

LOW CARBON CITY IN KLANG VALLEY: CITY COUNCILS' PARTICIPATION

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ABSTRACT

Malaysia's goal to reduce the carbon emission by 45% by the year of 2030 was adopted when Malaysia making a pledge to COP-21, which required the utmost participation from the society and the city councils. This paper will explore the participation of city councils towards low carbon cities (LCC) from perception and execution dimensions. Klang Valley was chosen as the study area because of the high-density population and its role as the center of economic and technologies' growth. This research adopted qualitative approach by conducting in-depth interviews using semi-structured protocol with selected informants. Thematic analysis was conducted on the interview transcripts to identify the themes and sub-themes of the designated dimensions. Two themes emerged under the perception dimension namely understanding and responsibility while three themes surfaced under the execution dimension namely activities and program; engagement and collaboration; and awareness. This study indicated that the participation of city councils in Klang Valley to achieve the low carbon city goal is high.

Keywords: Low Carbon City; Society; City councils; Carbon emissions; Klang Valley

INTRODUCTION

Low carbon city (LCC) is defined as a city that is sustainably balanced between the quality of the environment and the economic growth by having a highly insignificant amount of carbon emission (Abubakar & Yakubu 2019). The main target of low carbon cities is to reduce the carbon emission in effort to reduce climate change which eventually will improve the wellbeing of environment. To achieve and sustain low carbon city, every stakeholder is required to participate in the agenda, actively and consistently (Hukil et al. 2020). Obviously, city councils as the main planner and implementer of low carbon city initiatives, are expected to understand the concept to allow constructive advocacy and governance.

The number of populations is escalating rapidly especially in urban areas is the driving force behind the increase of carbon emissions in Malaysia, as the rising of populations will exponentially increase everything in between (Nurizzatul et al. 2021). However, looking at the positive side, it is not impossible to achieve a low carbon city while having an upsurge in population if the actions taken and done right. Urban areas are the hotspots and center points of the countries' growth due to the tons of job vacancies, advanced facilities, center of economic growth as well as abroad and local investment. The increase in the population will substantially increase the energy demand, economical and transportation demand resulted in the increase of the percentage of carbon emission.

Inevitably, the occurrence of climate change will increase with the increase of carbon emission alongside the resurgence of natural disaster and diseases had made an impact on the

goals of achieving a low carbon city. Prolonged climate change related impact will lead to major disruptions in city and business operations that will eventually lower the financial sector, social and the physical impacts. Major disruptions caused by climate change such as floods, rainstorms, landslides and cyclones will have the government to invest and spend more money to reconstruct what was lost instead of spending it on creating a low carbon city. For example, Klang Valley had never experienced a bad flood since 1990, but the situation changed when areas encompassing the capital of Kuala Lumpur and Selangor began dealing with flash floods which are more than frequent now (Aziz 2022).

It is apparent to the world that the increase in the number of people migrating to the urban areas is number one challenge to create a low carbon city, which is why Klang Valley is opted to be area of study. Klang Valley is an urban conglomeration which resides by enormous number of populations. Besides being the major rising hotspot for new career opportunities, Klang Valley is also known to be the heart of Malaysia with Kuala Lumpur as its major city of attraction. Klang Valley covers five major areas which are Kuala Lumpur, Gombak, Hulu Langat, Klang and Petaling. The areas that are covered under Klang Valley were approximately 2,832.2 km in total distance and the estimated population that was recorded to be living in Klang Valley was roughly 8 million people in 2020. In order to achieve the low carbon city in Malaysia, participation from the society and the city councils are very crucial. Hence, this paper will be looking into the participation from city councils in Klang Valley. The objectives of this study are to explore the perception of city councils towards low carbon city agenda and to learn the execution of low carbon city initiatives by city councils.

