

ASEAN-CHINA-INDIA

**YOUTH LEADERSHIP
SUMMIT 2024**

SUSTAINABILITY STARTATHON
BRUNEI DARUSSALAM



MEET THE TEAM



SARAH ALIYAH
(DATA COLLECTOR/JCUS)



KASHA
(LEADER/UNISSA)



AFIFAH
(TECHNICIAN/UBD)



MUHAMMAD SYAHMI
(HEAD OF
MEDIA/UNISSA)

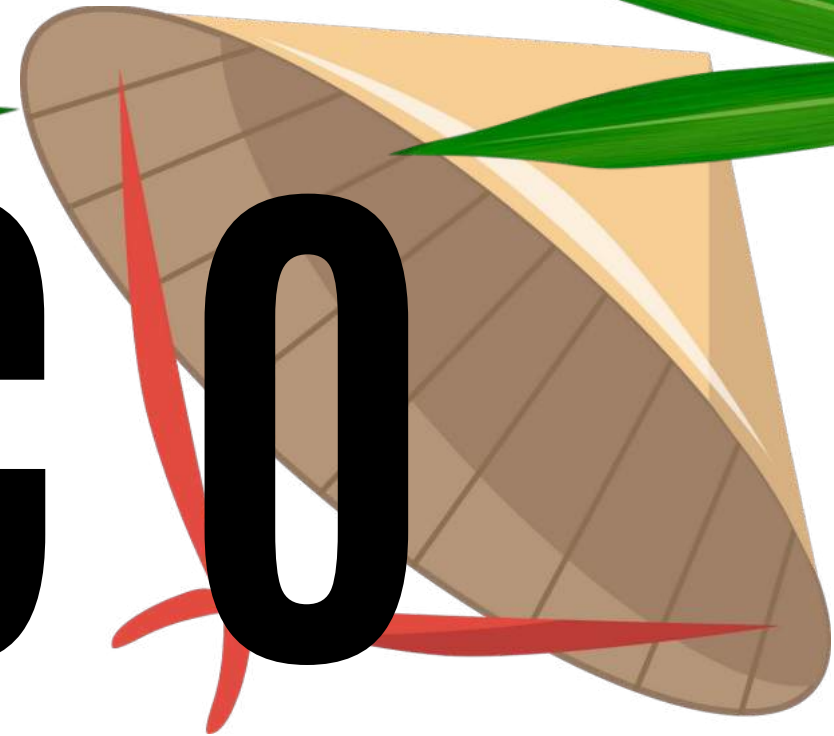


ISKANDAR
(ASSITANT MEDIA/PTEB)



The background features several vertical bamboo stalks with green, pointed leaves. Small, clear water droplets are scattered across the stalks and leaves, giving a fresh, natural feel. The overall composition is clean and modern.

E C O



F L O

**THE PADIAN
FARM**

ECO

FLO



THE PADIAN
FARM

INTRODUCTION

EcoFlo is a bridge between a blue space and a green space that shapes the condition of the community's infrastructure into nature-centred spaces. It extends the practice of agriculture to the village community and is a small step to encourage green practices amongst the community. This project presents an innovation for the agricultural sector in terms of reimagining local crop production.



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FARM



PROBLEM STATEMENT

INCLUSIVE CITY FOR ALL: HOW MIGHT WE CREATE AND MAINTAIN GREEN PUBLIC SPACES WITHIN BRUNEI THAT ARE ACCESSIBLE TO ALL RESIDENTS, PROMOTING COMMUNITY COHESION AND WELL-BEING?



11 SUSTAINABLE CITIES
AND COMMUNITIES



SUMMARISE THE PROBLEMS

CORE ISSUE:



URBANISATION
OF THE WATER VILLAGE—
FRAGMENTATION OF
HERITAGE.

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FOOD SECURITY:
SELF-SUFFICIENCY THROUGH
REVIVING AGRICULTURAL
PRACTICES.

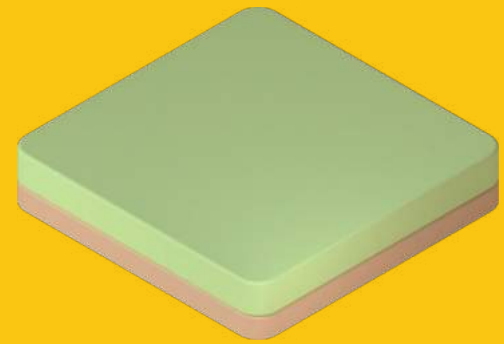


**OVERGROWN BAMBOO IS
UNUTILISED.**



BENEFITS OF

(BENEFITS OF HYDROPONIC)



LAND:

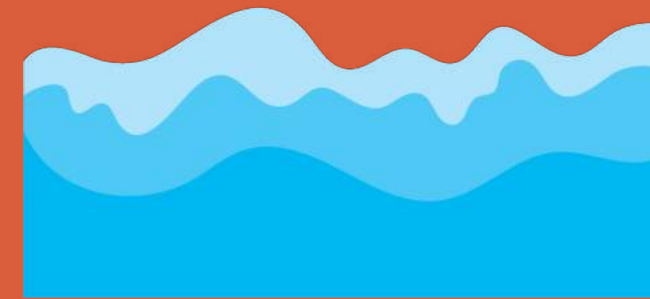
THE HIGH YIELD OF HYDROPONICS IS NOTABLE, AS IT REDUCES THE AMOUNT OF LAND NEEDED FOR PRODUCTION GROWTH.



TOURIST ATTRACTION:

EMPHASISING ITS UNIQUE AND INNOVATIVE ASPECT AS WELL AS OFFERING INTERACTIVE AND EDUCATIONAL EXPERIENCES.

SOLUTION:



WATER:

