

CONTENT

Page

1. Safe City Programme: Are we on the right path to reduce crime? <i>By: Kamalruddin bin Shamsudin</i>	1
2. The Contribution Of <i>Fiqh al-Jinayat</i> (Islamic Criminal Law) To The Planning Of A Safe City. <i>By: Azila Ahmad Sarkawi, Ahmad Basri Ibrahim & Alias Abdullah</i>	19
3. Urban Crime And Safe Neighbourhood: Community Perspectives. <i>By: Khairiah Talha</i>	39
4. Towards A Safe Place For Children In Today's Residential Neighbourhoods. <i>By: Ali A. Alraouf</i>	57
5. Role Of Land Use Planning In Improving Public Health: Way Forward For Malaysia. <i>By: Ainul Jaria Maidin</i>	75
6. Energy Consumption And Carbon Dioxide Emission Considerations In The Urban Planning Process In Malaysia <i>By: Wee Kean Fong, Hiroshi Matsumoto, Chin Siong Ho & Yu Fat Lun</i>	99
Some issues on crime in the Malaysian's newspapers	129

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MESSAGE FROM THE PRESIDENT

Dear Readers,

Safety of our cities is now a global concern as more than half of the world's population is now urban dwellers. Crime in cities is also increasing and even if we have the best police force in the country, it is still not possible for one organization to address the many factors that contribute towards crime which has influence perceptions of safety in our city.



Crime in cities dictates on choice of where to live, work, shop and play and in some cities it has brought about segregation of communities, where wealthier communities that can afford security lives in gated and guarded neighbourhood.

A Safe City is a sustainable city, where communities can live in a more inclusive and secure environment. Root causes of crime is linked to and integrated with other issues like economics, health, housing, and the interaction of different social groups. Addressing safety issues will make cities more attractive and livable.

That is why the Malaysian Institute of Planners decided to focus on the issue of Safe City in this journal's publication. The Institute strongly feels that town planners have a role to play in making our urban spaces safer. Several articles in this journal explore the various issues that can contribute towards a Safe City and I would like to thank all the writers and editors for this special publication.

Thank you

Norliza Bt. Hashim

PRESIDENT

(2007-2009)



SAFE CITY PROGRAMME: ARE WE ON THE RIGHT PATH TO REDUCE CRIME?¹

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Abstract

Generally all types of property crime showed increase in occurrences; snatch theft showed a positive decline from 2004 to 2006 and stabilized in 2007. The safe city programme originated with the aim of putting across measures or steps that local authorities (PBTs) could implement immediately to reduce crime occurrences. Effectiveness of CCTV showed mixed result. Lessons from accredited safe city elsewhere (in particular Melbourne) suggest possible future directions for the safe city programme in Malaysia.

Keywords: Safe city, property crime, media, CCTV, crime severity classification, snatch theft, crime mapping, evidence-based planning, CPTED

INTRODUCTION

This article gives an overview of the safe city programme under the purview of the Ministry of Housing and Local Government (MHLG). Extent of local authorities involvement and their contribution to crime reduction (or otherwise) are discussed. More importantly are these efforts contributing to a safer city. In this regard I would like to share some ideas based on my involvement overseeing the programme and a recent visit to Melbourne (rated the most safest city in the southern hemisphere by WHO in 2000 and most livable city in the world in 2003 and 2004 by Economist Intelligent Unit) and to Adelaide. Readers of course will want to know how this programme will affect them, be they planners, architects, developers, local authorities' officers, the police and various segment of the public.

¹ This is a revised version of a paper presented at the World Habitat Day, Kuala Lumpur (22nd November 2007) organised by MHLG, EAROPH and UN-HABITAT

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SOME RECENT MEDIA SPLASH

If you have missed on some happenings in the media lately, the New Straits Times (dated 9th January 2008) headlined “Crime Rate Up 13.4%”³. It further recalled that the cabinet in 2004 had decided for more CCTVs to be installed at public buildings and public places; and that the MHLG assigned to the task appeared to have run into problems. The latter statement no doubt puts the ministry in a spot. Further the Prime Minister said that from now onwards the police will decide where CCTV to be installed (their coverage) and commercial buildings and complexes will be required to install the CCTV at their own cost; failing which appropriate action will be taken by the police against non-compliance. [probably revoking their licence]

After the cabinet meeting a day later, the MHLG’s Minister, Y.B. Dato’ Seri Ong Ka Ting said that the Cabinet had in the morning instructed his ministry to direct all local authorities to install CCTV based on the locations provided by the police. [nothing about that statement that the task appeared to have run into problems]. Prior to this announcement, the Ministry, in early December 2007, had secured approval from Cabinet an allocation of about RM75 million for the remaining three years in the Ninth Malaysia Plan (2008, 2009 and 2010) based on a paper prepared by the FDTCP, but only after the visit by the Prime Minister to Bukit Aman, and the said cabinet meeting, was this amount mentioned to the media. In fact, according to the safe city programme (MHLG, 2004) CCTV must be installed with the police and public involvement and feedback. I most certainly hope we don’t forget the public involvement and that the local authority does not interpret the Prime Minister’s directive in a robotic manner. Directives from the National Council for Local Government have spelled this out in 2007 – to include the public involvement as well.

The ensuing days saw The STAR newspaper⁴ giving extensive coverage on safe city issues and CCTV, and I was quoted extensively based on a paper presented at a recent seminar in Kuala Lumpur⁵. I will clarify certain points where necessary.

Someone from a government agency called me up recently, to ask whether we could allow 5.4 MHz bandwidth for CCTV installation. He was responding to a

³ The spike in crime statistics was partly attributed to the inclusion of five new categories i.e. criminal intimidation, outraging modesty, causing hurt, extortion and rioting. NST page 2, 9th January 2008.

⁴ INSIGHT, STARMAG, SUNDAY 13 JANUARY 2008

⁵ World Habitat Day, Kuala Lumpur (22nd November 2007) organised by MHLG, EAROPH and UN-HABITAT.

query by a private firm, reportedly engaged by the State government or local authority, to install CCTV in the State. I responded that they have to comply with the CCTV guideline already endorsed by the National Council for Local Council which amongst others had made recommendations on the international specification of the public safety system bandwidth of 4.9 GHz for uninterrupted usage and stability of video recording and image quality, and a number of other technical specification required by the police etc. It is feared that the State's good intention of installing many CCTVs may be going ahead without proper advise from the MHLG –and we will face the same issue of CCTVs not performing as it should because of non-compliance, and this time on a larger scale and substantially greater cost to be involved to make right.

BACKGROUND TO THE SAFE CITY PROGRAM AND HOW THE MEASURES WERE DEVELOPED

Crime occurrences received wide coverage in the media in 2003 and early 2004, in particular where the victims were traumatized or where death occurred. The MHLG was directed by Cabinet to look into this – thereafter establishing the safe city program in August 2004⁶.

A couple of preliminary conceptual papers were discussed at the Ministry level and these didn't reflect closely what the Ministry had in mind. These early drafts were largely planning- focused and not tailored to immediate actions that the local authorities could implement. They were abstract ideas needing translation, too large a coverage on various safety issues – physical, social and crime related etc. The secretary general asked “How may crime occurrences can be reduced through local authority action?” – that was the object of the exercise. [and I should add any evaluation of this programme must keep this in mind by not incorporating a wider generic safe city evaluation framework which the Ministry never had in mind in the first place]

⁶ Readers can go through all the 23 measures from the safe city programme at www.townplan.gov.my. Illustration of the 23 measures can be downloaded (English and the National Language version is available).

Going back to the 'drawing board', planners came out with 23 steps for crime prevention and so it was⁷. These 23 steps or measures were not generated from thin air. Planners, despite having wide exposure in planning duties, went to the ground, met various stakeholders (police, NGOs, resident associations, criminologist and the Malaysian Crime Prevention Foundation), visited crime locations; and in the process got chided as well (the police think about crime 24 hours, planners how much?) and many more useful tips (indeed planners were traversing a 'closely guarded' territory to some and a turf encroachment to others). But planners persisted because we have moved beyond a 'blue print model, multi-disciplinary model, and 'inter-disciplinary model' to 'a trans-disciplinary model'⁸. In short, planners went beyond their turf, and moved into the heart of the matter (could be read 'hard' matter) and exchanged notes emanating from the weaknesses in the 'system' of the government machinery where crime prevention was concerned. The exercise was inductive, consultative and a learning process. But it was not exhaustive given the fast track nature of the exercise. Thus, by August 2004, the MHLG's Minister briefed the Cabinet on the 23 steps of crime prevention to be implemented by 38 municipalities and cities in Peninsular Malaysia⁹.

The initial focus on crime also required clarification, as it was unlikely that the Ministry would handle various crime dimensions. Planners at the FDTCP narrowed the scope to property crime i.e. 1) burglary (commonly known as house break-ins); 2) car theft; 3) motorcycle theft; 4) van, lorry, and heavy machinery theft; 5) snatch theft; and 6) other thefts. Of the six, the last one (other thefts, especially within office building and buses, have not been given attention). Also, the program steered away from serious crimes (a police domain). Although, from property crimes, serious crimes may arise, for example rape cases and murders arising from car thefts (where the victim is also involved) or death resulting from snatch theft.

⁷ When the concept and safe city measures were developed, the ministry had earlier received endorsement from the National Council for Local Government on its proposed "Measures To Improve Local Authority Delivery Service". In it were 64 steps (64 *langkah-langkah*) required of local authority to improve their services to the public. The safe city program drafted by the FDTCP was directed to have a similar format, thus the wording of 'steps' or 'measures' had been used. There was no lengthy explanation only basic clarification of measures or action required of local authorities.

⁸ Trans-disciplinary model can be generally to mean crossing disciplinary and cultural boundaries requiring sound knowledge of one's own discipline (especially its limitations), open-mindedness, great patience, and sincere effort on all sides.

⁹ Cities in Sarawak and Sabah despite not under the purview of MHLG were also interested in the programme and received briefing on the programme.

HOW WERE THE MEASURES DERIVED?

The measures incorporated were derived from various local and international sources. From the Malaysian Crime Prevention Foundation¹⁰ (MCPF) and resident-associated measures, like the importance of lighting-up backlanes and five foot ways, the need to separate pedestrian from motor vehicular lanes, education on crime prevention and organized resident involvement, and the use of CCTV etc; from the police the experience of CCTV usage and operation, site requirement for the police bit, crime prevention education; from criminologists, the concern of public surveillance and target hardening; from local authorities, their experience of motorcycle locking devices etc; from planners, urban designers and architects – Crime Prevention Through Environmental Design (CPTED); from Sydney, the emergency button and from Adelaide, the safety mirrors and various CPTED concepts (for example setting-up small business activities along potential high risk pedestrian routes to provide an eye or natural surveillance on the area). The Deputy Minister MHLG (Y.B. Dato' Robert Lau) too came out with ideas of making sure public places and private property were well-kept, and that public places and parks had proper maintenance and security services. Visits to various crime sites, talking with various stakeholders concerned over public safety and their experience and success level (and failures), and provided additional treatment over the measures in regards to how it could be done according to local authority's requirements.

It is worth stressing that an over-riding aim was that these measures must be easily implemented by the local authority; thus except for CCTV (which only a few PBT could install), services of security personals and certain planning guidelines, most of the measures can be implemented with minimal cost or already were part of the function of local authorities (I repeat, part of the local authority function). To make it easier for local authorities to implement these steps, an illustrative booklet on crime prevention was published by FDTCP and distributed to all local authorities and stakeholders. To-date more than 10,000 copies have been distributed.

TEACH-IN AND SEMINARS

Numerous teach-ins and workshops were conducted involving the police, PBT staff; international expert in CPTED (from Australia) and seminars were

¹⁰ MCPF had earlier initiated the safe city initiatives in 1997 with Bangsar as one of their early experience. This was followed by other programmes.

conducted at various locations in the country¹¹. Consequently the safe city booklet was amended a number of times basing on new experience (within a two year period) and recently a booklet on the revised specifications for CCTV was published based on a joint committee of the MHLG and the Royal Malaysian Police with input from various ministries, local authorities and CCTV experts.¹²

IMPLEMENTATION STATUS 2004-2007

Since its inception in 2004, a total of 5 reporting periods were made by the secretariat.¹³ The following summarised the implementation status by 38 local authorities in Peninsular Malaysia.¹⁴

Table 1: Progress of Implementation by PBT (2005-2007)

Period	More than 50% measures implemented:
January – December 2005	18 PBT with average 50%
January – March 2006	33 PBT with average 67%
April – August 2006	35 PBT with average 70%
September – December 2006	37 PBT with average 73%
January – April 2007	38 PBT with average 78%

Source: Based on various PBT reporting to the secretariat between January 2005-April 2007

The 50% minimum implementation target was set by the Minister of MHLG. Thus, it could be seen that PBTs began achieving 70% status in the first quarter of 2006, almost one and half years later. [this so-called progress however has come under scrutiny, as many if not all PBTs only covered a small segment of crime related areas]

¹¹ CPTED guidelines are currently been research into by the Federal Town and Country Planning department. Allocation is provided for in the 9th Malaysia Plan. The guideline would assist PBTs in ensuring various CPTED principles are incorporated in planning and building design approval.

¹² The CCTV specification was approved by the Council for Local Government (MNKT) in the first haft of 2007. This replaces the earlier CCTV guideline by the Local Government Department of 2004. The Federal Town and Country Planning Department and Local Government Department of the ministry are joint secretariat to the CCTV Task Force assigned to produce the CCTV specifications.

¹³ The Research and Development Division of the Federal Town and Country Planning Department is the secretariat to the safe city programme.

¹⁴ Sabah and Sarawak are not included in the reporting. The programme has been presented to the two states and they have showed interests in the measures. In particular the mayor of Kota Kinabalu is interested in joining the programme.

Not to burden the PBTs at the initial stage, the Minister of MHLG had directed that 5 measures be implemented immediately:-

Table 2: Five Immediate Measures To be Implemented

Measures	January – December 2005		January – December 2006		January – April 2007	
	No. LA	%	No. LA	%	No. LA	%
Measure no. 1: Separation of Pedestrian walk from motor vehicle lanes	16	42	34	89	37	97
Measure no. 2: Provision of Bollards	13	34	22	58	25	66
Measure no. 11: Cleaning-up concealed and unkempt areas	33	87	36	95	38	100
Measure no. 15: Unobstructed View of Public Walkways	29	76	32	84	34	89
Measure no. 16: Lighting-up Potential Crime areas	22	58	36	95	36	95
	27	71	32	84	34	89

Source: Based on various PBT reporting. May – October 2007 reporting currently been undertaken.

