Country Planning Department Green Neighbourhood Award, thanks to the residents' efforts.

JOHOR BARU: Urban farming is getting increasingly popular among residents here, with many turning to horticulture to pass their time especially during the pandemic.

Property developer Datuk Steve Chong Yoon On, who is Federation of Hakka Associations Malaysia president, found himself with a lot of time on his hands during the movement control order (MCO) in March and decided to do some gardening.

"Other than surfing the Internet, all of a sudden there was nothing much for me to do during the MCO as I could not go out for work and meetings.

"I did not want to be idle at home so I allotted a 1m by 10m space in the compound of my house and tried my hand at gardening to keep myself active and work up some sweat," the 65-year-old said in an interview.

Kangkar Pulai flats residents join forces to create thriving garden

By YEE XIANG YUN



METRO NEWS

Tuesday, 29 Sep 2020



Dr Nurhusna (left, in yellow) giving some tips to the residents on how to improve their crops at the Kangkar Pulai Kenari Flats community farm.

JOHOR BARU: The Kangkar Pulai Kenari Flats here, occupied by mostly low-income residents, has been shortlisted in this year's Town and Country Planning Department (PLANMalaysia) Green Neighbourhood Award contest.

Its residents committee chairman Rosli Othman said they were delighted and proud to be the only neighbourhood in Johor to be shortlisted in the award's high-rise category.

The flats, comprising 10 four-storey blocks with 600-odd residents, has been occupied since 1998 and this is the first time it has been shortlisted for any award, he said.

"I think our community farming project and compost-making efforts, which garnered the support and cooperation of the residents, were what got us shortlisted.

A growing venture

By YEE XIANG YUN



METRO NEWS

Thursday, 01 Oct 2020

Related News



CONSTRUCTION 12h ago
More projects in the pipeline

NATION 19h ago
Melaka to continue development plans in anticipation of HSR...

METRO NEWS 21 Nov 2020
Taking delight in urban farming during MCO



Nurhusna (second from left) guiding residents (from left) Rosnah Rahmat, Sanisah Senin and Rosli as they tend to ginger plants at the community garden.



UTM Urban Farming Projects for Local Community

Leave a Comment / Announcement, Community Engagement, General, Health and Fitness, Impactful Research & Development/Project/Commercialisation, Industrial/Institutional Collaboration & Networking, Santai / By Hafizan Hamzah

What is Urban Farming?

Urban farming is related to growing or planting in order to produce food in a city by encouraging the

Acknowledgement

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Zalawati Sufian | Fahamin Abdul Ghani

And all those who have contributed directly or indirectly in the process of producing this magazine

Thank You

For more information about research projects and their contributions to the society, please refer to:

<https://online.fliphtml5.com/niewq/bdti/#p=1>



The divine law of Allah is the foundation of knowledge. In line with His Will, UTM strives with total commitment to attain excellence in science, technology and engineering for the well-being and prosperity of mankind.

-UTM Philosophy

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