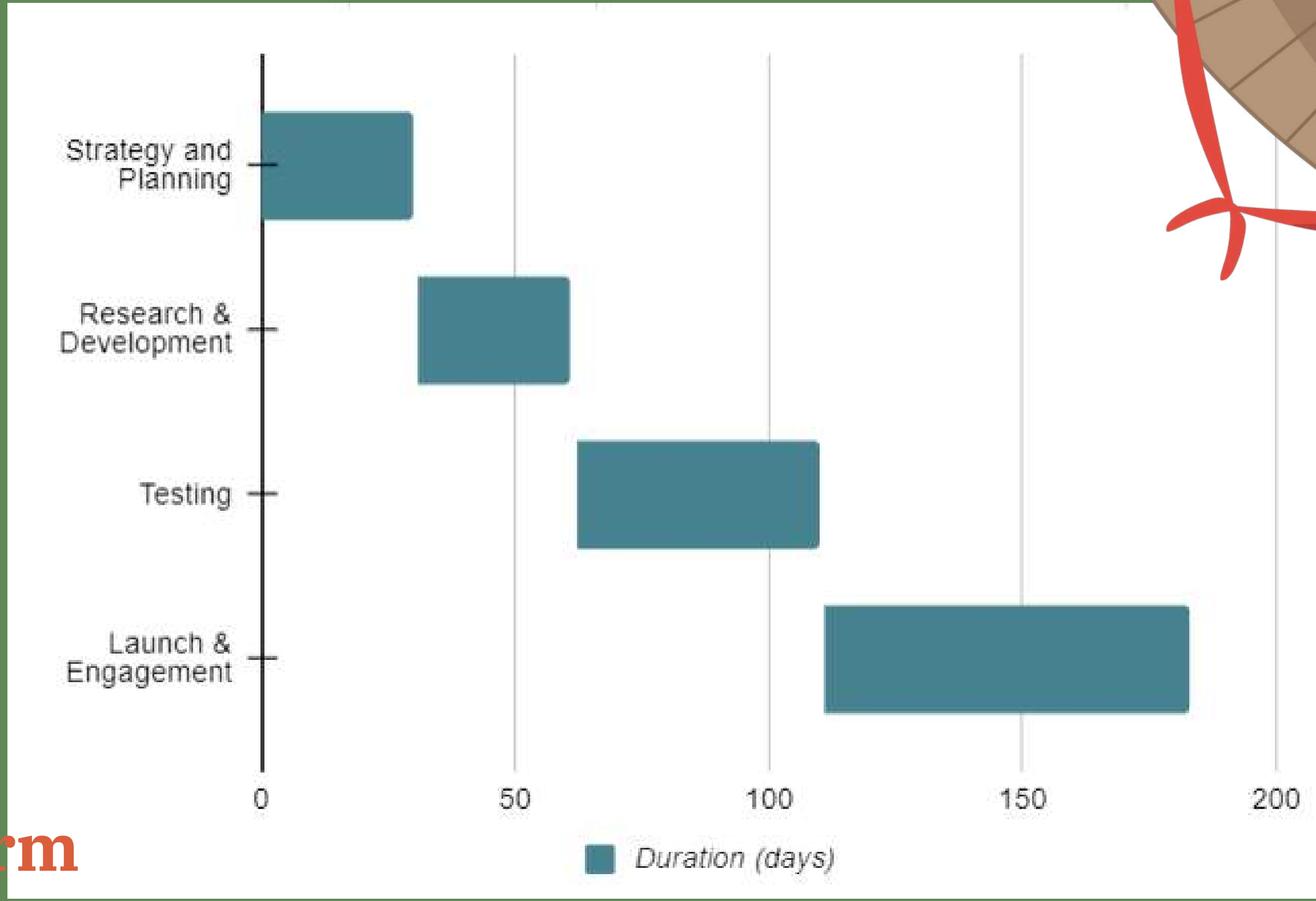
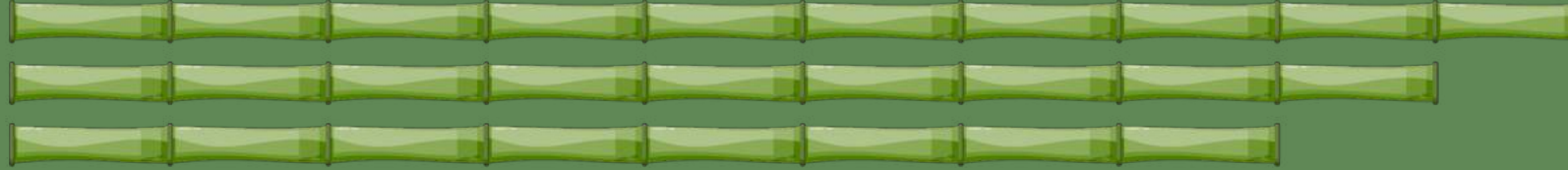
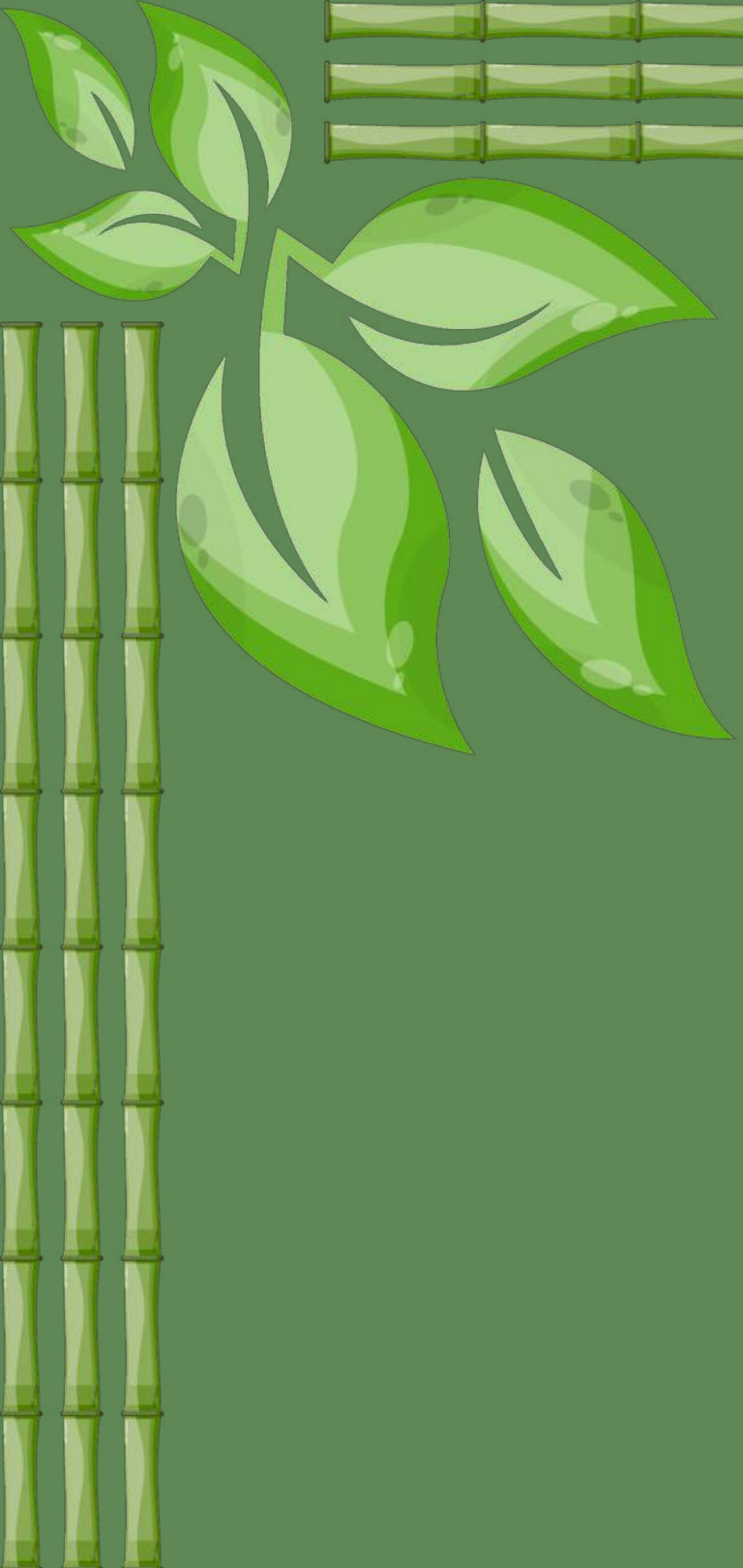
WHILE CONVENTIONAL AGRICULTURE EXHAUSTS WATER USAGE THROUGH EVAPORATION AND LEACHING, HYDROPONICS IS MORE EFFICIENT AS IT RECIRCULATES THE WATER SUPPLY; APPROXIMATELY 80-90% OF IRRIGATION WATER CAN BE SAVED IN THIS PROCESS.



GROWING MEDIUM:

HYDROPONIC SYSTEMS UTILISE MINIMAL GROWING MEDIUM FOR PLANTS, WHICH ELIMINATES THE NEED FOR SOIL.