It would appear by April 2007, only measures relating to cleaning-up unkempt areas have been fully implemented by all PBTs. However, there appeared some doubt based on reports of local visits by the secretariat and the media illustrating many crime prone areas still unkempt (for example, reporting by Star Metro dated 21 November 2006 for Kajang where residents didn't agree with the PBT that such measures were widely implemented). Admittedly, this could be true of other measures reported – the point is that their coverage was still small or insignificant compared to crime prone areas to make an impact.

WHAT SAFE CITY MEASURES RECEIVED POOR RESPONSE?

Based on the reports by the secretariat, the following measures received poor response (as of April 2007):-

Table 3: Least Implemented Safe City Measures

Measure no. 5	Crime Mapping	only 7 PBTs implemented
Measure no. 9	Safety Mirrors	only 17 PBTs implemented
Measure no. 10	Alarms	only 10 PBTs implemented

The implementation of crime mapping is still at its infancy and seven PBTs having done this should be congratulated. Such mapping is very important for well coordinated crime-preventive measures between various agencies, more so for rehabilitating crime hotspots with adequate funding of social facilities etc. which could be secured from relevant ministries (for example Ministry of Women, Family and Community Development where their *pusat rujukan social* (social reference centre) may be funded by the Ministry) or their *pusat giat tumpuan* (focus crime prevention location).¹⁵ The sharing of crime data between local authorities and local residents have yet to pick up compared to the situation in Melbourne and Adelaide where crime mapping provides useful resource to channel resources for handling various diverse crime types. In this regard, PBT-local resident joint crime-preventive activities are largely non-existent –only a few PBTs have initiated limited crime-preventive activities, but even these had no staying power and disappeared from the PBT calendar soon later. Melbourne had placed the month of October for promoting local initiatives on various safety issues (including crime prevention). It even had a mayor's city safety award to deserving local residents. Indeed, Melbourne's safety issue coverage and activities are very diverse and has been continually improving to cover diverse population age group and ethnicity¹⁶ -- a coverage too incomprehensible for our PBT to visualize, much less initiate.

Safety mirrors were largely placed at road junctions and parking areas for the purpose of preventing accidents and (strangely) not for overcoming blind spots of street and alley corners; thus PBTs have still to understand the proper application of this measure despite various teach-in sessions undertaken by the secretariat. In Adelaide, such mirrors are placed slightly above pedestrian walkways allowing an eye-view of alleyways or side streets from potential crime purveyors.

Measures seeking the installation of alarms were largely neglected and we only see them in certain basement parking lots (which is very useful when thefts are about to happen and the victim requires immediate assistance from the hotel/complex security). In Melbourne, the city has undertaken safe city car parks accreditation scheme; and event introduced safe city taxi ranks to provide safety to passengers aided by the security staff making sure visitors reach home safely. Similarly, Adelaide too has such services. These two measures i.e. car parks accreditation scheme and taxi ranks could replace alarms in public areas.

¹⁵ Based on briefing session with the Ministry of Women, Family and Community Development in 2006 given by the author.

¹⁶ City of Melbourne: Application for Re-designation to the World Health Organisation Safe Community Network. October 2006. See website www.melbourne.vic.gov.au

Perhaps a small pilot scheme could be tried in one of our cities, say Johor Bahru given its almost 24 hour business activity and people movement due to its close proximity to Singapore.

On-street alarms are nowhere implemented – only the police have recently placed a talk/camera system in Bukit Bintang on an experimental basis. However, the author has personally checked (pressed and talked) two of this talk/camera system at Sungei Wang and another at Maju Junction (both in Kuala Lumpur) only to find them not functioning¹⁷.

LOCAL AUTHORITIES RESPONSE TO THE 23 MEASURES?

By the fifth report (for January –April 2007), only Shah Alam reported having implemented 100% of the 23 measures. Eight other PBTs implemented 90% of the measures and above i.e., Johor Bahru, Petaling Jaya, Melaka Bersejarah, Kajang, Johor Bahru Tengah, Klang, Kulai, and Batu Pahat.

While the following seventeen PBTs implemented 70-90% of the measures i.e. Ipoh, Seremban, Alor Setar, Taiping, Subang, Kuala Kangsar, Kulim, Kluang, Kuantan, Teluk Intan, Alor Gajah, Ampang Jaya, Selayang, Temerloh, Sepang, Kota Bharu, and Sungai Petani. It would be interesting to discuss why Johor Bahru, Petaling Jaya, Ampang and Selayang continue to be hotbeds of crime occurrences despite favourable reporting. Their crime prone areas were widely distributed and measures were inadequate to cover them. Further motorcycle theft had pushed property crime index of PBTs making the PBT appear a crime ridden environment.

Thirteen PBTs performing below 70% but above 50% were Pulau Pinang, Manjung, Nilai, Pasir Gudang, Seberang Prai, Kluang, Muar, Kuala Terengganu, Bentong, Port Dickson, Kemaman, Langkawi and Kangar.

Thus, we could surmise that about 34% of the 38 PBTs were still far from full implementation of the 23 safe city measures; and the coverage of the 23 measures were limited compared to the total crime prone areas.

¹⁷ The system was checked on 17th November at 4.10pm Sungai Wang and about 6.00pm at Maju Junction. A conversation with Dato Kamaruddin Ali (Exco member MCPF) indicated that the system was provided by the private sector and during its experimentation period was manned by the police. Was the experimentation period over?

OF CCTV AND THEIR IMPACT?

To-date only 12 PBTs have installed CCTV either through direct purchase or rental/leasing. The greater majority of PBTs have cited cost as a major constraining factor to their implementation¹⁸. Related issues to CCTV implementation includes:-

1. Many of the CCTV installation are not operated by the Police (resulting in poor response or no response);
2. Poor quality of image due to camera capture resolution (less than 470K image pixels or 470 TV lines horizontal resolution)¹⁹;
3. Occurrence of disturbances from usage of unregulated band-width instead of conforming to the public safety standard band of 4.9 GHz;
4. High cost of maintenance;
5. Limited installation of CCTV locations;

On the whole, PBTs having installed CCTV have reported a significant drop in snatch theft, example Johor Bahru, but not in Petaling Jaya and Ampang Jaya. The following preliminary and inconclusive judgement could be made of CCTV installation (based on April 2007 reporting to the safe city secretariat) which indicated that:-

Major PBTs implementing CCTV in 2006 showed a declined in snatch thefts reported compared to 2005. PBTs include Johor Bahru Selatan (18 units, drop 30%), Subang Jaya (100 units, drop 31%), Shah Alam (17 units, drop 40%), Manjung (39 units, drop 2%), Melaka Tengah (21 units, drop 36%). Penang showed a drop of 29% but no data on CCTV units were available, although it was reported in 2005 there were six units manned under the Safe City Initiatives (MCPF).

However a number of PBTs with CCTV continued to show increase in snatch theft compared to 2005. PBTs in this group are Johor Utara (18 units, increase 194%), Petaling Jaya (22 units, increase 10%) , Ampang (48 units, increase 10%), and Klang (6 units, increase 17%).

¹⁸ A sample of the cost range is: in Sg. Petani with 5 units, RM 131,000 while Petaling Jaya with 22 units RM 2.6 million. Rental-wise Klang RM 15,000 per month and Pulau Pinang RM 1.2million. Given this wide variation in cost it is hope the revised CCTV specification will provide much needed advise to the PBTs.

¹⁹ Program Bandar Selamat – Spesifikasi Teknikal Minimum Pemasangan Sistem CCTV DiKawasan Pihak Berkuasa Tempatan. (2007). Kementerian Perumahan dan Kerajaan Tempatan.

PBTs with CCTV installed, and also a high level of steps implemented did show a positive drop in snatch theft reporting: examples are Johor Bahru with 22 steps with a drop of 30% snatch theft; and Melaka with 22 steps with a drop of 36%.

A number of PBTs with a low level of steps implemented despite having installed CCTV showed no decrease in snatch theft occurrences: example Seberang Prai and Ampang Jaya.

A statistical correlation tested on 19 PBTs which showed a drop in snatch theft revealed a weak correlation of CCTV contribution to snatch theft reduction i.e. at about 27%.²⁰

From the above preliminary assessment, it may be suggested that a combined CCTV and other safe city steps could have contributed to a decrease in snatch theft occurrences –but it is inconclusive. The above assessments do take into account data up to December 2007. The latest statistics showed snatched thefts have remained stable around 9500 cases per year at national level.

SEEING THE BIGGER PICTURE AND IMPACT OF MEASURES TO CRIME REDUCTION

Global Comparison:

According to PDRM (2006) Malaysia's crime rate of 589 per 100,000 is better than Hong Kong (1117), Brunei (959), Singapore (844), but higher than Indonesia (77). Malaysia also fares better than America (4617), Australia (6979), England and Wales (8545) and many other European countries (Schneider and Kitchen, 2002); France (7002), Canada (8121), Korea (3494), Japan (1773) (sourced from PDRM, 2002). Thus Malaysia is considered a very safe country by such comparison. Such view is shared by Dr. Sundramoorthy, a criminologist from University Sains Malaysia (see The STAR 13 January 2008).

But countrywide data is meaningless to the individual. Statistics by cities would give a better picture. At this point in time I have not the opportunity to do this, and the most likelihood of this happening will be using data from various local plans and calculate their ratios with the police district (that's how the police

²⁰ Sample size 19 PBTs. Correlation value 0.23; Test value 2.11 and Critical value 2.10. Total decline for 11 PBTs equals 786 cases; and total snatch theft showing decline in 2005 equals 2886. Therefore contribution equal 27%.

delimit their crime statistics), although slightly showing an error of 10-15%, they would be useful to compare between cities in Malaysia and those overseas.

WHAT COULD WE SAY OF PROPERTY CRIME 2002-2007?

Between the period 2002 till 2006, all categories of property crime reported increased in occurrence except for snatch thefts. Snatch thefts declined from 2003 towards 2006, and minimally increased in 2007 (additional 53 cases nationwide). The decline coincided with the implementation of the safe city program. At this point in time, it is not possible to ascertain such general decline and whether the safe city programme had contributed positively in this direction – I would like to think so, but the lack of extensive coverage and lack of concerted effort on the whole appear to negate this reasoning (and this bothers me). Further crime displacement to other neighbouring areas could not be discounted.²¹

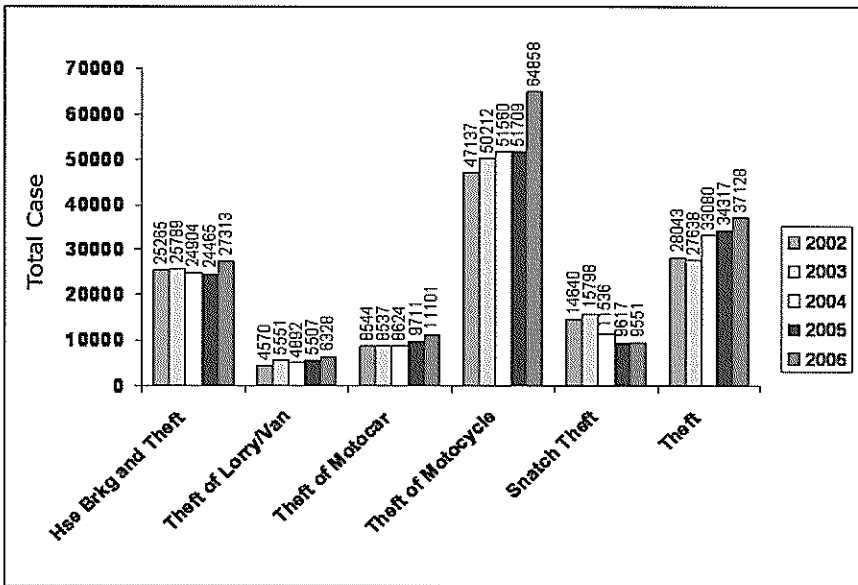


Figure 1: Property Crime at National Level (2002-2006)

²¹ Carmona, Heath, Oc and Tiesdell (2003) had classified different forms of displacement i.e. geographical displacement, temporal displacement, tactical displacement and crime type displacement, in their approach to Safety and Security of the The Social Dimension chapter (page 119-124).

House break-ins (burglaries) showed no decline despite ten measures were targeted at this crime. PBTs which have managed to reduce house break-ins are Shah Alam and a small number of other PBTs (Taiping, Alor Star, Manjung etc). As shown in the figure 1.

Motorcycle thefts show unrelenting increase, and in 2006 they appear to increase further. Looking closely at the PBT level, only Malacca showed a decline in motorcycle theft. Has the innovative measures it introduced (motorcycle locking system) contributed to this? Probably the motorcycle locking system was more widely implemented in Malacca compared to other PBTs. It has been said on numerous occasions by the police, only when we are able to tackle motorcycle thefts successfully will the improvement in crime index be realized.

Indeed, visits to basement car parks and multi-story parking facilities clearly show lack of concern over crime prevention designs example walls and columns obstructing clear line of sight and entrapment spots. Newer complexes like Time Square have good parking design conforming to CPTED principles (i.e. clear sightlines, signages, lightings and materials) but many complexes from the 38 local authorities do not have such safety features.

Snatch thefts peaked in 2003, and thereafter declined beginning with 2004, 2005 and 2006. Was the decrease in snatch thefts a result of the safe city measures? The safe city programme had nineteen measures targeted at preventing snatch thefts. Assuming such measures did contribute, much more initiatives/implementation would be needed given the slower decline from 2005 to 2006 and a minimal increase in 2007.

TOP TEN PBTs WITH HIGH PROPERTY CRIME

Johor Bahru continues to be on top of the list, highest for four out of six property crime category in 2006. But it had certainly improved from the situation in 2005 when it topped five out of the six categories (i.e. with marked decline in snatch theft -544 cases). Maybe the CCTV was really effective here compared to other PBTs. Other PBTs occupying top ranking include Subang Jaya, Ampang Jaya, Pulau Pinang, etc.