METHODOLOGY

This study adopted qualitative approach to explore the research questions. In-depth interviews were conducted using semi-structured protocol to acquire elaborative and comprehensive information regarding to the participation of city councils in low carbon city agenda. Purposive sampling was used to choose the informants from a population that information or knowledge can be extracted from for research purposes (Bernard 2000). The selection criteria for the informants is have been working in city councils and known the area for more than 10 years. Two informants were selected representing two city councils namely Dewan Bandaraya Kuala Lumpur (DBKL) and Majlis Perbandaran Ampang Jaya (MPAJ). DBKL was chosen because it is already an established low carbon city in Klang Valley while Ampang Jaya was chosen due to its commendable efforts to be established as a low carbon city.

The interview with the informants were held face to face on 23rd December 2022 and 5th January 2023 at Menara Perbandaran Ampang Jaya, Ampang and Menara DBKL, Kuala Lumpur respectively. The informants participated in the interview session were listed in Table 1.

Table 1. Informants that were involved in the interview session.

Informants	Background
P1	Chief Officer of the DBKL Municipal Division Department representing Kuala Lumpur's Mayor
P2	Chief Officer of the Department of Green & Sustainable Urban Planning MPAJ, representing Ampang Jaya's Deputy Chairman

The semi structured protocol consisted of three categories; main questions, following questions and investigation questions. The main questions focused on the main issues of the study, while the following and investigation questions focused on the depth, detail and the

accuracy of the information. There are originally six main questions in the protocol but for this paper, only three questions will be discussed. Semi structured protocol allows flexibility and expansions of the questions and the answers depends on the needs of the researcher and the informants (Krueger & Casey 2009).

The informants were briefed before the interview, of the purpose and objectives of the study. During the interview, if the informants do not understand the questions, the researcher will facilitate the understanding by giving the following and the investigation questions for the informants to comprehend the concept of the main question. The informants are free to give facts and opinions that are relevant to the questions asked.

All interview sessions were recorded and verbatim transcribed, and thematic analysis was conducted on the transcripts to identify the themes and sub-themes of each dimension. The analysis includes comparing every theme in terms of similarities and differences, and create other themes or subthemes, if appropriate, that relates to each theme. The flow chart of the study is shown in Figure 1. The transcripts were submitted to the informants to check their accuracy and validity.

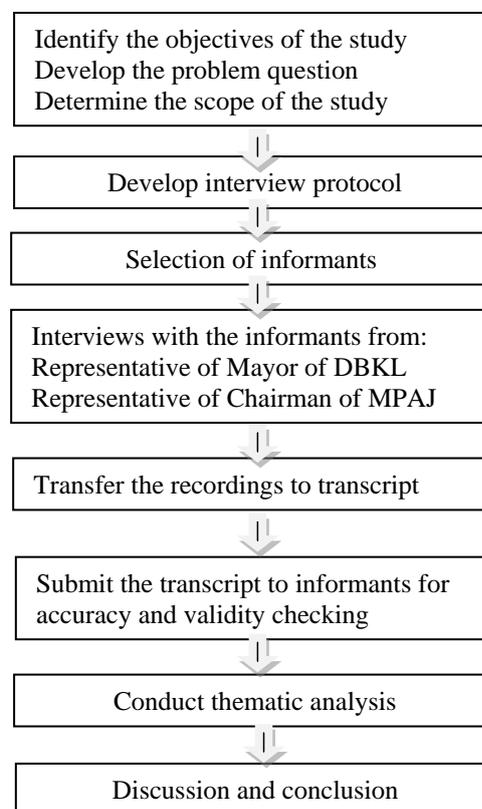


Figure 1. The flowchart of the study

RESULTS AND DISCUSSION

In this study, the participation of the city councils in low carbon city agenda was scoped into two dimensions; perception and execution. The findings for both dimensions will be discussed separately for better understanding.

Perception Dimension

Two themes emerged under the dimension of perception; understanding and responsibility (Figure 2).