The Padian Farm

Project Phases - By days

Project Timeline

JULY - AUG 2024

MARKET ANALYSIS
SITE ANALYSIS
SYSTEM DESIGN &
DEVELOPMENT
PROTOTYPE
DEVELOPMENT
CROP SELECTION
COST ANALYSIS &
BUDGETING

SEPT - MID-OCT
2024

JAN 2025

SOURCING

RESEARCH &
DEVELOPMENT

TESTING

LAUNCH

ENGAGEMENTS

SOURCING
PROTOTYPE

SOURCING
HYDROPONIC
INPUTS

AUG - SEPT 2024

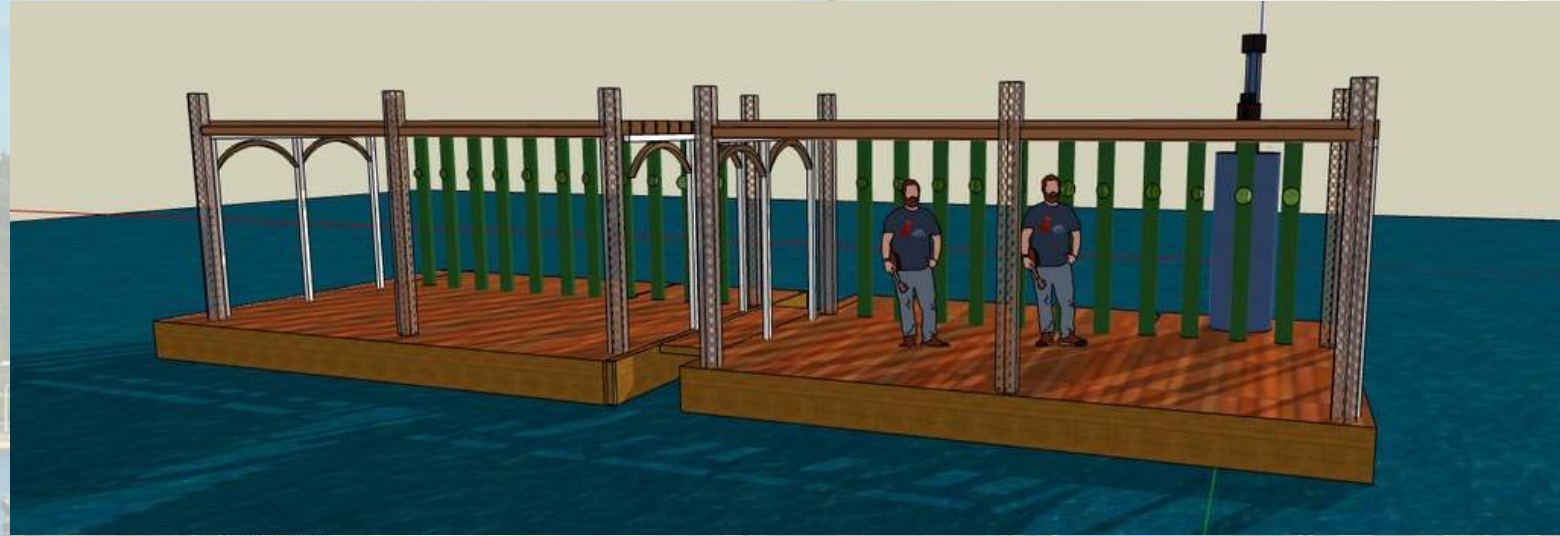
NUTRIENT SOLUTION
ENVIRONMENT
CONTROL SYSTEMS
AUTOMATION &
MONITORING
DATA COLLECTION &
ANALYSIS

PRODUCT LAUNCH
SERVICES LAUNCH

OCT 2024

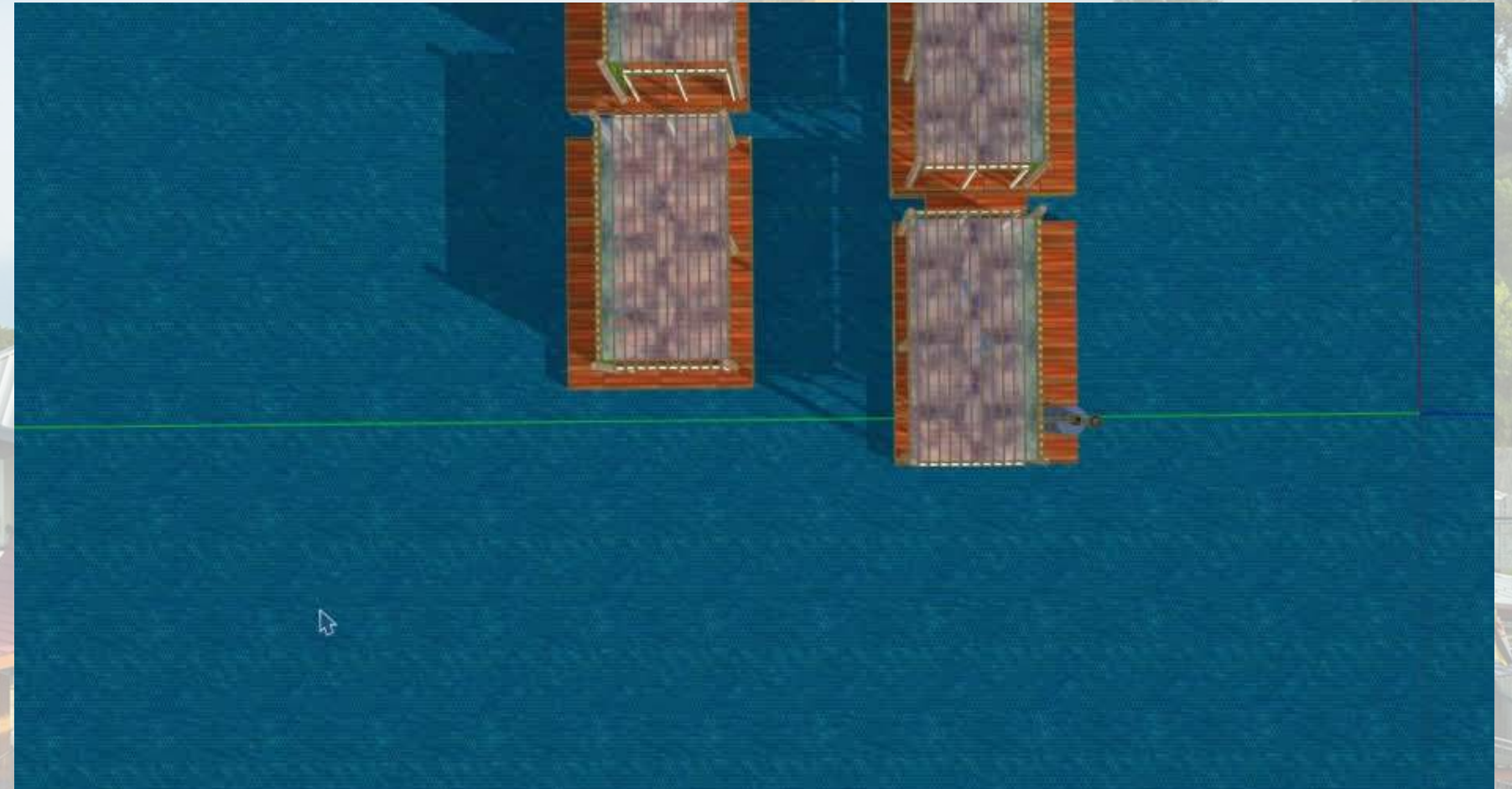
PARTNERSHIPS &
STAKEHOLDERS

DESIGN IDEA



ROUGH SKETCH

3D MODEL



RAINWATER HARVESTING (RWH)

BAMBOO GROW POLES

AIR COMPRESSORS

SOLAR PANELS

NUTRIENT SOLUTION WILL BE TESTED BY SOIL SCIENCE AND PLANT NUTRIENT UNIT, BRUNEI AGRICULTURE RESEARCH CENTRE

REFERENCE IDEA



FISH FARM BRUNEI



NFT HYDROPHONIC

EXPECTED RESULTS OF THE SOLUTION



ECONOMIC AND FINANCIAL OUTCOMES

RETURN ON INVESTMENT AND INCOME: BY SELLING FRESH PRODUCE LOCALLY



BOOSTS ECO-TOURISM: UNIQUE AND ATTRACTIVE FLOATING GARDEN

JOB CREATION: OPENS EMPLOYMENT OPPORTUNITIES

CONSERVES WATER THROUGH EFFICIENT REUSE IN THE HYDROPONIC SYSTEM

LOCAL PRODUCTION REDUCES GREENHOUSE GAS EMISSIONS FROM TRANSPORTATION AND IMPORTS.

USES WATER SURFACES FOR AGRICULTURE, PRESERVING LAND FOR NATURAL HABITATS.