Table 4: Local Authorities Ranked according to Property Crime Severity (2006)

House Break and theft	Theft of Lorry/ Van	Theft Of Motocar	Theft of Motorcycle	Snatch Theft	Theft
MBJB P. Gdg 1592 ▲▲▲	Subang Jaya 736 ▲▲	MBJB P. Gdg 1453 ▲▲▲	MBJB P. Gdg 5573 ▲▲▲	Ampang Jaya 767 ▲	MBJB P. Gdg 1840 ▼▼
Ampang Jaya 1402 ▲▲▲	MBJB P. Gdg 642 ▲▲▲	Petaling Jaya 911 ▲▲▲	S. Perai 3632 ▲▲▲	Petaling Jaya 698 ▲	Pulau Pinang 1797 ▲
Subang Jaya 1103 ▼	Petaling Jaya 604 ▲▲	Subang Jaya 789 ▲	Pulau Pinang 3413 ▲	Pulau Pinang 593 ▼▼	Petaling Jaya 1761 ▼▼
Petaling Jaya 1058 ▲	Selayang 413 ▲▲▲	Ampang Jaya 613 ▲	Petaling Jaya 3372 ▲▲	MBJB P. Gdg 544 ▼▼	Ampang Jaya 1748 ▲
Selayang 1006 ▲	Klang 370 ▲▲▲	JB Tengah Kulai 426 ▲▲	Subang Jaya 2735 ▲	S. Perai 484 ▲	Melaka 1412 ▲▲
Ipoh 907 ▲▲	Kajang 336 ▲	Klang 400 ▲	Shah Alam 2254 ▲▲▲	Ipoh 398 ▼▼	Ipoh 1297 ▼▼
S. Perai 835 ▲▲	Ampang Jaya 293 ▼	Selayang 346 ▼	Klang 1990 ▲	Selayang 274 ▲	Selayang 1269 ▲▲▲
Seremban 774 ▼	JB Tengah Kulai 232 ▲	Kajang 324 ▲	Selayang 1980 ▲▲	Subang Jaya 173 ▲	S. Perai 1217 ▲▲
Kuantan 726 ▲	Shah Alam 144 ▲	Ipoh 269 ▲	JB Tengah Kulai 1965 ▲▲	Melaka 175 ▼	Subang Jaya 1721 ▼▼
Melaka 703 ▲▲	Ipoh 102 ▲	S. Perai 247 ▲	Ampang Jaya 1792 ▲▲	Seremban 180 ▲	Shah Alam 1803 ▼▼

▲ Case increase
 ▲▲ Case increase >100 case
 ▼ Case decrease
 ▼▼ Case decrease >100 case

Source: Based On All IPK Negeri (PDRM), September 2006

This basically indicates that the above PBTs have to be given greater attention should the question of priority is considered. Given the concern over snatch thefts and property crime index overall, an additional classification had been suggested for classifying PBTs according to crime severity (particularly for CCTV installation and other concerted initiatives, and more importantly for funding purposes)²².

RECENT IMPROVEMENT TO THE SAFE CITY PROGRAMMES

- a. The ministry had classified the 38 PBTs into three categories of crime severity i.e. (a) critical, (b) less critical, and (c) non-critical. Three criteria used in determining the classification of PBTs were (a) total property crime index (more than 5,000 cases per year for critical, 2000 – 4,999 cases for less critical, and less than 2000 cases for non-critical PBTs), (b) snatch theft (more than 250 cases for critical, 100 – 249 cases for less critical, and less than 100 cases for non-critical PBTs) and (c) whether PBTs were centres of international tourist attraction.

²² This classification had been endorsed by the National Council for Local Government in 2007 and currently been used to work out funding purposes for CCTV installation etc. for PBTs classified 'very critical'. Latest up-date: In January 2008, the Cabinet had approved a special funding of RM75 million for CCTV installation for the remaining Ninth Malaysia Plan.

- b. In January 2008 the MHLG through its Local Government Department made plans to tender out CCTV installation. This was based on the recent approved funding for the Ninth Malaysia Plan of about RM75 million. For the year 2008, a certain undisclosed amount was allocated.
- c. PBTs classified critical includes Johor Bahru, Pasir Gudang, Petaling Jaya, Pulau Pinang, Subang Jaya, Ampang Jaya, Seberang Prai, Selayang, Johor Bahru Tengah, Kulai and Ipoh (see table next page).
- d. PBTs classified less critical are Shah Alam, Seremban, Nilai, Klang, Melaka, Kuantan, Alor Star, Sungai Petani, Kuala Terengganu, Kota Bahru, Kajang and Muar (see table 5).
- e. A revised CCTV installation guideline had been approved by the National Council for Local Government in 2007. It relates to system transmission, architecture and network infrastructure, system configuration and appliance specification; and maintenance checklist. PBTs in the critical category would have specification beyond what is provided in the CCTV installation guidelines.
- f. PBTs should give greater concern on crime mapping with cooperation from the police and the public. This measure is considered very important in initiating PBT-police-public involvement in crime prevention activities. [more so if we are to benchmark against international standards where public involvement is vital for accreditation of a safe city status from WHO]
- g. With respect to the above (vi) concern, safe city committee at PBT and State level should be operating on a regular basis compared to current one-off, irregular or non-existent situation.

Table 5: PBTs according to Property Crime Severity Classification

CATEGORY		CRITICAL	LESS CRITICAL	NON CRITICAL
CATEGORY	CRIME PROPERTY INDEX	> 5,000 case	2,000 – 4,999 case	< 2,000 case
	SNATCH THEFT CASE/MONTH	> 250 case	100 – 249 case	< 100 case
Local Authority		MB Johor Bharu*	MB Shah Alam*	MP Batu Pahat
		PBT Pasir Gudang	MP Seremban*	MP Kulim
		MP Petaling Jaya*	MP Nilai	MP Taiping
		MP Pulau Pinang*	MP Klang*	MP Sepang
		MP Subang Jaya*	MB Melaka*	MP Alor Gajah
		MP Ampang Jaya*	MP Kuantan*	MP Kluang
		MP Seberang Perai*	MB Alor Star	MP Teluk Intan
		MP Selayang	MP Sungai Petani	MP Manjung
		MP J Bahru Tengah	MPK Terengganu*	MP Kemaman
		MP Kulai	MP Kota Bharu*	MP Kangar
		MB Ipoh*	MP Kajang	MP Temerloh
			MP Muar	MP Port Dickson*
				MP Langkawi*
				MP Kuala Kangsar
		MP Bentong		

Note: * denotes PBTs with international tourist presence.

SOME IDEAS FROM MELBOURNE AND ADELAIDE

- (a) Lessons from Melbourne and Adelaide showed that the structure of local government and accountability of its elected mayors and councilors plays a major influence driving towards a safer city status. Both cities have a **dedicated staff** to handle crime prevention activities, in particular Melbourne's effort on various safe city fronts benefiting various age groups and ethnicity. Our PBTs despite with city status do not have a dedicated staff handling safe city task; this is even more so at municipality level where staffing is more acute and overburden with various municipality duties.
- (b) The aspect on **accreditation** for a safe city status by WHO and accreditation for parking facilities of complexes both play a positive effect for the city effort and its attractiveness for international competitiveness and attractiveness of building premises (rating high for potential users etc. in

regards safety) respectively. Our safe city programme probably can examine this potential avenue or direction.

- (c) Both Cities have embedded **CPTED into their planning and building approval process**. Though the Malaysian Safe City programme has benefited from an early introduction to CPTED, some of CPTED features are already in the 23 measures. But to make this more effective CPTED features must be embedded in our planning approval process and building design approval stage too. Thus, CPTED would have to be targeted at the layout plan approval stage, and at the building design stage. To cater for both stages, CPTED guidelines for both will have to be prepared to suit Malaysian setting, although most features are universal.
- (d) Perhaps the most important lessons that could be learnt from both cities is the **partnership** between the city and its police and citizen, and their various task forces and working groups continuously examining and improving safety measures largely based on what Colleen Lazenby (Manager Community Safety and Wellbeing, Melbourne City Council, 2007) called **the evidence-based planning** i.e. “the insistence on data to inform and drive agendas, delivering consistency and reliability in the representation of city safety by all stakeholder”²³. Thereby promoting a bottom up process of safe city measures from the public, police and other stakeholders themselves, rather than from the top or from the Federal Government Ministry – when this happens, then safe city programme would likely have made a meaningful impact on crime reduction through wider ownership and action.
- (e) As in all programmes, management dictates the need for some form of **auditing** or rather, how well the programme has gone. So, **public survey** or perception as to how the safety level has been perceived or crime reduced (or otherwise) needs to be conducted on a regular basis. These surveys, properly conducted, provide vital information not only on outcome, but also the ranking of sites or locations as to the rating of crimes or perceived risk level of crime by the public, thereby justifying prioritising such areas for improvement and funding requirements etc. (as are been conducted in Adelaide and Melbourne). Thus, the safe city programme in Malaysia should move in this direction and perhaps touch-base with the public for all the PBTs concerned – what and how do they perceive safety issues and what measures are more meaningful in bringing down crime occurrence can be pursued vigorously.

²³ City of Melbourne: Application for Re-designation to the World Health Organisation Safe Community Network. October 2006. See website www.melbourne.vic.gov.au

CONCLUSION

It is hoped that this paper has provided some key aspects of the safe city programme under the Ministry of Housing and Local Government. Much remains to be done at the Ministry, state and local level for the programme to achieve a meaningful reduction in crime occurrence, a task of considerable magnitude given existing institutional structure constraint and current inertia towards empowering public decision and involvement in crime prevention.

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THE CONTRIBUTION OF *FIQH AL-JINAYAT* (ISLAMIC CRIMINAL LAW) IN THE PLANNING OF A SAFE CITY

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Abstract

The planning towards a safe city is a must, as it is to fulfill the rights of people that we planned for. In Islam, it is a requirement through the realization of *maqasid al-shari'ah* (objectives of Islamic law) that five elements i.e. religion, life, intellect, lineage and property must be preserved or protected in any planning practices. Thus, it is the intention of the paper to present the idea of Islamic criminal law (*fiqh al-jinayat*) so that it can forward the planning of a safe city. For that matter, the six crimes under *hudud* namely *sariqah* (theft), *zina* (illegal sexual intercourse), *qadhif* (false accusation), *shurb* (intoxication), *riddah* (apostasy) and *hirabah* (armed robbery) are discussed at length. The paper also discusses the crimes under *qisas* (retaliation) and *ta'zir* (discretionary punishment). The discussion lays down the principles of Islamic criminal law and sheds light on how Islam deals with criminal happenings in society. It is found that Islam imposes severe punishment on crimes committed. These punishments were carried out in view of the public as a lesson to other community members. The approach is more to educate the public, to instill awareness and a sense of responsibility and care, rather than to punish them. This spiritual dimension in the planning of a safe city is very important in addition to the provision of the physical elements of safety.

Keywords: Safe city, Islamic criminal law, Crimes, Society, City planning

INTRODUCTION

A safe city is commonly known as a city that is physically, socially, and mentally free of threats. Apart from that, a city must be environmentally

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preserved at all times. Another salient feature of a safe city is that the community is well protected from any condition that may aggravate unruliness and disruption. Basically, a safe city is a city where the community is able to live and perform their daily activities in peace and harmony. These characteristics of a safe city pose a challenge not only to the Royal Malaysia Police, but also to all Municipal Councils, Department of Town and Country Planning, Ministry of Housing and Local Government, Malaysian Crime Prevention Foundation, and property developers.

In achieving the above agenda of safe cities, efforts have been put to make a city free from violence such as theft, burglary, and snatch theft that are detrimental to property and life. Much concern is also placed on the avoidance of natural disasters such as floods and landslides through planning measures. Social and moral decay such as drug addiction, white collar crimes, bribery, abuse of power, loss of integrity/public trust are among the threats to a safe city, therefore, many communal programmes are arranged for that reason. Preventive measures from any form of indoor or outdoor accidents such as road accidents, falls from buildings, fires are also installed within the safe city.

The present concept of safe cities encompasses the physical, environmental, and social spectrum. However, the priority of current safe city programmes is on the prevention of property crime in the urban areas. For that matter, 5 measures for immediate action have been taken i.e.:

- a. Separation of pedestrian walkways and motor vehicle lanes
- b. Provision of bollards and barriers
- c. Cleaning/tidying up concealed or unkempt areas
- d. Unobstructed view of public walkways
- e. Lighting up potential crime areas

Apart from these 5 immediate actions, there are many other crime-preventive measures laid down under 3 strategies i.e. designing the physical environment, target hardening and social/community activities and public awareness. For the first strategy, separation of pedestrian and motorized vehicle lanes, provision of bollards, maintenance of landscapes along pedestrian walkways, crime mapping and information –sharing through GIS-based mapping system, review of housing layout guidelines and Crime Prevention Through Environmental Design (CPTED) are the measures in place. CPTED is a crime prevention philosophy based on proper design and effective use of the built environment leading to a reduction in the incidence and fear of crime as well as an improvement in quality of life. The underlying principles of CPTED are casual surveillance, land use mix and activity generator, definition of use and

community ownership, exterior building design, provide good lighting standard, way finding, well designed streets and predictable routes and entrapment locations.

As for the second strategy i.e. target hardening, police post, crime-prevention signages, safety mirrors, alarm, cleaning/tidying concealed and unkempt areas, motorcycle locking facilities, installation of Closed Circuit Television (CCTV), installation of lights along five-foot ways, unobstructed view of public walkways, lighting up potential crime areas, prohibition of business and parking on the five-foot ways and pedestrian footpaths, generating small business activities at vulnerable crime spots and securing private security services are the potential measures being located and planned at strategic places.

Finally, the third strategy i.e. social/community activities and public awareness is about creating public awareness through education, installation of lights on the sides, front, and back of the house, distributing pamphlets on crime prevention activities, and community patrol in housing areas.

Much has been done to prevent crimes from happening yet they still happen. Figure 1 shows a crime index comparison between Jan – Dec 2006 and Jan – Dec 2007. The figure indicates an increasing number of criminal happenings within the same period in different years, be it violent crime or property crime.