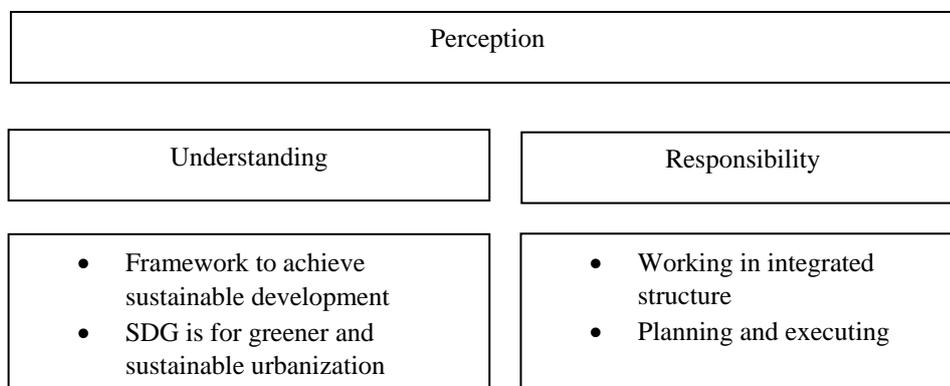


Figure 1. Themes and sub-themes of perception dimension.

Understanding

Sustainable development goals (SDGs) are the goals introduced by the United Nation (UN) that acts as a blueprint to bring more prosperity for the people and bring peace to the world and the environment. SDGs' call was taken by all 191 members in the UN and Malaysia is a part of it. As SDGs' goals were to bring prosperity and peace to the world, creating a low carbon city is a way to achieve this goal. In order to create a sustainable city, low carbon emission should be realized and vice versa. Hence, it is important for the cities' authorities to understand the concept of SDGs in general and low carbon city in specific.

According to P1, SDG is the framework to achieve sustainable city development for all.

“Sustainable development goal is the framework to achieve sustainable city development for all. If in our structure plan, we changed, if previously world class city, now we have aligned with SDGs objectives, so now we are now, KL city for all”. [P1]

P1 also mentioned that DBKL has developed and introduced Kuala Lumpur SDG roadmap which explains the objectives of the SDGs and specific targets for Kuala Lumpur. There are 169 targets under the 17 goals in SDGs but only relevant targets are considered and chosen in Kuala Lumpur SDG Roadmap while a few more will continuously be revised and kept in view to see if it will be relevant in the future.

“This this this, we want to inform the SDGs implementation on DBKL now. But for DBKL, we don't take all the 169 targets. in DBKL, we have done kl SDG roadmap in which from the 169 targets, only which suitable that we'll take and we do the analysis. So, if you go to other city councils also it will not be the same for the local. If SDG have marine, we do not have marine. If they have the gender, we do not have the gender”. [P1]

Describing DBKL low carbon city initiatives, P1 said...

“...so here you can see the low carbon, we a part of it and this is the low carbon society's plan, we have done it in 2018 and now we are in execution step”. [P1]

P1 also mentioned that DBKL has already planned 240 programs under SDG that correlates with the low carbon aspects which are still on going. The programs planned and done by DBKL covering the aspects of SDG and low carbon city were exhibited in the Kuala Lumpur SDG Centre and has been recognised internationally and become the first in Asia Pacific.

“Mostly, we have 240 programs here, 240 programs ni, haaa, were looked back, the execution status is mostly had been done lah and now we are implementing it continuously lah until now...” [P1]

Moving on to P2, he perceived SDG as green and sustainable development which includes low carbon and safe cities.

“...But when we talk about SDG, in Ampang ni, its under green and sustainable development. So in that, it includes many aspects lah, such as low carbon, safe city, project-project physical and project-project that relates to safe city. And if you ever heard of cptag, that about pedestrians, oku, all that is project safe city. And the latest SDG program lah...” [P2]

P2 continues to explain SDG programs executed by MPAJ.

“If we take a look for the SDG program, under planning unit, we already have 4 projects lah that relates to SDG lah. One is at the Ampang point. We call it back lane mural, mural backlane...we have 17 SGD, each mural we introduce la the SDG”. [P2]

“Pangsapuri Cemara, we do project, not big one but we implement the SDG elements. Example the information for the SDG-SDG, what is SDG and we deal with JNB to focus more on SDG lah”. [P2]

Apart from awareness program, MPAJ also conduct safety and health programs under SDG initiatives.