ENVIRONMENTAL OUTCOMES



SOCIAL AND EDUCATIONAL OUTCOMES

CENTRE FOR LEARNING ABOUT HYDROPONICS AND SUSTAINABLE AGRICULTURE THROUGH WORKSHOPS AND TOURS.

green space for recreation and community events, encouraging local involvement

A TESTING GROUND FOR NEW HYDROPONIC TECHNIQUES AND COLLABORATIONS WITH RESEARCHERS

ENHANCES THE BEAUTY AND VIBRANCY OF WATER VILLAGE AREAS

A SYMBOL OF INNOVATION AND SUSTAINABILITY, COMBINING WITH LOCAL CULTURAL PRACTICES

CULTURAL AND VISUAL OUTCOMES



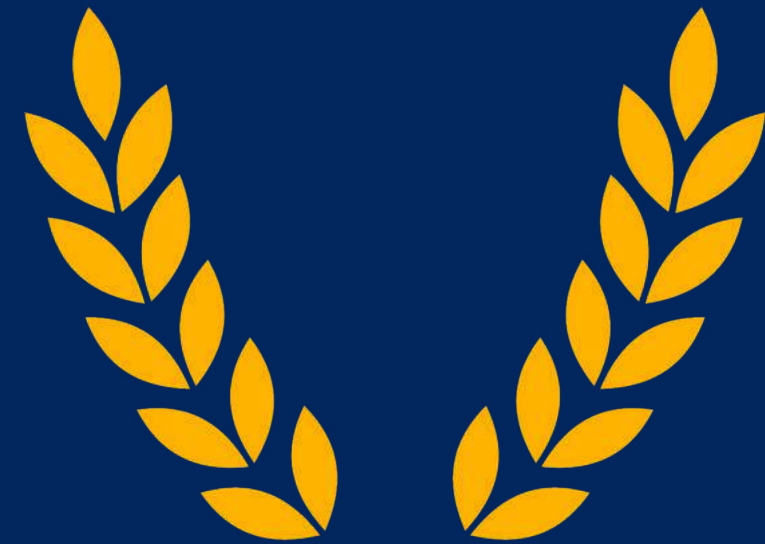
METRICS FOR THE PROJECT OVERTIME

*Specifically on agriculture into the village communities and encouraging green practices
(Strategy for product's feasibility and long-term sustainability)*



HOUSEHOLD ADOPTION

WE'LL CREATE THE A REPORT FOR THE NUMBER OF HOUSEHOLDS INVOLVED WITH THE FACILITIES FOR PLANTING. INCENTIVE SYSTEM BY TIERS - WHEREBY THE TOP 3 WILL BE HAVE DISCOUNT 80%, 50% AND 30% ON THE RENT OF HYDROPONIC SPACE.



SUCCESS RATES OF CROPS YIELD IDENTIFIED

THE POSSIBLE USERS WILL HAVE TO SEND A PICTURE OF THE OVERALL SUCCESS RATE OF THE PLANTS.

Project Cost

	Items	Cost/Unit	Total Cost
1	Filter - Runlucky RL-Q01A/RL-Q02A Automatic filter the water Backwashable Disk Pre Filter Water Prefilters	\$163.16/ pc	
2	Compressor - DP-70 High Flow, High Pressure Electrical Diaphragm Water Pump	\$36.00/ pc	
3	Nets - 100% HDPE Vegetable Garden Shade	\$0.36/ square metre	
4	Solar Panels - Hybrid Off Grid Bess Solar Panels	\$3.56/200 watt	
5	Nutrient Supplements - EDTA-Mn 13% EDTA MIX Fertiliser	\$2.40/ kg	
6	Rain Barrels	\$130/ small barrel	
7	Bamboo	-	

Expected Income/ month:

Allotment cost: \$5/ bamboo space. (Expected at least 5)

Visitation fee: \$3/ person (Expected 10- 20)

Rent fee: \$10/ hour (Expected 2- 5)

Crop supplier: \$50/ batch (Within 1 month)

Projection period:

- A target of \$185/ month = \$2,220/ year.

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REVENUE GENERATION



SELLING FRESH PRODUCTS



RENTING SPACES/TOUR



WORKSHOPS



CSA (COMMUNITY SUPPORTED AGRICULTURE)



DIRECT SALES TO RESTAURANTS AND GROCERY STORES OR GROCERY STORE PARTNERSHIPS



COLLABORATIVE RESEARCH



MARKET ANALYSIS

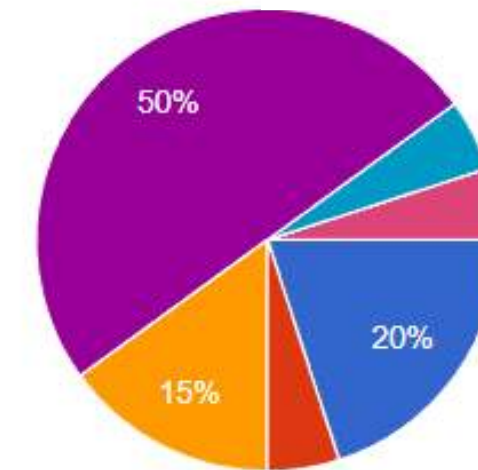
What types of vegetables are purchased often? Jenis-jenis sayur-sayuran apakah yang sering dibeli?

31 responses



What features do you look for in a plant? Ciri-ciri apakah yang anda cari dalam tanaman?

Ciri-ciri apakah yang anda cari dalam tanaman?



- Low Maintenance / Penjagaan mudah
- Fast Growing / Pertumbuhan cepat
- Flowering / Berbunga
- Foliage / Follij (Berdaun)
- Edible / Boleh dimakan
- Fragrant / Wangi
- all as stated above, but depends

Demand	Crop type	Growth rate	Volume per production
Most	Leafy Greens	5- 10% annually	Ranges of several million tons per year
	Fruits & Vegetables	2- 5% annually	Range of hundreds of millions of tons per year
Least	Cruciferous & Root Vegetables	2- 6% annually	Approx. over 350 million tons annually

THE RESULTS IS THEN FURTHER ASSESSED BY THE GROWTH RATE OF THE CROPS AND THE VOLUME PER PRODUCTION

SEEDS COSTS AND THE COST OF SELLING

Lettuce	Seed cost	Cost of selling
1 seed	\$0.025	\$0.50
1000 seeds	\$25	\$500

1 NUTRIENT A&B MIX 25KG = \$220

1 BOX OF LETTUCE (CONTAINING 4-5 PLANTS) = \$4 - \$4.5

9 HYDROPONIC PLATFORM TO BE BUILD



VALUE PROPOSITION

	Stakeholders	Government Agencies	Educational Institutions	Non- Profit Organisations	Agribusiness Companies	Entrepreneurs/ Retailers
Production	Fresh Produce				✓	✓
	Organic Produce				✓	✓
	Hydroponic Systems	✓	✓			
	Seedling & Plant Nursery	✓	✓			
Services	Operational Training		✓			
	Sustainability consultation		✓			
	Hydroponic Farming Courses		✓	✓		
	Academic/ Community Outreach Programs	✓	✓	✓	✓	✓
	B2B/ B2C (Direct- to-customer)				✓	✓
	Product Development - technological applications	✓	✓		✓	✓