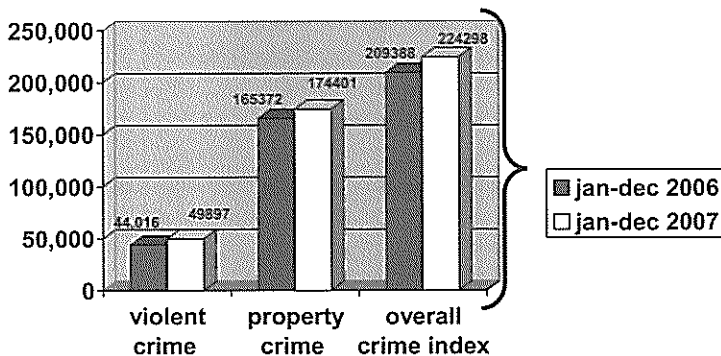


Figure 1: Crime Index Comparison (Jan – Dec 2006 / Jan – Dec 2007)

Table 1: Crime Index Comparison In The States

IN THE STATES					
		Jan - Dec 06	Jan - Dec 07	+ / -	%
1	KEDAH	1,682	2,439	757	45.01
2	SARAWAK	2,167	2,922	755	34.84
3	KELANTAN	961	1,198	237	24.66
4	SELANGOR	12,395	15,104	2,709	21.86
5	PAHANG	1,077	1,263	186	17.27
6	SABAH	1,702	1,919	217	12.75
7	PENANG	2,951	3,280	329	11.15
8	MALACCA	1,167	1,265	98	8.40
9	TERENGGANU	709	751	42	5.92
10	PERAK	3,039	3,211	172	5.66
11	JOHOR	6,611	6,900	289	4.37
12	KUALA LUMPUR	7,539	7,639	100	1.33
13	N. SEMBILAN	1,843	1,857	14	0.76
14	PERLIS	173	149	-24	-13.87
	MALAYSIA	44,016	49,897	5,881	13.36

With regard to the crimes according to the states, all states in Malaysia are facing an increasing number of crimes ranging from 0.76% to 45.01%; except Perlis, with a crime number reduction of 13.87%. Kedah holds the highest percentage of crime number increase with an increase of 45.01%. However, in terms of crime rate, Selangor holds the highest increment, that is from 12,395 crimes in Jan – Dec 2006 to 15,104 crimes within the same period in 2007. Overall, there is a 13.36% increase in the number of crimes in Malaysia between the years 2006 and 2007.

In Malaysia, crime has been divided into two; i.e. property crime and violent crime. Table 2 shows a 5.46% increase in the number of property crime in Malaysia. All offences have increased in number from 2006 to 2007, except the thefts of vans, lorries and heavy machinery, which are decreasing. The most frequent thefts are motorcycle thefts (65,462), followed by thefts (42,472) and night burglary (20,080).

Table 2: Crime Index Comparison For Property Crime

PROPERTY CRIME				
Offences:	Jan -Dec 06	Jan -Dec 07	+ / -	%
Burglary (night)	20,080	24,440	4,360	21.71
Car thefts	11,154	12,427	1,273	11.41
Thefts	42,472	44,617	2,145	5.05
Burglary (day)	8,792	9,159	367	4.17
Motorcycle thefts	65,462	67,584	2,122	3.24
Snatch thefts	11,074	11,127	53	0.48
Van, lorry and heavy machinery thefts	6,338	5,047	-1,291	-20.37
TOTAL:	165,372	174,401	9,029	5.46

In view of violent crime, the number has increased by 13.36% as shown in Table 3. Out of 11 offences listed under violent crime, only 3 indicate reduction of rate that are murder (-2.97), robbery without firearms (-11.43) and robbery with firearms (-18.55). Other than that, the number of offences is increasing ranging from 8.88% to 159.53%. Gang robbery without firearms has the highest percentage of increase, i.e. 159.53%, followed by rape (29.46%) and criminal intimidation (21.20%). The most frequent occurrences are robbery without firearms (19,467), criminal intimidation (6,699) and assaults (5,843).

Looking at the above crime-preventive measures and crime index comparison, one might ask; are there any other approaches or measures to reduce the increasing number of crimes happening in Malaysia? Therefore, the paper presents the idea of Islamic criminal law in coping with the increasing number of crimes happening in Malaysia. The paper hopes to instill awareness among policy makers and the public of how Islam deals with crimes against individuals or the public. This awareness will lead to the planning of safe city.

WHAT ISLAMIC CRIMINAL LAW CAN CONTRIBUTE TO THE PLANNING OF SAFE CITY?

First and foremost, creating public awareness through education is where Islamic law can contribute to the planning of a safe city in the sense that a different approach has been taken by Islamic law. Apparently, the division of crimes in Islamic law is based on the kinds of punishment rather than a division based on the nature of crimes committed as in common law.

Table 3: Crime Index Comparison For Violent Crime

VIOLENT CRIME				
Offences:	Jan - Dec 06	Jan - Dec 07	+/-	%
Gang robbery Without firearms	2,723	7,067	4,344	159.53
Rape	2,454	3,177	723	29.46
Criminal intimidation	6,699	8,119	1,420	21.20
Assaults	5,843	6,806	963	16.48
Gang robbery with firearms	67	77	10	14.93
Rioting	2,291	2,608	317	13.84
Molest	2,064	2,320	256	12.40
Extortion	1,554	1,692	138	8.88
Murder	606	588	-18	-2.97
Robbery without firearms	19,467	17,241	-2,226	-11.43
Robbery with firearms	248	202	-46	-18.55
TOTAL:	44,016	49,897	5,881	13.36

Source: New Straits Times, January 9, 2008

It is clear in common law that crimes are classified according to the nature of its occurrences as stated in Table 2 and 3 above. As for punishment, murder is classified by Section 302, in the Malaysian Penal Code: "Whoever commits murder shall be punished with death". Punishment for theft is classified by Section 379: "Whoever commits theft shall be punished with imprisonment for a term which may extend to seven years, or with fine, or with both, and for a second or subsequent offence shall be punished with imprisonment and shall also be liable to fine or to whipping." Punishment for forgery is classified by Section 465: "Whoever commits forgery shall be punished with imprisonment for a term which may extend to two years, or with fine, or with both."

In contrast, crimes in Islamic law are classified by the kinds of punishment, i.e. *hudud*, *qisas* and *ta'zir*. For instance, the crime of murder is classified under *qisas*, the crime of theft is classified under *hudud* and the crime of forgery is classified under *ta'zir*. In order to get a clear idea of the classification of Islamic criminal law, it is appropriate to briefly discuss here the crimes and its punishments implied by each category i.e. *hudud*, *qisas* and *ta'zir*.

HUDUD CRIME AND THEIR PUNISHMENT

Although some jurists hold a different view concerning the number of *hudud* crimes, either by adding offences or reducing them, the majority of jurists agree that there are six offences of *hudud* crimes, namely: *sariqah*, *zina*, *qadhif*, *shurb*, *riidah* and *hirabah*.⁴ Therefore, this paper will focus on these crimes.

HADD AL-SARIQAH (THEFT)

The term *sariqah* in Islamic law means taking someone else's property from its proper custody secretly.⁵ Given this meaning, nobody can be found guilty of this crime unless four key elements are established and proved. They are:

1. Secrecy, which means taking something without the victim being aware and without his permission, such as stealing someone's property from his house while he is away or asleep.⁶
2. The stolen thing is an article of property.⁷ It is important to note as well that in the sense of *hadd al-sariqah*, the crime will be tried under the provisions of *ta'zir* rather than *hadd* if the stolen property does not meet the four following conditions:
 - a) The stolen property is movable and transferable. This is because the nature of *sariqah* demands moving something and taking it away from its proper custody to the custody of the perpetrator and, naturally, this could not happen unless it was movable from one place to another.⁸

⁴ EL-AWA, Mohamed S. *Punishment in Islamic Law*. Indianapolis: American Trust Publications, 1993, p. 2.

⁵ 'AWDAH, Abd al-Qadir. *Al-Tashri' al-Jina'i al-Islami muqaranan bi al-Qanun al-Wad'i*. 12th Edition. Beirut: Muassasat al-Risalah, 1993, vol. 2, p. 514. Wizarat al-Awqaf wa al-Shu'un al-Islamiyyah. *Al-Mawsu'at al-Fiqhiyyah*. 2nd Edition. Kuwait: Tiba'at dhat al-Salasil, 1989, vol: 1, p. 288.

⁶ 'AWDAH. *Al-Tashri' al-Jina'i al-Islami muqaranan bi al-Qanun al-Wad'i*. vol. 2, p. 518.

⁷ IBN HAZM, Abu Muhammad 'Ali bin Ahmad bin Sa'id bin Hazm al-Zahiri. *Al-Muhalla bi al-Athar*. Beirut: Dar al-Afaq al-Jadidah, n.d., vol. 11, p. 337. AL-KASANI, 'Ali al-Din. *Bada'i' al-Sana'i'*. 2nd Edition. Beirut: Dar al-Kitab al-'Arabi, 1982, vol. 7, p.67. IBN QUDAMAT AL-MAQDISI, Abu Muhammad 'Abdullah bin Ahmad. *Al-Mughni*. Beirut: Dar al-Fikr, 1405H, vol. 9, p.96.

⁸ 'AWDAH. *Al-Tashri' al-Jina'i al-Islami muqaranan bi al-Qanun al-Wad'i*. vol. 2, p.543.

- b) The stolen property is absolutely valuable in Islamic law. What is meant by this is that the stolen property is valuable for a Muslim and subject to transactions. This is because some property is valuable to non-Muslims but not Muslims, for example wine, beer, pork and other forbidden things. In this case, the perpetrator is rather subject to provisions of *ta'zir* than *hadd*.⁹
 - c) The stolen property is in its proper custody.¹⁰
 - d) The stolen property should be worth a minimum amount. According to the Maliki, Shafi'i and Hanbali schools, the minimum value of the stolen property should be three *dirhams* or one quarter of a *dinar*. Meanwhile, according to the Hanafi school, the minimum value of the stolen property is ten *dirhams* or one *dinar*.¹¹
3. The stolen property belongs to another person without any doubt. If someone is confused whether the property in someone else's hand actually belongs to him or not and he steals the said property under this confusion, he can be punished under *ta'zir* but not *hadd*.¹²
4. *Mens rea* or criminal intent. This is because Islam is concerned not only with what is apparent, the deeds, but also what is not apparent, the intention behind the deeds.¹³ Criminal intent will be taken into account when the perpetrator steals something willfully and with the knowledge that his action is prohibited.¹⁴

With regard to the punishment of *sariqah*, after all the said elements and conditions are established and proved, the cutting off of part of a limb is imposed by Islamic law. This punishment originates from the Qur'anic verse: "As for the male thief and the female thief, cut off their hands as a recompense for what they have earned; an exemplary punishment from Allah; and Allah is Mighty, Wise."¹⁵

⁹ *Ibid.* p. 544.

¹⁰ *Ibid.* pp. 554 -557.

¹¹ EL-AWA. *Punishment in Islamic Law*. p.3.

¹² 'AWDAH. *Al-Tashri' al-Jina'i al-Islami muqaranan bi al-Qanun al-Wad'i*. vol. 2, p.588.

¹³ *Ibid.* p.608.

¹⁴ 'AWDAH. *Al-Tashri' al-Jina'i al-Islami muqaranan bi al-Qanun al-Wad'i*. vol. 2, p.608.

¹⁵ Surat al-Ma'idah, 5:38.

HADD AL-ZINA (ILLEGAL SEXUAL INTERCOURSE)

Literally, *zina* means illicit sexual intercourse.¹⁶ In this regard, Islamic law differs from modern penal systems by considering any sexual intercourse outside marriage as criminal, so long as it is voluntary, whereas in modern penal systems sexual intercourse outside marriage is considered legal and not a crime, if voluntary.¹⁷

It is important to clarify that in Arabic, the term *zina* applies both to fornication, which is defined in English as sexual intercourse between an unmarried man and an unmarried woman, and adultery, which is defined in English as sexual intercourse between two individuals, at least one of which is married.¹⁸

The punishments, correspondingly, are different from one to another. For the former, the punishment is one hundred lashes as prescribed in the Qur'anic verses: "The male and the female who commit *zina*: scourge each of the twain with a hundred stripes. And let not tenderness in the law of Allah take hold of you in regard to the twain, if you believe in Allah and the Last Day. And let a band of the believers witness this chastisement."¹⁹ And for the latter, the punishment is stoning to death.

HADD AL-QADHF (FALSE ACCUSATION)

The crime of *qadhf* refers to accusing a chaste man or woman of committing *zina* or denying his or her lineage. The main condition in this case is that the victim must be a sane adult Muslim who is known to be a chaste person. A slanderer, however, has the right to prove his case by producing four witnesses. Otherwise, his accusation will be malicious and he is liable to eighty lashes, his testimony will never again be accepted and he will be considered a sinner (*fasiq*) until he repents.²⁰

¹⁶ IBN MANZUR, Abu al-Fadl Jamal al-Din Muhammad ibn Mukrim. *Lisan al-'Arab*. Beirut: Dar Sadir, 1990, vol. 14, p.359.

¹⁷ EL-AWA. *Punishment in Islamic Law*. p. 14.

¹⁸ COWIE, A P.(ed.). *Oxford Advanced Learner's Dictionary*. 4th Edition. Oxford: Oxford University Press, 1989.

¹⁹ Surat Al-Nur, 24: 2.

²⁰ SIDAHMAD, Muhammad 'Ata al-Sid. *Islamic Criminal Law: The Hudud*. Petaling Jaya: Muhammad 'Ata al-Sid sid Ahmad, 1995, p. 70.

HADD AL-SHURB (INTOXICATION)

Shurb means drinking alcoholic beverages or intoxicants. In the pre-Islamic era and the early years of Islam, drinking intoxicants was a common practice among the Arabs. This is why in the early years of Islam, drinking intoxicants was not prohibited all at once, but step by step.²¹

Unlike other types of *hadd* punishment, the punishment for drinking intoxicants was not prescribed by the Qur'an, but only by the Sunnah, without fixing the number of lashes. As such, the four main schools of Islamic law are not unanimous concerning the number of lashes which should be imposed. According to the Hanafi, Maliki and Hanbali schools, the *hadd* punishment for drinking is eighty lashes, whereas, according to the Shafi'i school and another view of the Hanbali, the punishment is only forty lashes.²²

HADD AL-RIDDAH (APOSTASY)

This crime is equated with the renunciation or abandonment of Islam by one who professes the Islamic faith. According to jurists, *riddah* may be committed with reference to belief, word or deed. The person concerned should be in full possession of his senses and should have acted voluntarily.²³

Just as with *hadd al-shurb*, there is no punishment mentioned in the Qur'an. What the Qur'an mentions concerning *riddah* on different occasions is the assurance that the *murtadd* (one who commits *riddah* or apostasy) will be punished in the hereafter.²⁴ It is the Sunnah which prescribes death as a *hadd* punishment for such a crime.

Thus, the majority of jurists such as the Hanafis, Malikis, Shafi'is and Hanbalis classify the death penalty for the crime of *riddah* as a *hadd* punishment.²⁵ Nevertheless, it should be pointed out that there are jurists who rather consider its punishment as *ta'zir* than *hadd*. Ibrahim al-Nakha'i and Sufyan al-Thawri,

²¹ *Ibid.* p. 64.

²² 'AWDAH. *Al-Tashri' al-Jina'i al-Islami muqaranan bi al-Qanun al-Wad'i*. vol. 2, p.505.

²³ RAHMAN, S.A. *Punishment of Apostasy in Islam*. 2nd Edition. Lahore, Pakistan: Institute of Islamic Culture, 1978, p. 9. See also AL-ZUHAYLI, Wahbah. *Al-Fiqh al-Islami wa adillatuh*. 4th Edition. Damascus: Dar al-Fikr, 1992, vol.7, p. 5576.