“Then we have uptown Lorong Ampang Mampan, we call it ULAM lah. Haa so if we look there, we have implement the safe city’s aspect lah like lighting, lights. Actually we do the project is because we don’t want more crime to happen lah, so we do program and activities, lighting to liven up the place relates to SDG. That’s, that’s purely SDGs program lah”. [P2]

“Then we have one project under planning unit, under my unit too, we call it healthy city. That we focus on parks lah. What we implement there is we upgrade the pedestrian walkaways lah, implement the oku aspects and safety elements lah, like safety board, board safe city, and if see that board which they write how many calories we burnt...that one is at Taman Tasik Tambahan’. [P2]

These findings indicate that their understandings of SDG are in line with the concept of SDG and both institutions have aligned their directions towards SDG goals. In term of initiatives towards low carbon city, DBKL has executed many programs directly related to the goal. Compare to DBKL, MPAJ is still infant in regards to the low carbon city achievement but is now progressing tremendously. Although SDG programs in Ampang are currently focused on communities’ safety and health, the initiatives carried out including upgrading the lights, living up the dead allies into uptown and upgrading the pedestrian walkaways, indirectly relates to low carbon initiatives. Communities will not hesitate to walk as they are assured of their safety and therefore will reduce the use of motor vehicles.

Malaysia has pledged to COP-15, COP-21, Montreal Protocol and other agreements that were introduced by the United Nation as explained by Ministry of Energy, Green Technology and Water (2011), therefore actions need to be executed to put our words into reality. Hence, these words were taken seriously by both informants by doing programs and taking initiatives towards low carbon city directly and indirectly.

Responsibility

The role of city council as the decision maker and planner shoulders them with the responsibility to ensure that the community is well informed on what to do in order to achieve a low carbon city. In other words, they have to actively involve and participate in every phase of every initiative which place this dimension within the scope of participation.

P1 explains the structure of governance in the implementation of low carbon initiatives in DBKL. P1 also highlighted on the integration of units and programs to execute low carbon as well as SDG initiatives as they are interrelated.

“...5 units actually cover all the initiative, even though she’s doing SDG but in her program still have low carbon’s impact. Each other are related, so you can use program-program. That’s what we try to integrate, so when we say about SDG it’s not SDG je, because SDG can contribute to low carbon’s initiative...”. [P1]

“So sustainable ni, her unit, Hajar’s unit more to public engagement, still have in your part that they will conduct SDG programs that contributes to low carbon. So Hajar’s program will relate to which SDG, not just conducting program simply without relating to any SDG. Haa, now every city council also have make programs that relate to SDG”. [P1]

The integrations also take place in other departments as well which coordinated by the planning department.

“...right now, for carbon-carbon ni, its not 100% done by planner dah, we also include engineer, healthcare people...and if following to the meeting the other day, we already need to have a special unit to deal with this issue lah...’. [P1]

“So, all units must take part lah in this SDG program. So if we see, in each department to where it relates to the SDG, what is the unit’s role so they have integrated that and you have to take care of that part of the SDG. We have 25 units so each department will align with at least 1 SDG”. [P1]

“For low carbon society, the execution in which they include all the department. This is not just planning but it includes to all departments. So they have their own department, committee and we plan, planning department only do the coordination lah, and we have a part in economy department and environment.” [P1]

Similar to DBKL, MPAJ also executed SDG initiatives in integrated manner among various units.

“...for SDG ni, we in MPAJ ni, the organisational chart is wide lah, include the unit KM, unit planning development facilities, unit investment and unit enforcement”. [P2]

Another sub-theme of responsibility is planning and execution of the plan. According to P1, the inclusion of low carbon city in SDG is quite recent and the concept is new to them.

“...but with what we have now, I get a picture la to do next year, maybe more competition la kan because somehow Malaysian loves competition...and low carbon this pun is a new thing too...low carbon and safe city, safe city first is it? So it’s kind a new to everyone here, SDG even more newer”. [P1]

DBKL however, observed low carbon initiatives implemented by other city councils to get some ideas how things should be done.