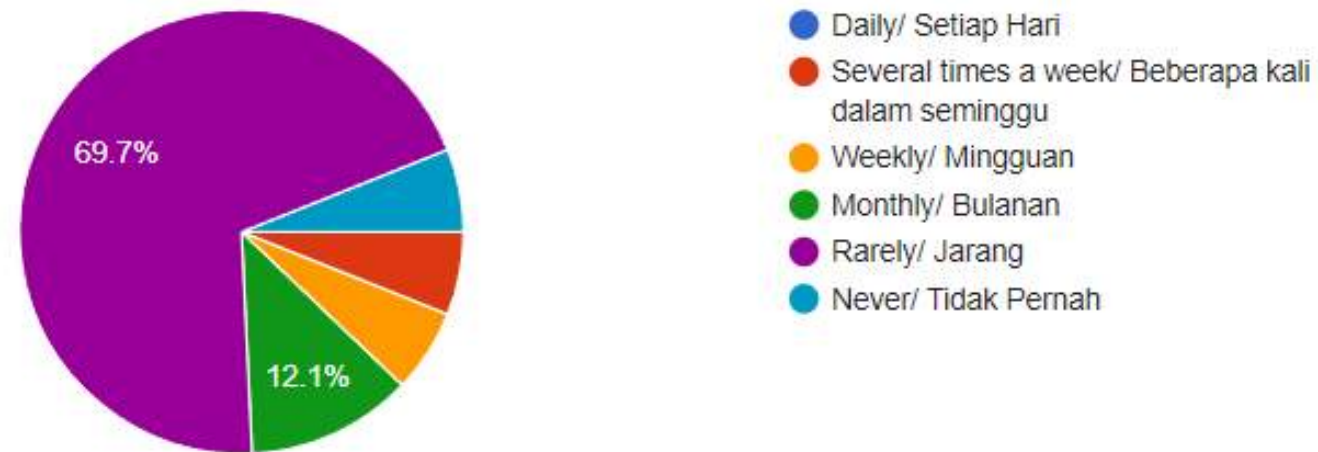
STAKEHOLDERS

	Government Agencies/ Organisations	Educational Institutions	Non- Profit Organisations	Agribusiness Companies	Entrepreneurs/ Retailers
Local	Agricultural Extension Division, Agriculture and Agrifood Department Jabatan Alam Sekitar, Taman dan Rekreasi	Universiti Brunei Darussalam Universiti Teknologi Brunei Universiti Islam Sultan Sharif Ali, Campus Sinaut Institute of Brunei Technological Education (IBTE)	BruWILD Green Brunei Kilang ReRoot	Kabunku Aquaponics Enterprise Farmstotable	Agrome market Farmgate Trading Rimba Garden Central Eco-Agro Farm
International	Global Agriculture & Food Security Programs International Fund for Agriculture Development	CityFarm Malaysia Alison ACS Distance Education	Global Alliance for Improved Nutrition (GAIN) African Bamboo One Acre Fund	Agricarb Ponix Systems	

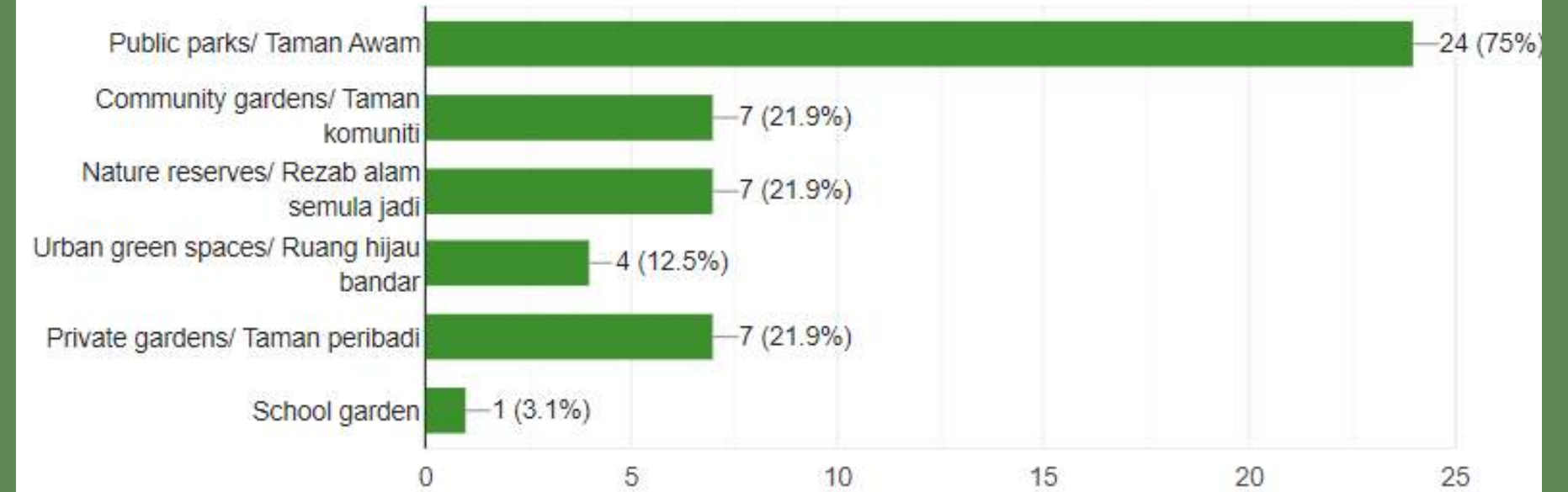


DATA FOR GREEN SPACE

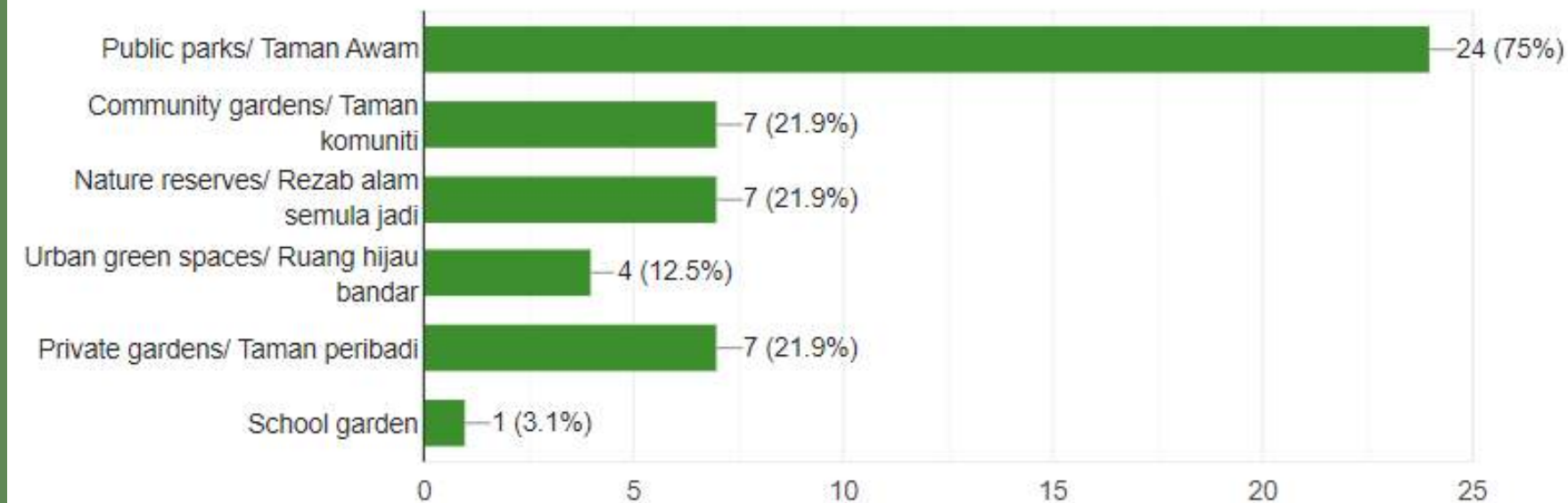
How often do you visit green spaces (e.g., Taman Mahkota Jubli Emas, Eco Ponies Garden, Tasek Lama Recreational Park)? / *Berapa kerap anda mengunjungi ruang hijau (contohnya, Taman Mahkota Jubli Emas, Eco Ponies Garden, Tasek Lama Recreational Park)?*