²⁴ EL-AWA. *Punishment in Islamic Law*. p. 50.

²⁵ DOI, 'Abd Rahman I. *Shari'ah: The Islamic Law*. Kuala Lumpur: A.S. Noordeen, 1984, p. 266.

who are among the followers of the Prophet's s.a.w. companions, held the view that the *murtadd* should be invited back to Islam and should never be sentenced to death.²⁶

HADD AL-HIRABAH (ARMED ROBBERY)

The term *hirabah* is also known as *al-sariqah al-kubrá* (great theft) and refers in legal writings to highway robbery or armed robbery. This is because this crime seems to be similar to the crime of *sariqah* in the sense of taking someone else's property. The distinction between both crimes is secrecy; it is called *sariqah* when the crime is secret, but it is called *hirabah* when it is committed openly and by force.²⁷ These may be important elements when the crime is described.

The laws concerning the crime of *hirabah* are based on the Qur'anic verse: "The recompense of those who wage war against Allah and His Messenger, and go about in the land making mischief is only that they shall be slain, or crucified, or their hands and their feet be cut off on opposite sides, or they be banished from the land. Such shall be their humiliation in this world, and in the Hereafter theirs shall be a mighty torment."²⁸

Due to the word 'or' (aw) in this verse, the jurists are divided about the punishments for highway robbery. The Hanafi, Shafi'i and Hanbali schools held the view that the punishments are based on a basic proportionality which is established between the crime and the punishment (*tartib*). Therefore, they maintained that if a highway robber kills, he must be killed; if he usurps property and kills, he is to be killed and crucified²⁹; if he usurps property alone, he is to have his limbs amputated on opposite sides; and if he terrorizes but does not kill and does not usurp property, he is to be exiled or banished. The Maliki school, however, held the view that these punishments are according to the discretion of the ruler (*takhyir*) to apply whichever he sees fit in parallel with the welfare of people and rejecting corruption. For example, even if a highway

²⁶ *Ibid.*

²⁷ 'AWDAH. *Al-Tashri' al-Jina'i al-Islami muqaranan bi al-Qanun al-Wad'i*. vol. 2, p. 638.

²⁸ Surat al-Ma'idah, 5: 33.

²⁹ Abu Hanifah and Zufar held a slightly different view on this matter. According to them, if the highway robber usurps property and kills, two options are given to the ruler. The first one is that the highway robber is to have his limbs amputated on opposite sides, then he must be killed or crucified. The second one is he must be killed or crucified without amputation.

robber does nothing more than terrorize people, but does not kill or usurp property, he may still be killed, have his limbs amputated or be crucified.³⁰

QISAS (RETALIATION)

The term *qisas* means retaliation. In Islamic law, *qisas* discourse refers to the punishments for homicide, the infliction of injury and murdering of an unborn child.³¹

HOMICIDE

Homicide is classified into categories, which vary from one school to another. The majority of them, including the Shafi'i and Hanbali schools, divide homicide into three categories³², namely:

1. Deliberate murder. In this a weapon is used intentionally which generally proves to be a lethal one and causes death to the victim.
2. Accidental or murder by mistake. In this, the weapon thus used happens to be indeed a lethal one but the real intention was not to kill anyone. For instance, a shooting which was originally aimed at a deer missed the intended target and struck a human being.
3. Quasi-deliberate. In this, the intention of hitting a person was indeed involved but the instrument used was such as does not usually cause death, such as a scourge, a baton, a stone, etc.³³

The provisions of homicide are laid down by the Qur'an and the Sunnah. The Qur'an, however, only mentions the first and second categories. This is why some jurists, including the Maliki school, recognize only deliberate or

³⁰ 'AWDAH. *Al-Tashri' al-Jina'i al-Islami muqaranan bi al-Qanun al-Wad'i*. Vol. 2, pp. 647. AL-MAWARDI. *Al-Ahkam al-Sultaniyyah. The Laws of Islamic Governance*. pp. 93. EL-FADL. *Rebellion and Violence in Islamic law*. pp. 56-57.

³¹ AL-ZUHAYLI. *Al-Fiqh al-Islami wa adillatuh*. vol.7, pp. 5611.

³² The Hanafi school held the view that homicide is divided into 5 categories, namely: deliberate, quasi-deliberate, accidental, equivalent to accidental and indirect. The Maliki school, however, held the view that homicide is divided into 2 types: deliberate and accidental. See 'AWDAH. *Al-Tashri' al-Jina'i al-Islami muqaranan bi al-Qanun al-Wad'i*. vol. 2, pp.7-9.

³³ AL-ZUHAYLI. *Al-Fiqh al-Islami wa adillatuh*. vol.7, pp. 5613. 'AWDAH. *Al-Tashri' al-Jina'i al-Islami muqaranan bi al-Qanun al-Wad'i*. vol. 2, pp. 7-9.

accidental killing. According to the Qur'anic verses, the punishment for deliberate murder is death.³⁴

With reference to the law concerning murder by mistake, Allah Almighty says, "It is not for a believer to kill a believer saves by mischance; and he who kills a believer by mischance, on him is the setting free of a believing slave and blood money to be delivered to his family except that they forgo...."³⁵

In any case, it is possible to sum up that in cases of deliberate homicide; the punishment is *qisas*, which means taking of the culprit's life because of the life he has taken. However, *qisas* may be ruled out if the victim's nearest relatives do not demand it. The relatives may then choose one of three options, namely:

- a. the payment of *diyah* (Blood money)
- b. pardoning or forgiving the killer
- c. making a settlement on more or less the equivalent of *diyah*.³⁶

Whenever they insist upon the payment of *diyah*, it is to be in the value of one hundred camels, and the same *diyah* is due in all cases of quasi-deliberate homicide and murder by mistake as neither incurs *qisas*. Accordingly, *diyah* is the only punishment in cases of quasi-deliberate homicide and murder by mistake, as *qisas* is relevant to neither, and at the same time it may be a substitute punishment in cases of deliberate homicide if the relatives of the victim do not demand *qisas*.

THE INFLICTION OF INJURY

Whenever a person causes physical harm to another, the injured has the right of retaliation. All jurists however, agree that *diyah* may replace *qisas* when it is not possible to inflict it or when a peaceful agreement is achieved.³⁷ The value of *diyah* for injuries and wounds is mentioned by the Prophet (s.a.w) in his letter to 'Amr bin Hazm when he was appointed to represent the Prophet (s.a.w) in *al-Yaman*.³⁸

³⁴ Surat al-Baqarah, 2: 178.

³⁵ Surat al-Nisa', 4: 92.

³⁶ AL-ASQALANI. *Bulugh Al-Maram Attainment of the Objective according to Evidence of the Ordinances. (With Brief Notes from the Book Subul-us-Salam written by Muhammad bin Ismail As-Sanani)*. pp.417.

³⁷ AL-ZUHAYLI. *Al-Fiqh al-Islami wa adillatuh*. vol.7, pp. 5738.

³⁸ Narrated by al-Nasa'i in his *Sunan*, book of *al-Qasamah*, number of the *hadith*: 4770.

In cases of injuries for which there is no fixed amount of *diyyah* mentioned in the Sunnah, the victim is entitled to compensation known as *Hukumat al-'adl*. This is an amount of money to be determined by the judge assisted by the experts and paid to the victim for the loss suffered.³⁹

MURDERING AN UNBORN CHILD OR ABORTION

Basically, the law concerning murdering an unborn child can be divided into two categories as follows:

- a. If the fetus is killed before birth inside the womb or comes out stillborn at the time of parturition, the compensation thus incurred shall be an amount equal to the price of a male or female slave.⁴⁰
- b. If an infant is killed after birth, the compensation payable shall be the price of a hundred camels. This is the view of the Hanafi, Hanbali and the more proper opinion of the Shafi'i schools. In the view of the Maliki school, however, *qisas* is incurred in cases where an action most likely causes the death of the infant like beating the stomach or back. Otherwise, *diyyah* of the price of a hundred camels shall be payable.⁴¹

TA'ZIR (DISCRETIONARY PUNISHMENT)

Ta'zir is defined as "discretionary punishment to be imposed for transgression against Allah or against an individual for which neither fixed punishment nor penance (*kaffarah*) is applied".⁴²

In light of the above discussion, it is appropriate to conclude that the classification of punishment in Islamic law is based on the rights of Allah and the rights of individual. *Hudud* is classified under the rights of Allah, whereas *qisas* and *ta'zir* are classified under the rights of individual. In this sense, al-Kasani, a Hanafites jurist stipulates that: "All the *hudud* punishments are pure rights belonging to Allah because they are promulgated for the protection of the whole society against crimes which affect its well being. They are, therefore,

³⁹ AL-ZUHAYLI. *Al-Fiqh al-Islami wa adillatuh*. vol.7, pp. 5758.

⁴⁰ Narrated by al-Bukhari in his *Sahih*, book of *al-Diyyat*, number of the *hadith*: 6399.

⁴¹ AL-ZUHAYLI. *Al-Fiqh al-Islami wa adillatuh*. vol.7, pp. 5775

⁴² EL-AWA. *Punishment in Islamic Law*. p. 97. See also 'AWDAH. *Al-Tashri' al-Jina'i al-Islami muqaranan bi al-Qanun al-Wad'i*. vol. 1, pp.126-127.

determined as the rights of Allah to ensure enforcement. No human intervention is allowed to forgive them or minimize them in any way.”⁴³

A quite similar statement is made by another Hanafites jurist, known as Ibn ‘Abidin, regarding this issue. He says: “The cause of describing the *hudud* as rights belonging to Allah is because they are promulgated for the protection of the whole society (even though the victim may be an individual) such as the protection of lineage, property, mind, honour and the reputation of others”.⁴⁴

In light of these statements given by al-Kasani and Ibn ‘Abidin, it is possible to say that the main reason why *hudud* is classified under the right of Allah is to guarantee the welfare of society, its stability and the attainment of a rule of law in accordance with the protection of the ultimate principles or purposes of the Islamic law. These are what have been called the *Maqasid al-Shari’ah*. They are interests preserved and protected by Islamic law, namely: religion, life, lineage, property and intellect.⁴⁵

Furthermore, the classification in Islamic criminal law of the right of Allah and the right of the individual makes a great difference in practice. The differences are:

- a) After apprehension and conviction, the punishment for an offence against the right of Allah, such as *hudud* crimes, cannot be commuted or pardoned either by the judge, the political authority or the victim of the crime.⁴⁶ It is related in the books of al-Bukhari and Muslim on the authority of ‘A’ishah that the Quraysh tribe was very much concerned with the case of the woman of Bani Makhzum who had stolen something. Some of them asked: “Who may speak in her favour to the Messenger of Allah?” Others said: “Who would dare do this but Usamah ibn Zayd?” Usamah then went to the Messenger of Allah and implored him not to cut off her hand because she belonged to a noble family, and her family would be dishonoured in consequence. The Prophet (s.a.w) replied: “O Usamah, how dare you intercede to suspend a penalty imposed by Allah? The children of Israel were destroyed because when the most noble of

⁴³ AL-KASANI. *Bada’i’ al-Sana’i’*. vol. 7, pp.56.

⁴⁴ IBN ‘ABIDIN, Muhammad Amin. *Hashiyat Radd al-Mukhtar ‘ala al-Durr al-Mukhtar Ibn ‘Abidin*. 2nd Edition. Beirut: Dar al-Fikr, 1386H, vol.4, pp.3.

⁴⁵ See HAJI HASSAN. *Studies on the Principles and Theory of Maqasid al-shari’ah (The Principles and Aims of Islamic Laws) in the Sunni Schools with Special Reference to Their Applications to Malaysian Law*. pp.26-30.

⁴⁶ NYAZEE. *Theories of Islamic Law*. pp. 119.

them stole, they forgave him; and when the weak or humble amongst them stole, they executed the penalty on him. By Whom in Whose hand is the life of Muhammad, if Fatimah, the daughter of Muhammad steals, I would cut off her hand.⁴⁷

This story has great significance: the most important families of the Quraysh Tribe were two: Bani Makhzum and Bani ‘Abd Manaf. When this woman deserved to have her hand cut off because she had been a thief, the Prophet s.a.w. did not forgive her although she belonged to one of two greatest families of the tribe and in spite of the fact that Usamah ibn Zayd, who was very dear to the Prophet (s.a.w) interceded in her favour. Furthermore, the Prophet (s.a.w) became angry and blamed Usamah ibn Zayd for having intervened in a matter in which intervention is forbidden by Allah, that is, intervention with a view to suspending a penalty imposed by Allah.

In the *Muwatta’*, Malik ibn Anas has related that a number of men took hold of a thief and were going with him to the third Caliph Uthman ibn ‘Affan. Al- Zubayr ibn al-‘Awwam met them and tried to intercede in his favour. The men said: “When we take him to Uthman, you may then make your intercession in the presence of the Caliph”. Al-Zubayr said: “No, if the cases requiring such penalties are brought before the ruler, no intercession may be offered, otherwise may Allah damn the intercessor and the man who accepts intercession.”⁴⁸

Conversely, the punishments for an offence against the right of an individual can be commuted and pardoned either before conviction or after it. Here appears the uniqueness of *qisas* in which the victim or his family has the options of insisting upon the punishment, accepting monetary recompense, or forgiving the offender, which can even avert capital punishment. This leaves the door open to compassion and forgiveness.⁴⁹

- b) Doubt (*shubhah*) in the right of Allah has the effect of waiving *hudud* and *qisas* punishments, but it does not have the same effect in *ta‘zir*.⁵⁰ The Prophet (s.a.w) said: “Avert the *hudud* punishments from the Muslims as

⁴⁷ Narrated by Al-Bukhari in his *Sahih*, book of *al-Hudud*, number of *hadith*: 6290. Narrated by Muslim in his *Sahih*, book of *al-Hudud*, number of *hadith*: 3196.

⁴⁸ Narrated by Malik bin Anas in his *Muwatta’*, book of *al-Hudud*, number of *hadith*: 1317.