“If you want to take a look for planting and trees, go to Sepang, Sepang got many trees and plants. They have their people to calculate how many carbon reduce from each trees. Ha they are good lah. DBKL ni more to neutral carbon dah, neutral carbon ni its neutral la not zero. Melaka is very good la in low carbon, they already have a company set up especially lah for low carbon. Only do low carbon things la, won’t do anything else lah kiranya...” [P1]

MPAJ on the other hands, is considering whether to upscale current programs or execute similar programs in other places.

“In our city council’s level, SDG is still not up yet lah, we are still crawling lah, so far we have 4 now so later on we see lah how we promote ke or we do the same at different places ke...so we can say that Pangsapuri Cemara tu as benchmark la like that” [P2]

Both informants acknowledge the responsibility of the city councils to plan and execute the activities and programs towards low carbon city. They are responsible in studying and observing the potentials and challenges in their city to strategize the implementation of low carbon city initiatives. Both of the informants took their responsibilities well in handling and executing the low carbon city aspects in a team oriented setting. Both of them focused on working in groups and units as it is more efficient. Benchmarking with other city council like Melaka is also a good move to accelerate the progress to create low carbon city.

Malaysia’s government acts as the highest strata in the society, in the implementation of zero-carbon footprint lifestyle. In January 2010, Malaysia had successfully phased-out the consumption of chlorofluorocarbon (CFC), Halon and CTC gasses and is now currently working on phasing out the hydro chloro fluoro carbon (HCFC) consumptions by 2030. Under the Montreal Protocol that was adopted in Malaysia, Malaysia is targeting to completely inhibit the installation of HCFC products by 2025 and to ban the total import of HCFC in 2040. The Montreal Protocol adapted in Malaysia was a success when Malaysia had a decline in the number of imports and consumptions of CFC from 3442 metric tons in 1995 to 662 metric tons in 2005 (KeTTHA 2011). Undoubtedly, local councils contributed significantly to these successes by fulfilling their responsibilities through implementing what they planned to the best extent. As officials responsible for the wellbeing of the cities in Malaysia, they took the call from the government that pledged to create a country that is sustainable to live in.

Executions

The second dimension of participation this study is the executions of low carbon initiatives by the city councils in Klang Valley. Three themes emerged under this dimension namely the activities and programs, engagement and collaborations, and awareness. The summary for the themes and sub-themes of executions dimension by the city councils is shown in Figure 3.

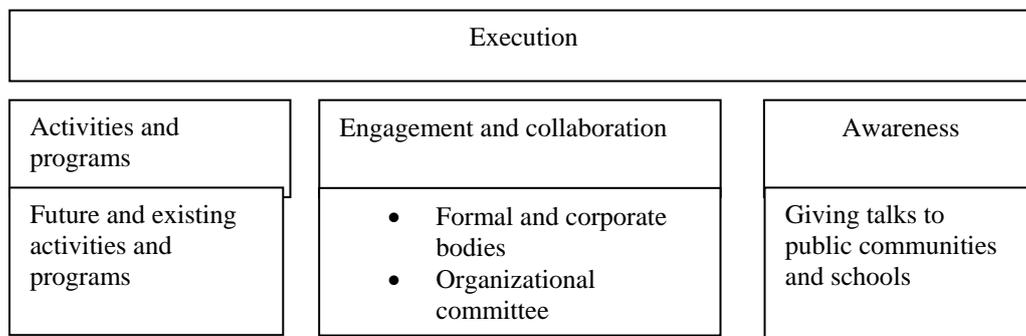


Figure 2. Summary of executions by the city councils’ dimension, themes and the related subthemes. Activities and Programs

The participations of city councils in the low carbon city initiatives can be seen from current and future related programs. The idea to initiate urban farming is one clever move by DBKL. Urban farming that they have created draws public attention, and the public tends to follow along with such newly implemented systems. Even if the public's intention is more towards gaining more income, but indirectly, they are still implementing the low carbon lifestyle.

"...first we have urban farming, ha we have one here in DBKL building, later before you go home, we can take you there to sightseeing lah like that. Urban farming ni good actually, other than help in creating low carbon city, we can generate income too kan..." [P1]

Besides farming, DBKL also planned to plant more trees as part of greenery movement.