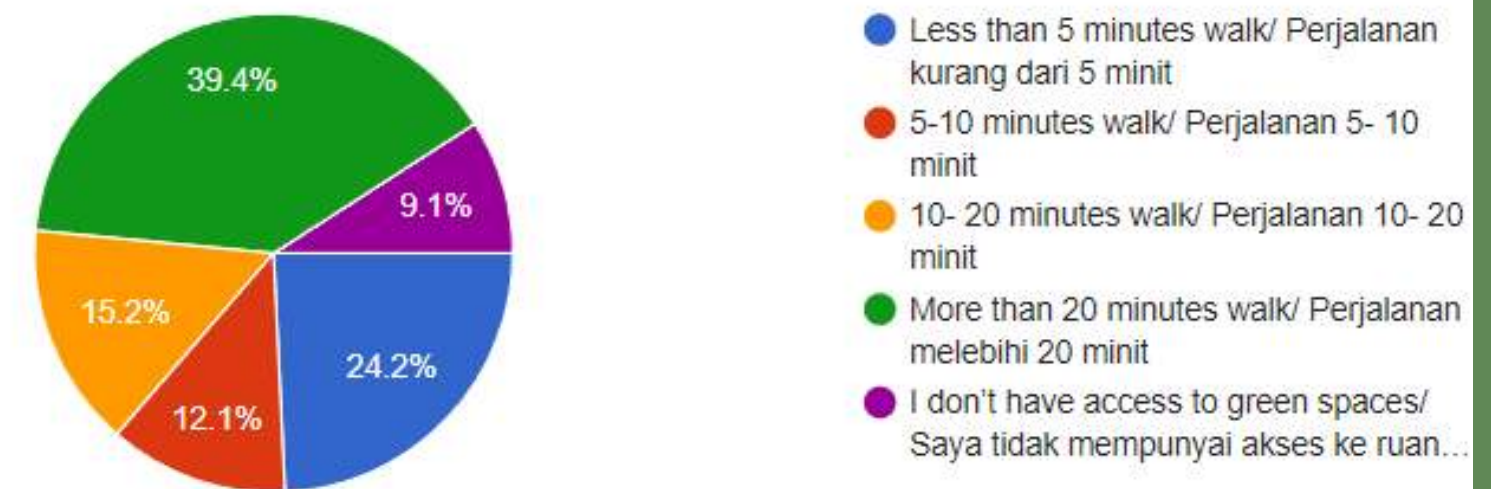
What types of green spaces do you visit most frequently? (Select all that apply)/ *Jenis ruang hijau apakah yang paling kerap anda kunjungi? (Pilih semua yang berkenaan)*



What types of green spaces do you visit most frequently? (Select all that apply)/ *Jenis ruang hijau apakah yang paling kerap anda kunjungi? (Pilih semua yang berkenaan)*

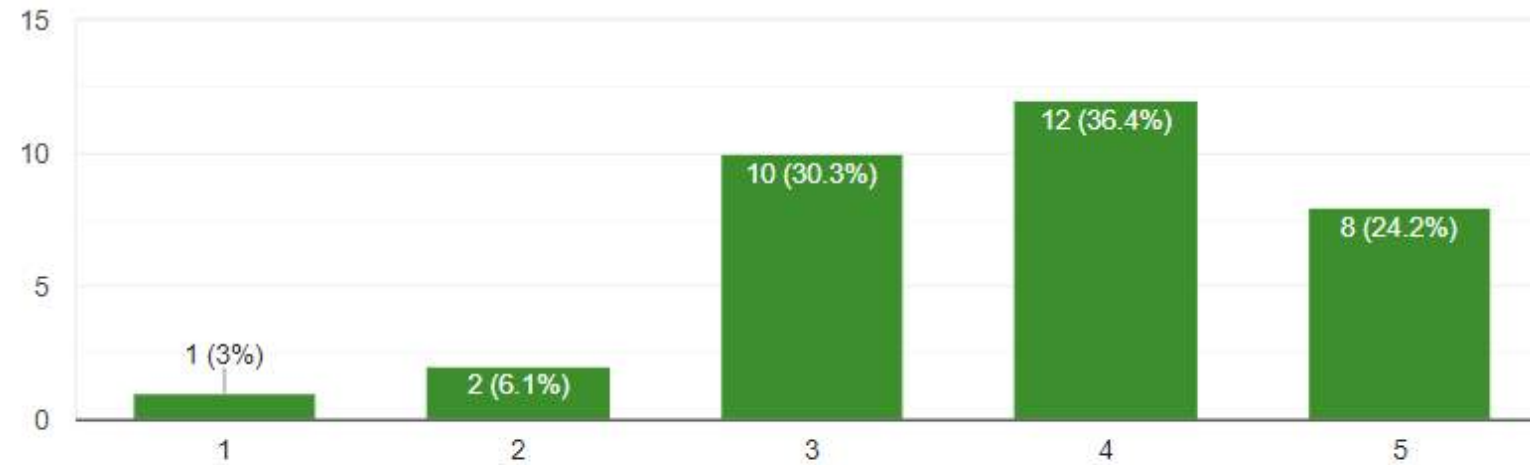


How far is the nearest green space from your home?/ *Sejauh mana ruang hijau yang terdekat dari rumah anda?*

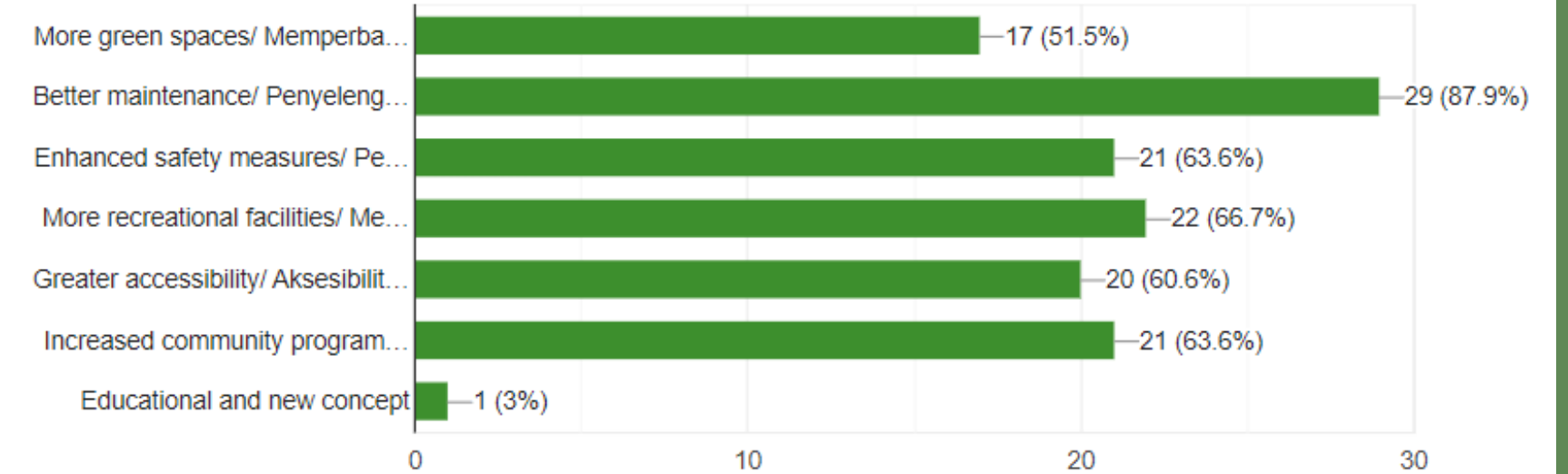


DATA FOR GREEN SPACE

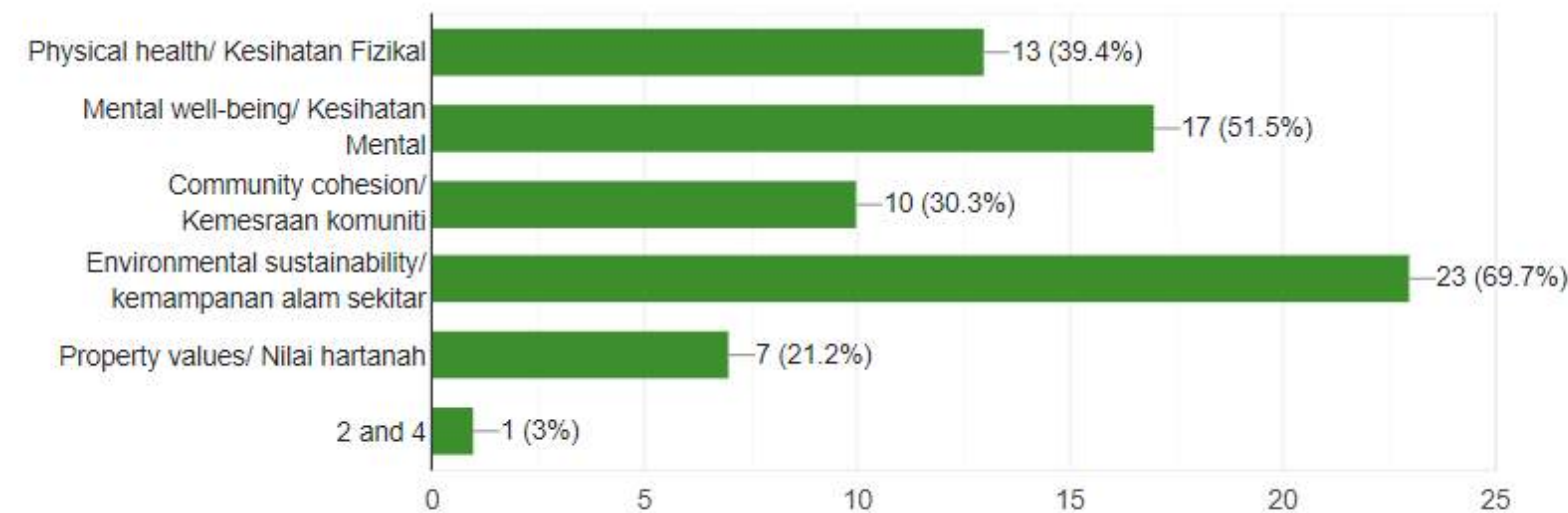
How important are green spaces to you personally? (Rate on a scale from 1 to 5, with 1 being not important and 5 being very important)/ Tahap kepentingan ruang hijau bagi anda secara peribadi?