⁴⁹ DOI. *Shari’ah: The Islamic Law*. pp. 221

⁵⁰ NYAZEE. *Theories of Islamic Law*. pp. 119.

much as you can. If you find any way out for a person, let him go. That is because it is better for the judge to err in forgiveness rather than to err in punishment".⁵¹ What is meant by doubt here is doubt in the mind of the judge as to whether the crime has been proved beyond doubt or a doubt in the mind of the accused at the time of the commission of the act on the basis of conflicting opinions about the provision or because of a particular set of facts. For example, in the case of theft (*sariqah*), when someone steals the public property (*bayt al-mal*), or a father takes away a son's property or a wife takes her husband's property. In these cases, there is doubtful ownership (*shubhat al-milk*) because their acts occurred under the impression that they were part owner of the stolen property. Therefore, they cannot be punished by the *hadd* punishment and only *ta'zir* will apply.⁵²

- c) There are difficulties of inflicting punishments which are the right of Allah, that is, the *hudud*. For example, in the testimony in cases of *zina*, the evidence required is the oral testimony of four adult male Muslims who have seen the actual act of sexual intercourse and female testimony is not accepted in these cases or in the case of any *hadd* offence. The witnesses must be able to state where and when the offence took place, and must be able to identify the parties to the act. Moreover, punishment for *qadhif* is inflicted on the above witnesses if there are fewer than four of them. Accordingly, if four people witnessed the act but only three of them are prepared to give testimony before the court, they can be convicted of the offence of *qadhif* and punished accordingly, regardless of the reason which prevented the fourth from giving his testimony.⁵³

Some may say that *hudud* punishments look barbarous, very severe and inhumane. Therefore, the application of *hudud* punishments in a modern society is backward and uncivilized. But, as already mentioned, it is very difficult, if not impossible, to inflict these punishments. Any single doubt regarding the crime or the offender and any unfulfilled requirement can avert a *hadd* punishment and accordingly it will be replaced by a *ta'zir* punishment. Thus, the severity of these punishments actually is more likely to act as a warning in order to prevent people from committing such offences rather than actually punishing them. In this sense, Islamic criminal law can facilitate the planning of a safe city by providing a safe environment where people are afraid enough to

⁵¹ Narrated by al-Bukhari in his *Sahih*, book of *al-Hudud*, number of the *hadith*: 1344.

⁵² DOI. *Shari'ah: The Islamic Law*. pp.257.

⁵³ NYAZEE. *Theories of Islamic Law*. pp. 121.

commit offences because of the severity-look of the punishments, moreover, when the execution of the punishment is done in front of the public.

Despite many strategies and measures done in preventing crimes as mentioned above, they are not efficient enough if they are not accompanied by efficient law. Thus, this paper suggests that an efficient law must be codified to facilitate the building of a safe city. This can be done by Islamisation of current Malaysian criminal laws. This is because it is not wise to codify Islamic criminal law separately from the current Malaysian criminal laws. Rather, it is better to codify Islamic criminal law in this country by the inner Islamisation of current Malaysian criminal laws themselves, especially the Penal Code. People would not find it hard to accept this approach because they are already familiar with current civil laws such as the Penal Code. This indeed could be done by amending the penalty, in particular the maximum penalty. For example, the maximum penalty for theft in the Penal Code is seven years imprisonment. Thus, to Islamize the Penal Code, the maximum penalty for such a crime would be upgraded to the cutting off of part of a limb.

However, it is very difficult, if not impossible, to inflict this verdict. Any single doubt regarding the crime or the offender and any unfulfilled requirement can avert this verdict, and accordingly it will be downgraded to *ta'zir* punishment i.e. imprisonment which may extend to seven years. After all, it should be noted here that the maximum penalty in Malaysian Criminal law is not inflicted rashly, nor is the *hadd*.

CONCLUSION

Lessons learnt from the Islamic criminal law that can be adapted in planning practice are the planning of a safe city in accordance with the level of seriousness of the crime as revealed in the *hudud* category of crimes. The crimes under *hudud* must be paid serious attention in preventing them from happening in concurrent with crimes categorized under *qisas*. In educating the public, execution of punishment in front of the public is among the ways to create awareness. Other than that, the categorization of crimes according to the rights of Allah and rights of public may create a sense of responsibility and a caring society because any wrongdoings are against those rights and shall be punished. By adhering to all these principles and approaches, it is hoped that the safe city can be established where the public is not only equipped with physical elements of safety but also spiritual elements by the realization of Islamic criminal law. In this regard, the safe city in Islam is a city which embeds all the Islamic teachings of safety in its planning and practice. Looking at current conditions, tremendous efforts have been put towards the planning of

a safe city, but only in terms of physical provision, and little on spiritual aspects. However, the current definition of a safe city is not contradictory to the Islamic definition, it just needs a further extension of the spiritual dimension as propagated in the Islamic criminal law i.e. *fiqh al-jinayat*.

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URBAN CRIME AND SAFE NEIGHBOURHOODS: COMMUNITY PERSPECTIVES

Khairiah Talha¹

*EASTERN REGIONAL ORGANIZATION FOR PLANNING
AND HUMAN SETTLEMENTS*

Abstract

In a globally competitive world where nations look to greater economic investments for prosperity, the level and perceptions of safety within a place affects the level of investments. A community is “an interacting population of various kinds of individuals in a common location or “a group of people with a common characteristic or interest living together within a larger society” Community as a concept can be interpreted as a sense of belonging, a way of life, and diversity with a common purpose. The degree of neighbourhood safety (real or perceived) is a major determinant of how people live.

In a 2004 survey results of community perception on the six top issues of Malaysia then, 42% of those surveyed perceived that crime and public safety was the main issue of concern. This was followed by social and moral problems (12 percent and 9 percent respectively).

According to the United Nations Survey of Crime Trends and Operations of Criminal Justice Systems, Malaysia ranks 50 out of 60 countries in terms of total crime per capita. Tackling issues of safety is not just about crime and security. Efforts must be made to generate sustainable neighbourhoods and the communities within them. Creating safe, clean environments, providing quality education for children, maintaining inter-generational ties, the reciprocal exchange of information and services among families, and the shared willingness to intervene on behalf of local safety, all produce a social good that yields positive benefit to all residents – especially children and women. Inevitably this means we have to come to terms with constructive opportunities for conflict resolution in the production of social goods through community participation. It is only by engaging the community in the social affairs of their neighbourhood and eventually the city that problems of safety can be tackled. The paper also looks at the UN’s Safe Cities Programme.

Keywords: Sustainable Community, Livable, Safe Cities Programme.

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INTRODUCTION

Personal and family safety form one of the basic needs of man, besides food and shelter. Since the beginning of time, Man sought personal safety from the extremes, in caves, and eventually behind barricades and castle walls. The need for safety is so fundamental no matter what civilization, age, race or religion. In today's world where almost 70% of the world's population now live in cities, the issue of safety has become more complicated in that the elements affecting safety has become more complex than ever before. Having a safe environment is so much a factor of the quality of life in cities.

The lack of safety wrecks lives and has a high economic cost. In fact, in a globally competitive world where nations look to greater economic investments for prosperity, the level and perceptions of safety within a place affects the level of investments. In cities internationally recognized and designated as "liveable", the level of crime is almost negligible. When a city is perceived as safe, investors willingly come to set up their businesses.

Unfortunately, increasing levels of crime and insecurity in urban neighbourhoods are a world-wide phenomenon. This is reflected in the physical development of city neighbourhoods and in the lifestyles of those who live there. Fear of violence and crime has discouraged people from using public transport, streets and public spaces. It discourages children from using playgrounds and women and older people from sitting in public places. Residential and commercial buildings are increasingly fortified and closed-circuit television cameras are beginning to watch our every move.

COMMUNITY PERCEPTIONS

What is community? A community is "an interacting population of various kinds of individuals in a common location or "a group of people with a common characteristic or interest living together within a larger society" Community as a concept can be interpreted as a sense of belonging, a way of life, and diversity with a common purpose. A community within a shared common space makes a neighbourhood. Thus, when you ask yourself or a community on their vision of what safety means to them, common responses will be as follows:

- a. Being able to walk without fear.
- b. Places for people to work, play and live without fear.
- c. Children being able to walk outside at night.
- d. Not being afraid of the strangers one meets on the street.

- e. Walking alone and feeling at ease.
- f. The ability to walk around the streets without fear or concern.
- g. Walking without fear of danger to person or property.
- h. Go anywhere in the city without feeling fear.
- i. No fear of crime.
- j. A city where individuals feel comfortable within an eclectic mix of different physical designs and social interactions.
- k. A place for families to grow and prosper without fear.
- l. Pride in community - quality of life.
- m. A feeling of security.
- n. Enjoying every neighbourhood as if it were my neighbourhood.
- o. Homes and schools without bars on windows and doors;
- p. A city without CCTVs

The degree of neighbourhood safety (real or perceived) is a major determinant of how people live. It affects how they use public spaces and transportation, as well as how safe they feel inside their own home. It determines the degree of fear and trepidation they feel on stepping outside their home.

In Malaysia and in many developed nations, safety has become a privilege. Those who can afford it, pay for safety by living within gated communities. However, many urban sociologists bemoan the growing popularity of gated communities. They claim that gated communities are exclusionary, elitist and antisocial; in particular, they set off a single group of society, namely, the wealthy, from the rest of the urban society.

THE MALAYSIAN SCENARIO

In a 2004 survey results of community perception on the six top issues of the country then, 42% of those surveyed perceived that crime and public safety was the main issue of concern. This was followed by social and moral problems, 12 percent and 9 percent respectively. The other top issues are domestic politics (7%), unemployment (4%) and education (4%). See Figure 1.

The Royal Malaysia Police (RMP) classify crime by two major indices — crimes against property and violent crimes. The first category includes crimes such as snatch thefts, break-ins and the theft of vehicles. In fact, crimes related to property account for about 90% of all crimes reported every year. Violent crimes, on the other hand, include murder, attempted murder, and robbery with or without firearms, rape and causing injury to victims. Although attracting the greatest attention of the public and the media, it contributes to only 10 % of all crimes committed.

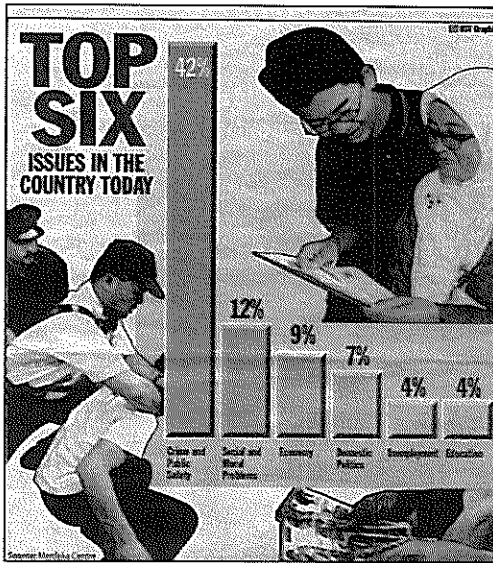


Figure 1: The six top issues in Malaysia
(Source: *New Straits Times*, 2004)

It has also been reported that in the 30-year period, from 1973— 2003, the police crime index has registered an increase in the number of reported cases of crime. The total reported crimes rose from 40,053 cases in 1973 to 156,315 cases in 2003; this represents a 230% increase over the past 30 years. The police report also highlighted the fact that statistically there is a close correlation in the number of crimes reported to that of the population growth during the last 30 years. This averages to about 3,875 cases per year or about 11 cases a day. It is also a fact that over the 30 years period, violent crimes have increased from 3,192 cases to 22,790 cases. The rate of increase of violent crimes was about 2.7 times higher than for all crimes taken together. In the case of crimes related to property, it is the most frequently committed crimes. Vehicle thefts (cars, lorries, vans and motorcycles) accounted for 41% of the total crimes reported and 48% of crimes involving property. Another 10% was made up of robberies (excluding house breaking and violent theft). House breaking constituted 16% of the total while simple thefts and snatch thefts were 27%. Taken together, these categories alone accounted for about 94% of total crimes reported in the country.

Snatch thefts constitute 12% of the overall crimes involving property. Although snatch thefts can occur almost anywhere, they frequently take place in places like bus stops, commuter stations, along main roads and housing estates. The thief usually rides on a motorcycle, often with an accomplice. According to

police reports, they are usually drug addicts stealing to support their addiction. Snatch thefts are also becoming frequent because there is no separation between pedestrian walkways and main roads. The general lack of care by pedestrians regarding their belongings and the reluctance of members of the public to aid victims also contribute to the rising incidence of snatch thefts.

In terms of the overall crime index, the number of reported cases of all crimes in 2004, per 100,000 inhabitants, was lowest in Kelantan, Sabah, Pahang, Terengganu and Sarawak in year 2000. Not surprisingly, the highest number of cases, per 100,000 inhabitants, was in Kuala Lumpur, Selangor, Johor and Melaka. At a glance, it appears that there is a correlation between development and a higher incidence of crime. However, it may not be development *per se* that contributes to crime. Rather, rapid development causes deep divides in society; the serious socio-economic imbalance that accompanies rapid development creates a fertile breeding ground for crime. All efforts in development must therefore ensure that these divisions in society are kept to the minimum.

According to the United Nations Survey of Crime Trends and Operations of Criminal Justice Systems, Malaysia ranks 50 out of 60 countries in terms of total crime per capita. In fact the following table (Table 1) shows that in most types of crime, Malaysia is somewhere in the middle amongst the nations surveyed.

Table 1: Statistics of crime by type in Malaysia 1998-2000

Type of Crime	Amount/Description	Rank
Car Thefts	55,879	13 of 56
Car thefts per capita	2.33 per 1,000 people	16 of 55
Drug Offences	48.6 per 100,000 people	19 of 36
Murders	551	24 of 63
Murders per capita	0.023 per 1,000 people	34 of 62
Rapes	1,210	26 of 66
Rapes per Capita	0.0505 per 1,000 people	38 of 65
Total Crime	167,173	32 of 67
Total crime per capita	6.979 per 1,000 people	50 of 60

Source: Seventh United Nations Survey of Crime Trends and Operations of Criminal Justice Systems, covering the period 1998 - 2000 (United Nations Office on Drugs and Crime, Centre for International Crime Prevention); UNODC; CIA World Factbook, December 2003, Internet search, www.nationmaster.com/country/my, retrieved on 24th February, 2006

The issue of safety cannot be reduced simply to issues of crime and security. Safety policies that are merely aimed at enforcing law and order are limited and have comparatively little value. Making our urban areas safer places in which to live and work means tackling a wide range of social disorders and incivilities. It means trying to strengthen the bonds that link people to their families, to their schools or workplaces and to their communities. It means trying to give all people, especially the marginalised and dispossessed, a place and value in society. This will only be achieved with political will at all levels of government. It also needs people to be placed at the centre of the process, where they are part of the solution and not simply the problem. Safety is increasingly becoming a private rather than a public good, where wealthier people are able to purchase private security measures to protect themselves. The major victims of insecure urban environments however are poor people who live in urban areas, and it is these people who are least able to pay to protect themselves. The main measure of success, therefore, has to be whether or not the real living conditions of the urban poor and the marginalized have changed for the better.