"...next we have program planting 1 million trees, I think this program all city councils do too because Malaysia the other day said we will plant 1 million trees program, so among us the city councils we divide la each city councils plant how many trees. But we now we have almost 30 thousand trees or so la like that..." [P1]

P1 stated that they are building more greenery walkaway that connects one park to another to encourage people to walk.

"...then we have more green network, more green network ni is like more greenery walkaway in Kuala Lumpur area lah, where along the walkaway, no vehicles like cars, motors, busses ke that releases carbon can enter the area. This initiative indirectly is encouraging society to walk, riding bicycles or using electric scooters. Other than creating low carbon city, we can live healthier too kan...the greenery walkaways too are connecting one recreational park to another with more greenery landscape added. A bit shady la if people want to walk around, so its not that hot lah,..." [P1]

"Then we have the green adaptives city and mobility like GoKL busses, Kuala Lumpur solar panels... these solar panels were installed at AEON Wangsa Maju and Botanical Garden Kuala Lumpur as starting points. This is more of the base projects lah, all departments are doing their job lah kan..." [P1]

To minimize the number of motorised vehicles, the society needs to start using the public transports more often. DBKL are taking proactive steps towards making Kuala Lumpur more convenient to the public mobility on a daily basis.

"...for mobility pula, we introduced My50 and MyRapidKL passes initially only to DBKL staffs, but we already open it to the public. Yelah, we don't want lah only DBKL staffs je that using public transport kan, ha so we do that to encourage society to use public transport more often too... then, if you go around, walk around the city ni, you will see Free GoKL busses along Kuala Lumpur city every day. If previously the busses are purple kan? Notice tak notice tak? Haaa, now it changed to green la because the busses pun already upgraded to electric busses, so green tu to show its greener techs la like that..." [P1]

DBKL also exercising KL car-free-mornings every Sunday to reduce the carbon emissions that came from conventional vehicles which Susskind et al. (2020), claimed to be the major contributor of carbon emissions in urban areas.

"...then we have tu, car free morning tu, every Sunday from 6am to 10am. Ha this one, this one really cars cannot come in, usually its always packed lah with people walking that morning..." [P1]

Another interesting initiative executed by DBKL is exchange recyclable waste for money.

“...when it comes to the community, we have program umm what that, alah forgot already lah the program tu...but its basically where they exchange their waste for money lah. Ha, they got to exchange any waste for money lah...but not la the general food waste tu, the recyclable ones lah...they can change either for basic needs like rice ke like that or exchange with monthly rent. PPR kan mostly are the people who cannot afford, so we give them this alternatives lah, other than keeping their home, they can involve in low carbon too kan...so it's a win-win la for us. Never had ever us DBKL force them to move out yet lah, so we do things like this lah. To ease their burden and they supporting us...” [P1]

MPAJ has also organized low carbon elements programs in Ampang Jaya.

“...our programs, our projects ni, these projects centralized the low carbon elements such as green neighbourhoods elements, ewaste collection, recycling and these elements are adapted to every projects that will be developed in Ampang city like I've mentioned before the JNB Pangsapuri Seri Cemara tu, ha that one lah. So we do it like that. We implement all these aspects and programs there...” [P2]

Other than that, MPAJ also took part in the LCCF contest last year and will be participating again in the upcoming years as this contest has been proven to be one of the driven forces for a city to start their path in implementing and achieving low carbon city.

“...then there are programs and activities planned and done every year for low carbon city, we actually participate more in contest like the LCCF contest tu.. In 2022, Ampang participated in LCCF contest and to participate more in 2030. Previous years, only Ampang je that participate, so next year we thought we want to ask other pula to join this contest and next year, there will be 3 more contestants that will participate in this LCCF contest with us. Next year, this contest will be participated by KPJ Ampang and 2 schools in Ampang. These two can be benchmark la too for other hospitals and schools...” [P2]

P2 informed on how their activities and programs are centralized by implementing the low carbon city aspects by area. They started at their main office building and when that received a positive feedback, they will start to install the greener technologies elsewhere.