What improvements would you like to see in green spaces in your area? (Select all that apply)/ Apakah penambahbaikan yang anda ingin lihat dalam ruang hijau di kawasan anda? (Pilih semua yang berkenaan)

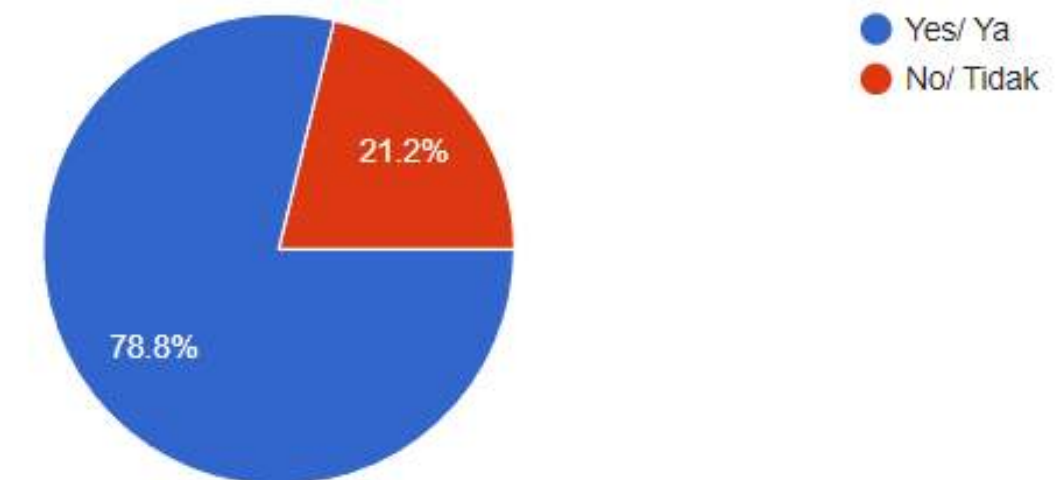


Do you believe green spaces contribute to the following? (Select all that apply)/ Adakah anda percaya ruang hijau menyumbang kepada perkara berikut? (Pilih semua yang berkenaan)



Would you be interested in participating in community activities or volunteer programs to improve green spaces?/ Adakah anda berminat untuk menyertai aktiviti komuniti atau program sukarelawan bagi memperbaiki ruang hijau?

3





CONCLUSION

IN SUMMARY, BRUNEI'S KAMPONG AYER SHOWS HOW THE ECOFLO CONCEPT ADDRESSES KEY ISSUES LIKE FOOD SECURITY, URBAN GROWTH, AND CULTURAL PRESERVATION. BY USING HYDROPONIC TECHNOLOGY IN GREEN PUBLIC SPACES, ECOFLO TURNS BAMBOO INTO A VALUABLE RESOURCE, PROMOTES SELF-SUFFICIENCY, AND ALIGNS WITH BRUNEI'S VISION 2035 GOALS AND SDG 11 - SUSTAINABLE CITIES AND COMMUNITIES.

IMPLEMENTING ECOFLO IN KAMPONG AYER'S GREEN SPACES NOT ONLY IMPROVES THE LOCAL QUALITY OF LIFE BUT ALSO SERVES AS A MODEL FOR OTHER COMMUNITIES. THE PROJECT AIMS TO SHOW THAT WELL-DESIGNED SPACES THAT COMBINE MODERN AND TRADITIONAL ELEMENTS CAN BUILD STRONG, VIBRANT COMMUNITIES.



Welcome back, NURAFIFAH HANISAH BINTI HAJI ROSLAN!

✉ pipahhr24@gmail.com

Assignments

Activity ^

PMI PDU

NASBA CPE

Journeys

External Learning

Role and Skill Ratings

Skill Benchmarks

My Live Courses

My Achievements

Leaderboard

Learn Together

All activity

[Download CSV](#) ⓘ

TITLE ⇅	TYPE ⇅	STATUS ⇅	STARTED ⇅	COMPLETED ⇅	HIGH... ⇅	
Design Thinking for Innovation: Stak...	Course	Completed	07/27/2024	07/27/2024	92	⋮
Design Thinking for Innovation: Prot...	Course	Completed	07/27/2024	07/27/2024	92	⋮
Design Thinking for Innovation: Defi...	Course	Completed	07/27/2024	07/27/2024	97	⋮
Design Thinking for Innovation: Brai...	Course	Completed	07/27/2024	07/27/2024	94	⋮
SDGA002 Cities & Challenge of Sus...	Course - Lin...	Completed	07/19/2024	07/19/2024	97	⋮
Verifying and Building on Creative I...	Course	Completed	07/19/2024	07/19/2024	87	⋮
Unleashing Personal and Team Crea...	Course	Completed	07/19/2024	07/19/2024	82	⋮
Leadership Insights on Leading Inno...	Course	Completed	07/19/2024	07/19/2024		⋮
Developing a Team of Creative Gurus	Course	Completed	07/19/2024	07/19/2024	96	⋮
Building Innovation Cultures and Le...	Course	Completed	07/19/2024	07/19/2024	100	⋮
Sustainability by NCS	Course - Lin...	Completed	07/19/2024	07/19/2024	100	⋮
SDG A001 Transforming Our World:...	Course - Lin...	Completed	07/19/2024	07/19/2024	94	⋮



Welcome back, Dk Sarah Nuurul Aliyah PG OMAR ALI!

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Assignments

Activity ^

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TITLE ↕	TYPE ↕	STATUS ↕	STARTED ↕	COMPLETED ↕	HIGH... ↕	
Unleashing Personal and Team Crea...	Course	Completed	07/25/2024	07/26/2024	90	⋮
Verifying and Building on Creative Id...	Course	Completed	07/26/2024	07/26/2024	80	⋮
Sustainability by NCS	Course - Lin...	Completed	07/25/2024	07/25/2024	80	⋮
Leadership Insights on Leading Inno...	Course	Completed	07/25/2024	07/25/2024		⋮
Developing a Team of Creative Gurus	Course	Completed	07/25/2024	07/25/2024	92	⋮
Building Innovation Cultures and Lea...	Course	Completed	07/25/2024	07/25/2024	84	⋮
Design Thinking for Innovation: Stak...	Course	Completed	07/24/2024	07/24/2024	83	⋮
Design Thinking for Innovation: Prot...	Course	Completed	07/23/2024	07/24/2024	93	⋮
Design Thinking for Innovation: Defi...	Course	Completed	07/23/2024	07/23/2024	88	⋮
Design Thinking for Innovation: Brai...	Course	Completed	07/22/2024	07/22/2024	86	⋮
SDGA002 Cities & Challenge of Sust...	Course - Lin...	Completed	07/22/2024	07/22/2024	96	⋮
SDG A001 Transforming Our World: ...	Course - Lin...	Completed	07/19/2024	07/22/2024	96	⋮



Welcome back, Muhammad Syahmi Bin Soffriana!