THE NEIGHBOURHOOD, SAFETY AND SUSTAINABILITY

We must be honest and admit that in most of our cities and suburbs, there are pockets or neighbourhoods that share common economic and social characteristics. Additionally, there is considerable social inequality between neighbourhoods in terms of socioeconomic and racial segregation. There is also clear evidence on the connection of concentrated disadvantage with the geographic isolation of racial and ethnic minority groups. A number of social problems tend to come bundled together at the neighbourhood level, including, but not limited to, crime, adolescent delinquency, social and physical disorder, school dropout and child abuse. It is also a common feature that in many cities, the community has a perception of areas or neighbourhoods that are safe or otherwise.

But what is a community and why are communities important? What are sustainable communities and what role is there in the context of safe cities? Firstly, a “Community” is ‘an interacting population of various kinds of individuals in a common location’ or ‘a group of people with a common characteristic or interest living together within a larger society’. (*Merriam-Webster Collegiate Dictionary*) As a concept it can be interpreted as a sense of belonging, a way of life, and diversity with a common purpose. (*Hall & Porterfield*)

A neighbourhood is the building block of a community. (*Hall & Porterfield*). Thus, having a sustainable community within an area would make for a sustainable neighbourhood. This can be defined as a place where people would want to live and work, now and in the future. They are safe and inclusive, well planned, built and run, and offer equality of opportunity and good services for all.

But what are sustainable communities? There may be several definitions, but one that is most logical and can be accepted is that by the Office of the Deputy Prime Minister (ODPM), United Kingdom. It can be summarized that sustainable communities are those that are active, inclusive and safe, well run and environmentally sensitive, well designed and built, and is well connected. It is a thriving community, which is well served and gives fairness to everyone. As mentioned earlier. Tackling issues of safety is not just about crime and security. Efforts must be made to generate sustainable neighbourhoods and the communities within them. The sense of belonging to the society within as well as outside the neighbourhood, the end to further marginalization, the sense of family and community values are all fundamental to creating a safe city.

Thus, it is more important to think about social ways to approach social problems. Too often our policies are to tackle the issues based on statistics of crime, to reduce the number of criminals from our streets. However, creating safe, clean environments, providing quality education for children, maintaining intergenerational ties, the reciprocal exchange of information and services among families, and the shared willingness to intervene on behalf of local safety, all produce a social good that yields positive benefit to all residents – especially children and women.

The good community, at least with respect to public safety, is one that is created not through marginalization, exclusion of outsiders. Rather, the good community is one where the legitimacy of social order comes in part from the mutual engagement and negotiation among residents, mediating institutions, and agencies of law enforcement. Inevitably this means we have to come to terms with constructive opportunities for conflict resolution in the production of social goods through community participation. It is only by engaging the community in the social affairs of their neighbourhood and eventually, the city that problems of safety can be tackled.

Therefore, instead of policing the community, it may be better to introduce the community policing. Community policing emphasizes the establishment of working partnerships between the police and the community to reduce crime and enhance security. In the US for instance, most community policing efforts

have focused their attention on co-identification of problems that lie behind crime incidents (for example drug markets; disorderly bars; abandoned housing), rather than on crime only. Although sparse, there is some evidence that community-policing efforts to help residents solve local disorder and crime problems are working in many large US cities.

SAFE CITIES INITIATIVES

In recent years there has been a convergence of thinking in many countries as to the best ways forward to create safer urban neighbourhoods. It is now widely accepted that: crime prevention is not solely about physical security and design and that a range of environmental, social and economic interventions is also needed if crime problems are to be successfully tackled; successful crime prevention requires partnership between public, private and voluntary sectors; local government has the potential to affect crime and public safety through its community safety policies and practices.

It is important to consult the community and involve community representatives in developing responses to crime problems; it is vital to focus particular attention upon young people and the social, physical and educational environment in which they grow up. Ultimately, it is values such as respect, tolerance and love in relationships between and across generations and cultures that will provide the basis for a true and lasting security.

In 1998, UN-Habitat celebrated World Habitat Day with the theme “Safer Cities”. This theme was to offer communities everywhere to consider the current state of their cities and to take action to make cities safer and more livable; it also meant making our urban areas safer places in which to live and work, which means tackling a wide range of social disorders and incivilities. It means trying to strengthen the bonds that link people to their families, to their schools or workplaces and to their communities.

“TACKLING CRIME” APPROACHES TO TACKLING CRIME

There are three broad approaches to tackling neighbourhood crime. These are firstly, using the law enforcement systems, including the police, courts, prison and the probation service that are involved in deterring, catching and rehabilitating offenders. A second approach involves making crime more difficult. This consists of hardening potential targets with locks, bolts, CCTV, etc. (known as situational crime prevention). The urban planning and design

aspects of crime prevention also come within this category. This approach basically deals with alleviating the symptoms of crime rather than treating its causes and is of little use in crimes against the person.

It comprises of three main approaches - increasing the effort involved to commit a crime, increasing the risks associated with crime and reducing the rewards from committing crime. The third approach seeks to deal with the causes of crime and involves working with families and educational systems to try and reduce the strong risk factors that predispose young people to a life of crime.

Unlike the rest of Europe, the United Kingdom has placed much more emphasis on changing the physical environment than on changing the prospects of the people that live there. It is now increasingly recognised that, although common-sense planning and design of residential areas and city centres have a role to play in reducing crime and people's perception of crime, they are relatively ineffective on their own. They can only create the pre-conditions for a safer environment and are not a substitute for changing behaviour or attitudes of people. The interface between the design and management of the urban environment is however crucial and needs to be carefully considered.

Since 1990, the Safer Cities Initiative has rested on the twin pillars of Crime Prevention Through Environmental Design (CPTED) and Crime Prevention Through Social Development (CPSD). This approach involves both the practical elements of designing a safe community and a strong belief in social justice and the need to address the root causes of violence and crime in our community. However, there are four strategic objectives of the safe Cities Initiatives. These are:

- Strategic Objective 1: Building Safe Communities through Violence Prevention - focuses on individuals as members of the community and violence prevention initiatives.
- Strategic Objective 2: Building Safe Communities by Caring for the Vulnerable - identifies vulnerable groups in our community.
- Strategic Objective 3: Building Safe Communities by Creating Safe Places - focuses on the environmental plan and considers design options related to urban safety.

- Strategic Objective 4: Building Safe Communities by Sharing Successes - outlines the need to increase positive public perception through effective communication.

CRIME PREVENTION THROUGH SOCIAL DEVELOPMENT (CSPD)

Those approaches that engage with local people and generate a sense of local ownership, involvement and commitment are far more likely to succeed and to have a longer-term impact than those that are imposed on a neighbourhood. Anything can be changed by imposition in the short-term, but if the change is to endure there has to be genuine local commitment to what is being done. There is increasing recognition of the need to apply what works. In the past much unfocussed effort took place with an unknown impact on crime. Problem solving has not been the usual approach adopted by police services to tackling crime problems. It is only in the most recent years that the concept of applying known solutions to specific crime problems has become more widely used. The most effective crime prevention results normally come from dealing with the causes of crime. In order to do this, work needs to be done in co-operation with schools, families and communities.

Therefore the Safe Cities Initiatives has the following recommendations and action plan. Under Strategic Objective 1, i.e. Building Safe Communities through Violence Prevention, the main philosophy is that Safe communities are places where individuals feel a sense of belonging and security; where they care about each other and respect each other's rights and differences. Therefore, in order to build an inclusive, safe and caring community, there is a need to support community initiatives and facilitate new linkages that will address the root causes of crime through violence prevention and tackle issues facing individuals today including unemployment, sexual exploitation, poverty and violence.

The recommended plan of action:

- Violence Prevention Initiatives;
 - a) Identify and develop an inventory of current violence prevention initiatives that promotes safe and caring communities.
 - b) Establish criteria and develop a process for determining categories and levels of support for violence prevention initiatives by Safer Cities.
 - c) Select violence prevention initiatives to support, promote and possibly partner with.
 - d) Evaluate selected programs to determine their effectiveness in reducing crime and violence.

- **Facilitate New Linkages and Partnerships;**
Encourage and facilitate new and innovative linkages within Safer Cities agencies and among the wide spectrum of community stakeholders, to identify efficiencies, reduce duplication and create new ways of working collaboratively together.

Under Strategic Objective 2, that is building safe communities by caring for the vulnerable, it is essential that safe communities recognize that some groups are particularly vulnerable and that they are at greater risk of being victimized than others. Safe communities recognize the need to help victims recover and offenders rehabilitate. Effective interventions for both groups result in people being able to make positive contributions to their families and to the community. These vulnerable groups, such as those who are sexually exploited, live in poverty and/or are victims of abuse, need services and initiatives to address their needs, advocate on their behalf and empower them to work toward their own solutions.

The recommended plans of action are:

- **Victim Initiatives;**
 - a) Identify vulnerable groups in our community and existing initiatives and programs that address the needs of those vulnerable sectors.
 - b) Establish criteria and define a process for determining categories and levels of support for victim support initiatives.
 - c) Evaluate and select victim initiatives for level of support by Safer Cities.
- **Offender Initiatives;**
 - a) Identify existing initiatives that reach out to offenders in our community.
 - b) Establish criteria and define a process for determining categories and levels of support for offender-focused initiative.
 - c) Evaluate and select offender initiatives for level of support by Safer Cities.
- **Intervention Initiatives;**
 - a) Identify and develop an inventory of current intervention initiatives that promote safe and caring communities.
 - b) Establish criteria and define a process for determining categories and levels of support for intervention initiatives by Safer Cities.
 - c) Evaluate and select intervention initiatives to support.

- Facilitate New Linkages and Partnerships
 - a) Encourage and facilitate new and innovative linkages within Safer Cities agencies and among the wider spectrum of community stakeholders in the area of caring for the most vulnerable in our community

CRIME PREVENTION THROUGH ENVIRONMENTAL DESIGN

Crime Prevention Through Environmental Design (CPTED) facilitates the awareness and use of CPTED practices and principles, encouraging the use of and education in CPTED within the City Administration, corporate sector and community at large.

Good design and effective use of the built environment can assist in reducing the opportunity for crime as well as the fear of crime and perceptions of safety. City Councils must ensure that public spaces are well designed and maintained and that safety issues are a key concept in the design of the public realm.

CPTED consists of three design approaches:

1. Natural surveillance – e.g. placing windows in locations that allow intended users to see or be seen while ensuring intruders will be seen as well. This is enhanced by providing adequate lighting and landscaping that allows unobstructed views.
2. Natural access control – using doors, shrubs, fences, gates and other physical design elements to discourage access to an area by all but its intended users.
3. Territorial behaviour – e.g. sidewalks, landscaping, porches and other elements that establish the boundaries between public and private areas.

The three strategies work together to create an environment in which people feel safe to live, work, travel or visit. City Councils should draw up guidelines for the future design and construction of safe public conveniences.

Under Strategic Objective 3: Building Safe Communities by Creating Safe Places, it is the belief that safe communities provide physical environments where people of all ages can safely participate in normal, daily activities. Conscious attention to design can significantly reduce crime, encourage participation in community life and enhance community pride. Therefore, the recommended plan of action includes the following:

1. CPTED / Public Spaces;
 - a) Advocate for additional funding supports to transportation initiatives and other public infrastructure that increase safety on our streets and in the parks system.
 - b) Explore ways to support City departments as they collaborate to tackle issues of infrastructure maintenance, residential speeding, public awareness about safety at intersections and pedestrian crossings and injury prevention on streets.
 - c) Consider partnering with the NGO's and the disabled on accessibility and barrier free initiatives.
2. CPTED / Corporate and Commercial Spaces;
 - a) Encourage the development industry and business to apply CPTED principles in their commercial developments;
 - b) Foster other initiatives that promote the benefits of CPTED to employers, employees and customers.
3. CPTED / Private Spaces;
 - a) Explore ways to create and support initiatives such as *Crime Free Multi Housing Program* and promote the use of the *Neighbourhood Crime Prevention Safety Audit*.
 - b) Foster programs which educate homeowners on the values of CPTED principles in ensuring their personal and property safety
4. Pride of Place;
 - a) Lend support to business, police and youth to find solutions to graffiti problems, focusing on prevention rather than penalty.
 - b) Foster new and support ongoing initiatives that support neighbourhood pride and beautification (i.e. neighbourhood landscape competition, "gotong royong", etc.)
 - c) Encourage programs that develop a sense of caring for neighbours through helping isolated and infirmed individuals with property maintenance.
 - d) Encourage programs that proactively address litter and solid waste concerns (i.e. reuse and recycling of materials).

AGENCY COLLABORATION

No one agency can prevent crime or achieve a safe community. Coordination and cooperation is required from a wide variety of agencies and the community. Adelaide City Council continually collaborates with other agencies and

stakeholders to exchange information and to provide a coordinated response to crime and safety issues in the City. These agencies and stakeholders include:

- a. Business Groups;
- b. The community;
- c. Community groups including Resident Groups, Precinct Groups, Business Watch and Neighbourhood Watch;
- d. Department of Social Welfare and other Government organizations;
- e. Non-Government agencies; and
- f. The Police.

Crime prevention is complex. CPTED and wider crime prevention solutions are likely to be more effective if central and local government work in partnership with local communities, businesses and service organisations. The nature and scale of partnerships to promote safety from crime will vary according to local circumstances. The key partners are local authorities and the police. Other partners and their roles are suggested in the table below:

Table 2: Key Partners and roles in Developing Greater Safety

ORGANISATION	ROLE
Local authorities	<p>Local authorities are responsible for the design and use of <u>public spaces</u>. They have a key role to implement <u>CPTED</u>. In most cases it is anticipated that the local authority will initiate, lead and facilitate the partnership with the police and other groups.</p> <p>Other roles include:</p> <ul style="list-style-type: none"> • identifying community outcomes; • initiating major works in public areas; • managing public places and assets; • fulfilling responsibilities under the Local Government Act, 1976.
Police	<p>Police play a key role by:</p> <ul style="list-style-type: none"> • sharing their knowledge of criminal behaviour, types and location of crimes • providing intelligence on hot-spot areas (such as identifying trends in criminal activity) • helping with crime prevention techniques.