“...then our newest program is the reverse vending machine program where the people can recycle the plastic bottles into the vending machine for exchange of money. This project is still new and we started first here in MPAJ building. We start first here because one the machine is quite expensive and then...we have to start from city councils...only then people will follow. So next maybe we'll put it in the mall pula if this one succeed to gain attention”. [P2]

“...and other than that, we also installed E.V chargers for E.V cars. As for now we have already 3 E.V chargers for E.V cars. One here in the MPAJ building, one is at Masjid Al-Amin and Star Arena Ampang. KPJ Ampang also got if I'm not mistaken but that is with private bodies la not with us...” [P2]

Similar to DBKL, MPAJ also has its own greenery program.

“Another program is the greenery program where we are planting more trees, so now...we have...how many dah? I'm not so sure how many trees we already have but it's a lot la...” [P2]

MPAJ strategy of starting the initiatives at their building is crucial as they want the public to appreciate the alternatives given by the city councils. Hence, they would want to take their time before introducing high greener technologies to the public. Participating in contest related to low carbon city is also a clever move. Taking a closer example of a town in Klang Valley, Gamuda Cove was recently nominated and won the 5-diamond recognition at

the Low Carbon City 2030 Challenge by having a town that implements a comprehensive framework of low carbon city (Kaur 2022).

In regards to participation, the activities and programs conducted by both city councils are very promising on achieving low carbon city. The executions from both city councils are strong and consistent by involving not just their committee but the public too. Both highlight how they are upgrading public facilities they want the public to use more often, as Susskind et al. (2020) mentioned in her paper, the city councils should also put more focus on developing sustainable technology using renewable resources. This motion was diligently adopted by both city councils.

The effort to planting more trees by both city councils helps tremendously in achieving low carbon city and in developing a sustainable city. It is known that plants are the main factor in producing cleaner air and how it plays a major part in balancing the ecosystem of the earth, and it was said that plants and trees had been proven to improve and shift a city towards a low carbon city (Sereenochai et al. 2020). Planting more plants would benefit not just reducing carbon dioxide in the air, but also strengthening the ecosystem and biodiversity, providing more crop yields and increasing employment rate to the poor and to indigenous communities (El-Ashry 2009).

Engagements and collaborations

The way both informants engaged and collaborated with other participants in the society are very much different. While P1 approached the society by engaging and collaborating with the formal and the corporate bodies, P2 chose to stay close to the communities.

“...So basically how we engage with people and to attract people’s participation is by stakeholders’ engagements from collaboration aspect by sharing information and awareness la. Like for an example, right now pun we are collaborating with big companies like Petronas, CIMB, TNB and they will contribute their data on how many carbon emissions had they reduced...” [P1]

Besides information sharing, DBKL also engaged with collaborators for training on the low carbon implementation.

“We also collaborate with public educational institutions like public universities and corporate bodies in training and giving talks on how to implement on low carbon city... ha we call professional from outside tau to give training ni...All we have to do is just to utilise what they have taught us je.. mainly trainers ni dari Japan lah, sebab Japan kan good in sustainable ni...” [P1]

DBKL also collaborates with established international bodies to get professional training.

“...and we also speak out on what efforts had DBKL made towards low carbon city to attract more collaboration with overseas agencies...like this la we manage to get free professional training tu. We expose to the world our achievements, they will be wow with that and they will think yang we have the potential kan. So they give us the training...Making DBKL as a showcase to attract more people to know more about low carbon city”. [P1]

Apart from engagement with professional bodies, DBKL also engaged with the communities through appropriate channel.

“Then if engage with the society pulak, we engage with the society such as allowing the community in PPR Lembah Pantai to develop an urban farming, they must send their proposals that will checklist the implementation of low carbon city in order to develop their urban farming...” [P1]

MPAJ on the other hands, opt for different approach to engage with the communities.