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Assignments

Activity ^

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My Achievements

All activity

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TITLE	TYPE	STATUS	STARTED	COMPLETED	HIGH...	
Verifying and Building on Creative I...	Course	Completed	07/29/2024	07/29/2024	92	⋮
Unleashing Personal and Team Crea...	Course	Completed	07/29/2024	07/29/2024	89	⋮
Leadership Insights on Leading Inno...	Course	Completed	07/29/2024	07/29/2024		⋮
Developing a Team of Creative Gurus	Course	Completed	07/28/2024	07/28/2024	92	⋮
Building Innovation Cultures and Le...	Course	Completed	07/28/2024	07/28/2024	100	⋮
Design Thinking for Innovation: Stak...	Course	Completed	07/28/2024	07/28/2024	86	⋮
Design Thinking for Innovation: Prot...	Course	Completed	07/28/2024	07/28/2024	97	⋮
Design Thinking for Innovation: Defi...	Course	Completed	07/28/2024	07/28/2024	90	⋮
Design Thinking for Innovation: Brai...	Course	Completed	07/28/2024	07/28/2024	80	⋮
Sustainability by NCS	Course - Lin...	Completed	07/28/2024	07/28/2024	100	⋮

Assignments

Activity ^

PMI PDU

NASBA CPE

Journeys

All activity

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TITLE	TYPE	STATUS	STARTED	COMPLETED	HIGH...	
SDGA002 Cities & Challenge of Sus...	Course - Lin...	Completed	07/22/2024	07/28/2024	97	⋮
SDG A001 Transforming Our World:...	Course - Lin...	Completed	07/21/2024	07/22/2024	92	⋮

Rows per page 10

11 - 12 of 12



Welcome back, Iskandar Sufri!

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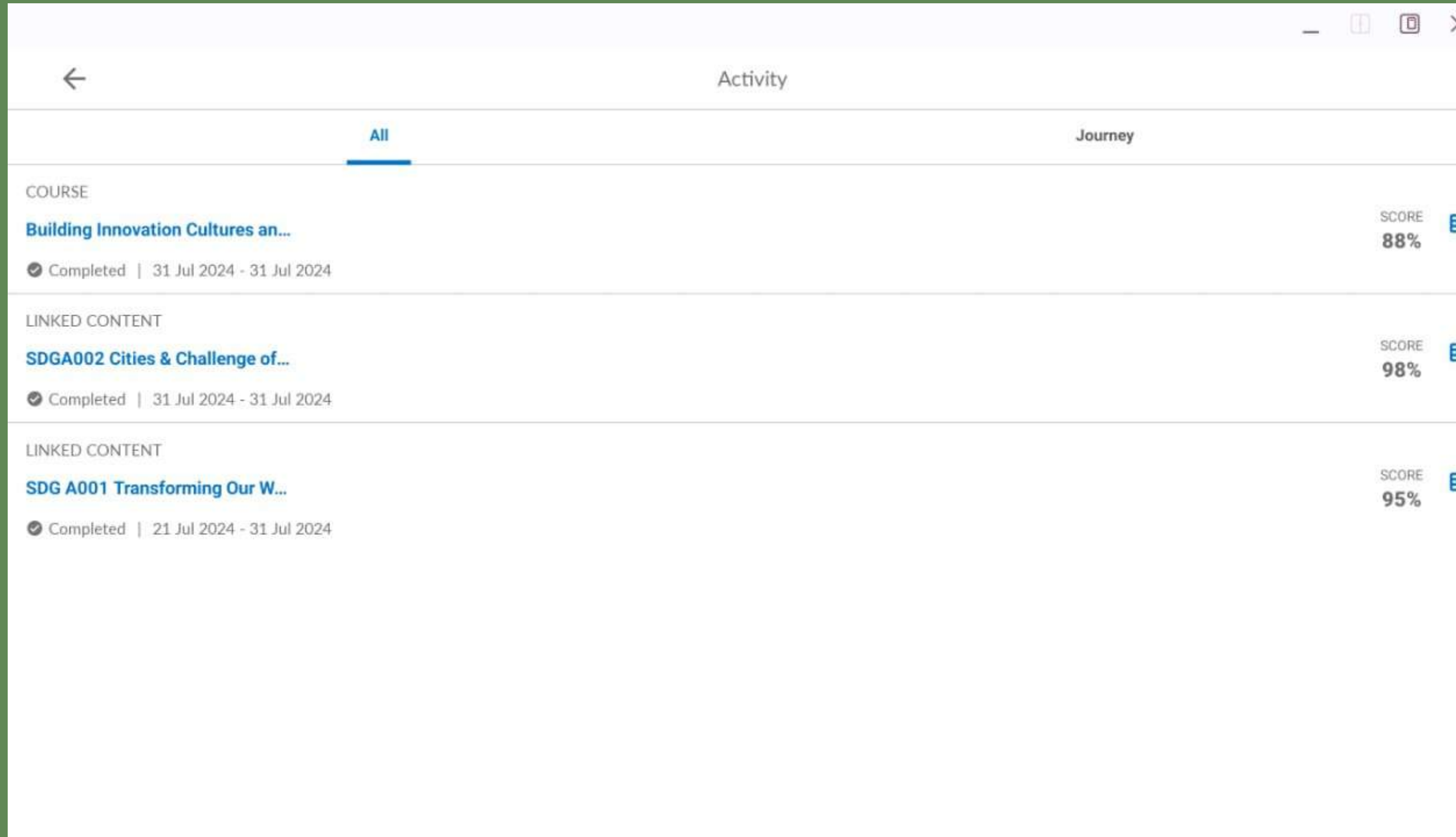
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TITLE ↕	TYPE ↕	STATUS ↕	STARTED ↕	COMPLETED ↕	HIGH... ↕	
Leadership Insights on Leading Inno...	Course	Completed	07/20/2024	07/31/2024		⋮
SDGA002 Cities & Challenge of Sus...	Course - Lin...	Started	07/17/2024		98	⋮
Verifying and Building on Creative I...	Course	Completed	07/31/2024	07/31/2024	83	⋮
Unleashing Personal and Team Crea...	Course	Completed	07/31/2024	07/31/2024	93	⋮
Design Thinking for Innovation: Stak...	Course	Completed	07/28/2024	07/31/2024	90	⋮
Design Thinking for Innovation: Prot...	Course	Completed	07/28/2024	07/28/2024	88	⋮
Developing a Team of Creative Gurus	Course	Completed	07/28/2024	07/28/2024	88	⋮
Design Thinking for Innovation: Defi...	Course	Completed	07/28/2024	07/28/2024	83	⋮
Sustainability by NCS	Course - Lin...	Completed	07/25/2024	07/28/2024	100	⋮
Building Innovation Cultures and Le...	Course	Completed	07/28/2024	07/28/2024	100	⋮
Design Thinking for Innovation: Brai...	Course	Completed	07/28/2024	07/28/2024	100	⋮
SDG A001 Transforming Our World:...	Course - Lin...	Completed	07/17/2024	07/19/2024	94	⋮

Nur Akashah Nadhirah Afifah binti Razali



The screenshot shows a web interface for an 'Activity' page. At the top, there is a navigation bar with a back arrow on the left and the title 'Activity' in the center. Below the navigation bar, there are two tabs: 'All' (which is selected and underlined) and 'Journey'. The main content area displays a list of activities, each with a category label, a title, a completion status, a date range, and a score. Each activity also has a small blue icon with a white 'E' on the right side.

Category	Activity Title	Status	Period	Score
COURSE	Building Innovation Cultures an...	Completed	31 Jul 2024 - 31 Jul 2024	88%
LINKED CONTENT	SDGA002 Cities & Challenge of...	Completed	31 Jul 2024 - 31 Jul 2024	98%
LINKED CONTENT	SDG A001 Transforming Our W...	Completed	21 Jul 2024 - 31 Jul 2024	95%