“...we pulak we attract the participation through committee in the low carbon city aspect. Like in MPAJ, we have many departments and units kan, so for us...each department in MPAJ must send one representative that will be together giving inputs and ideas for low carbon city. Representative ni pulak will be joining in a meeting...the meeting will be held 3 times per year, where at the beginning of the year will be discussing about the ideas, the middle of the year will be discussing on the progress and at the end of the year will be the report. We, MPAJ ni, MPAJ as the designer and the coordinator je. So how we design the programs is through the committee....” [P2]

It is evident that both city councils have different approaches to escalate the participation of society. One is through engagements and collaborations and the other one is through their committee setting. Engagements and collaborations with big name companies such as Petronas, CIMB and TNB will create good impression as their foundation is strong. Engaging and collaborating with big names as such also allow Malaysia to be more presentable at an international level. This does not mean that small corporate companies or start-up companies ineligible to participate as their participation are favoured by more collaborators from abroad, this in turn will create more engagement.

As for involving the communities in the committee, this is a brilliant strategic approach taken by the city councils to increase participation. Unlike big companies, public communities are directly involved in the programs handled by city councils in informal setting and how to engage with them could be different. It could be more flexible and not too rigid in the participation towards a low carbon city. Attracting more engagement through public communities will take smaller steps but with these smaller steps combined and consistently being executed, the impact will be big.

Malaysia pledged to participate by reducing the amount of carbon emissions by 40% in the next 10 years' time in COP-15. However, Malaysia agreed to ratify this accord if they receive financial aid and the transfer of greener technologies from the developed countries. Through collaboration of Malaysia with Carbon Trust, we managed to obtain funding in order to step up our plans towards achieving low carbon city. Other than that, Ministry of Energy and Science, Technology, Environment and Climate Change and Sustainable Energy Development Authority took the initiatives to facilitate and promote the low carbon city among Malaysia with cities like Putrajaya, Cyberjaya, Iskandar Malaysia, Petaling Jaya and Hang Tuah Jaya that became the pioneers to the funded programme (KeTTHA, 2011). This shows that engagements and collaborations are important in attracting the participation from society.

Awareness

Although DBKL and MPAJ have already engaged with the communities in very structured way, both informants still regard awareness as important to encourage communities to participate in low carbon initiatives.

“...awareness ni we spread through campaign and spreading awareness by giving talks to the society and the schools..we hired professional kan, so they will teach us first lah how to give the talks, then we will spread it to the public lah.” [P1]

“...if you walk in front of this building pun, you'll see sign-sign no smoking kan, ha that's relate to SDG too. That's a part of the awareness lah...” [P1]

MPAJ also agree on the importance of awareness to gain more participation from the communities.

“...spreading the awareness to the schools by giving talks and to attract the participation of the community in MPAJ.” [P2]

Spreading awareness is one of the most important steps in achieving low carbon city or in fact in achieving any advocate. This is because without awareness, people will not know of the content and the objective to one programs. Hence, a good and strong execution needs to be done to spread the awareness so it will stick and be remembered by everyone.

For the public to start implementing the lifestyle of low carbon city, the city councils and the local authorities need to start implementing it first. It's like the English proverb, where the apple doesn't fall far from tree and it is the same with this concept. The city councils need to start taking initiative first so that the public could follow along. By implementing what was planned by the city councils themselves, it proves that the city councils and the local authorities are walking the walk and are not just all talk by not only spreading awareness, but also carrying out their plans (Sreenochai et al. 2020).

Giving talks to the schools and to students is a path engraved positively by the city councils. The students will be the next generation that will lead the nation, hence, their knowledge in low carbon city and sustainability needs to start in schools. This is because they will serve as the next powerful generation that can further extend the low carbon city behaviour and sustainability in the long run (Sreenochai et al. 2020).

CONCLUSION

In summary, both informants understand the concept of sustainability and low carbon city. Both city councils also aware of their responsibilities to plan and execute activities and programs to achieve low carbon city goal in their respective cities which they have accomplished through integrated structure of governance. The programs and activities organized by both city councils truly embed the spirit of sustainable development and low carbon city. It is also evident that engagement and collaboration carried out by both city councils have every potential to escalate participations from various stakeholders. At the same time, both city councils continue to spread awareness on sustainable development and low carbon to public communities especially students. This move is vital as public communities are the largest stakeholder in sustainable development agenda. In conclusion, this study indicated that in principle, the participation of city councils in Klang Valley, in low carbon city initiatives from dimension of perceptions and executions are high.

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