Other partners to consider

ORGANISATION	ROLE
Business and shopping centre owners and managers, especially local hospitality operators	<p>Often crime hot-spots are in retail, business or entertainment areas. Businesses in these areas can play a role in helping to better understand why crime is occurring and how it could be prevented.</p> <p>Some solutions may need businesses to play a more active role in crime prevention, particularly if this involves improving the design of publicly accessible places on privately-owned land.</p>
Neighbourhood Support groups, residents' associations, community boards	<p>These groups can help with:</p> <ul style="list-style-type: none"> • better understanding what is happening in the local neighbourhood from the perspective of residents; • identifying neighbourhood crime hot-spots and areas that trigger a fear of crime; • identifying options for improvement • <u>CPTED</u> safety audits.
Urban designers, planners, architects and landscape architects in the private sector	<p>Urban designers, planners, architects and landscape architects can contribute specialist knowledge to help achieve <u>CPTED</u>, both in new development and redevelopment projects.</p>
Community agencies, groups or service providers	<p>These agencies and groups can provide:</p> <ul style="list-style-type: none"> • A perspective on crime from different sectors within the community including vulnerable people (such as victims of crime, people with disabilities, young people, children, older people, women, schools and preschools). • A perspective on the effectiveness of design options.
Other organizations that could have a useful role	<ul style="list-style-type: none"> • Local hospitality operators • Car park building owners • Private developers • Transport providers • Schools

Another important strategy under the Safe Cities Initiative is objective Number 4, which is building Safe Communities by sharing successes. Safe communities recognize that positive public perception of urban safety initiatives is critical in promoting a sense of security and well-being for all citizens. Effective methods

of communication will educate and inform by celebrating success stories and sharing messages that promote community pride. Therefore, it is important that sharing of information be made and the recommended sets of actions include the following:

1. Communication;
 - a) Develop a communications plan, with key messages, specific target audiences and strategies that focus on urban safety and crime prevention and raises public and corporate awareness of Safer Cities initiatives.
 - b) Encourage media to cover good news stories and strong, effective local successes in crime prevention.
 - c) Encourage and facilitate communication and information - sharing regarding safety issues among citizens, community partners and civic departments.
 - d) Promote and encourage initiatives or programs that focus on positive, peaceful conflict resolution or mediation.

2. Education;
 - a) Enhance the profile of the safest cities in the state by promoting initiatives, including the role of Safer Cities, which contribute to urban safety and violence prevention.
 - b) Research and identify best practices that enhance urban safety and violence prevention. Choose best practices that focus on practical and meaningful indicators and outcomes, linking them to the City Council's vision
 - c) Support initiatives that encourage the sharing and dissemination of information, increase ease of access to information and move toward coordination of services.

3. Celebration/Recognition;
 - a) Establish an award program to recognize successful collaborative efforts and community initiatives in crime prevention and urban safety.
 - b) Provide recognition for successful community initiatives in crime prevention through external award programs.

CONCLUSION

Successful communities are places where people live, work and enjoy life in the knowledge that they can do so safely. Places that are safe and feel safe are vibrant and attract people, activity and investment. Therefore, safety and security are essential to successful communities. Good urban design alone cannot be expected to solve crime. However, positive planning, particularly when coordinated with other measures, can make a significant contribution to safety. Taking an integrated approach to each development, where professional disciplines and key stakeholders work together, is important. Tackling the root causes of crime is more important and the social approach to solving social issues is vital, if safety and security is to be achieved in the long term. Community partnership with the police and government agencies are therefore essential in ensuring the safety and security of our cities. Safety and security is not the realm of any one profession or agency, but the responsibility must be shared by all as good citizens of the city.

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TOWARDS A SAFE PLACE FOR CHILDREN IN TODAY'S RESIDENTIAL NEIGHBOURHOODS

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Abstract

Most Arab cities are experiencing tremendous urbanization processes and challenges. Despite the fact that Arab cities are developing fast, social factors in planning and urban design have been neglected. Many of the urban problems that Arab cities experience today result from an unbalanced approach to development, where physical development has been given priority over spiritual, cultural, and social requirements. The concern of the societal needs in urban planning and design is often intended for adults regardless of the growing number and needs of the younger population. This paper focuses on children because their needs are the least considered in planning and design of cities.

The paper motivates urban authorities, of the Arab world, to be sensitive to the needs of urban children and to find suitable tools and mechanisms to consider children in their strategic and physical planning process. Towns and cities must be made safe and children friendly. This paper discusses the various forces that influence Arab children in the wake of industrialization, urbanization, modernization, and globalization. It will specifically focus on diverse social and cultural ills that have emerged among Arab children, which are attributed to living in a stressful physical environment, one that neglects their needs and marginalizes their existence in the fabric of the developing cities. This paper will address the following questions: why are cities not planned with the needs of children in mind? What are the characteristics of cities that are positive for children? In addition, the paper calls for a more holistic approach to planning and rephrasing the role of urban planners and designers in producing spaces and places for Arab children where they will enjoy their growing cities and neighborhoods.

Keywords: Strategic Planning, Children Places, Arab Cities, Children Environment, Urban Theories.

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INTRODUCTION

Around the globe, cities are expanding at an incredible pace and the future of the developing world will be increasingly urban. In the coming years, cities will be “home” to more and more children and by the year 2025, 6 out of every 10 children will live in urban areas (UNICEF, 2007).

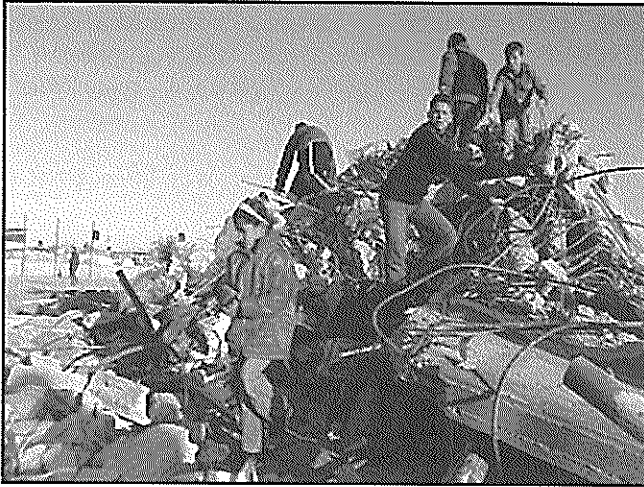


Figure 1: Children are in great need for safe playing areas.

Innovative strategies, approaches and mechanisms have to be developed and implemented to ensure creating environments that are based on cooperation at different levels, crossing national and local borders and barriers of social groups. This is a global movement for children that aim to generate new momentum and political commitment in giving priority and attention to children.

CHILDREN²: A SEARCH FOR IDENTITY

In the context of this discussion, a critical factor is whether or not children are able to function on their own within the city, or whether they are completely or relatively dependent on adults. Cultural attitudes towards children as a group vary in terms of whether they are welcomed, tolerated, or un-welcomed in

² Children generally defined as anyone under the age of 18. In term of maturity, children are those who have not yet reached full intellectual or social maturity (Simpson, 1999).

public space, and in their values as to whether the independence of children is a goal, a necessity, or something to be discouraged.

The socio-physical environment of the city in all of its aspects; how it facilitates and encourages, and how it hinders or excludes use by children is a significant factor, and is the focus of this paper. But why should children be singled out for attention here? Children are a significant proportion of the population in countries all over the world. Table 1 shows that children form almost half of the population in major selected world cities. The table also presents the extreme differences in health between selected countries as represented by infant mortality.

Table 1: Comparative statistics on the condition of children, UNICEF (2007)

Country	Percent of children in population	Infant mortality (per 1000 live births)
Ethiopia	52.5	118
Syria	50.3	25
Egypt	43.3	41
Bahrain	58	-
UAE	57	-
USA	26	7
France	23	5
Spain	18.9	6
Japan	18.8	4

Obviously, children can be more seriously affected by their living environment compared to adults because of their greater vulnerability to disease and environmental hazards. It is also important to investigate and examine the process whereby young children discover and map their surroundings, imprinting locations with memories and associations which in turn help to mould their own sense of identity (Christensen, 2002). Paying attention to what children really need often means different priorities and different standards for local authorities, decision makers, and city designers.

PLACE: PHYSICAL AND SYMBOLIC DIMENSIONS

The main question of this paper is to investigate the processes by which children can have a place in their cities. The notion of 'place' is meant in

physical and symbolic terms. Physically, are there places where children can enjoy themselves and feel safe? Symbolically, does the city through its design and planning and through the attitudes and behaviors of the adults transmit a message to children that they are welcomed, and that they are an equal part of the society in the city?

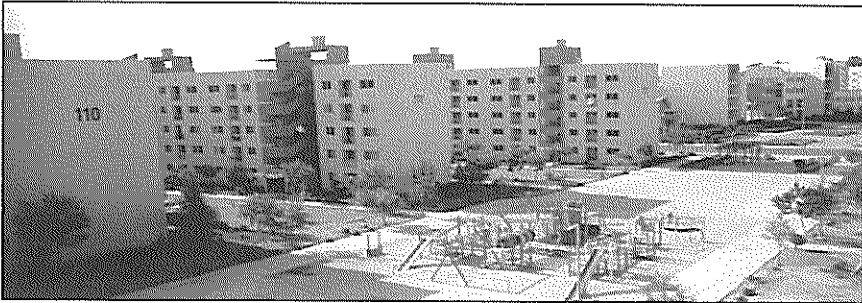


Figure 2: Ill-defined children spaces are contributing to the problem of isolated children.

The crucial question is why children are not considered properly in the process of planning and developing cities. Adults in general and politicians, planners, and city managers, in particular, too often ignore the fact that the city is relevant to the lives of children. Adults do not understand the developmental importance of various experiences, such as playing for children. For some of them, the attitude is that childhood is a passing phase, and thus need not to be considered separately (Churchman, 1999). Furthermore, children are usually not given an opportunity to say what they want and need, particularly in the public arena (Spencer & Woolley, 1998)

THE GROWTH OF CHILDREN IN ARAB PHYSICAL SETTINGS

In the last decade, most of the Arab cities and precisely Gulf cities are experiencing an unprecedented development and growth. This tremendous growth of contemporary Arab cities has its positive and negative aspects. In terms of the physical environment, the size and scale of many Arab cities have increased vastly. The assumption was that this kind of growth does make a difference in the lives of children. Eventually, cities like Dubai, Doha, Manama, Cairo, among others ended up with a vast urban development based on economical, industrial or tourism activities. Related to this is the fact that rates of car ownership and the number of cars on the roads have also significantly increased, and this clearly has implications for the safety of children and for

their ability to use the streets in various ways on their own. So Arab cities are definitely developing but not in the direction which focus on and consider children as part of the city's inhabitants and dwellers.

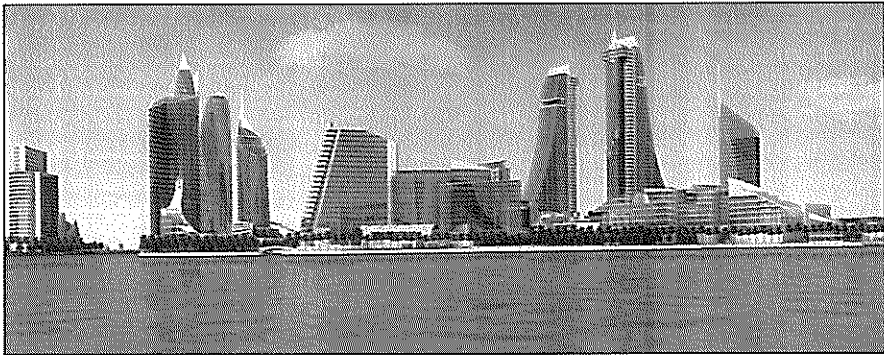


Figure 3: Large scale urban development in contemporary Arab cities, the case of Bahrain.

Arab cities are competing today to create the largest, the tallest and the biggest physical settlements and environments. Examples like Bahrain's financial harbor, or Qatar's water front development, or Dubai's tower are evidences of these cities' growth scale.

The growth of cities and the mechanization of transport raise fears about the safety of children³, particularly those children who play in the streets. Cahill (1990) argued that because of this virtual banishment of the young from many public places, public accommodations were seldom designed with them in mind. Among other things, water fountains, toilets, and public telephones were and are still built too high for young children to reach. Once again, although children may also be pedestrians, meet others, rest and eat in the street, their main activity is play and this use, as distinct from other uses, must be designed into the street to meet their needs (Simpson, 1999).

PLANNING, URBAN GROWTH AND MANAGING URBAN ILLS

Discussion on the rising social problems related to improper physical planning lead to the necessity of a more holistic approach to urban planning and to more

³ According to World Health Organization (WHO) reports, 180 thousands child under the age of 15 killed every year due to road accidents. The majority of the victims (96%) are from underdeveloped and developing countries.

sensitivity towards the younger generation in urban spaces. Barnard (1980) acknowledges that children should be able to share all that cities have to offer, but too often cities are designed as worlds for adults by adults. The growth of cities and the mechanization of transport raise fears about the safety of children, particularly those children who walk to school or who play in the streets. This further reinforced the segregation of children, forcing them into schools, home, and playgrounds (if available). This justifies the statement that many public places were seldom designed with children in mind.

Children/teenagers, bored with the stressful living conditions, resort to spending their time with friends, loitering at nearby shopping complexes, internet cafes, and computer games arcades. This exposes them to various unhealthy activities and influences, in addition to minimizing their chances to enjoy the outdoors, fresh air, natural daylight and greeneries. As a consequence, cases of child-abuse, runaways, drug abuse, school dropouts, vandalism, gangsterism and other forms of social problems are on the rise.



Figure 4: Arab children resorting to games arcades in shopping malls lead to more isolation and individualistic attitudes.

Contrary to those living in rural areas, Arab children in urban areas are more isolated, and individualistic. Even with the availability of social gathering points and appropriate public spaces, like community parks, more than 80% of the respondents of a field survey indicated that they never bring their children to nearby parks. Instead they prefer to bring their children to shopping complexes and mega malls in the city.

URBAN CHILDREN AND THE PHYSICAL ENVIRONMENT

Children need a supportive physical environment to contribute to their optimal development. It is also true that children have some particular developmental needs that call for attention, such as the need for play. They can also be far more seriously affected by their living environments than adults are because of their greater vulnerability to disease and environmental hazards. For urban children in particular, the physical environment can present major problems, undermining their well-being and their prospects for the future. Some basic principles and guidelines need to be formulated and provided for local authorities to consider as they work to make their cities better places for children.



Figure 5: The suffering of children due to deteriorated urban conditions

Simpson (1999) suggests that one can find some instances of acceptance of the idea that children should be involved in the design of their urban environment. He further reminds that in urban planning the needs of children do not always coincide with those of adults. In this sense, a good approach that is worth mentioning here is the Japanese practice of “*Machizukuri*” (literally, ‘creating city’) where local people, including children, take part and play their role in planning their living environment.

THE CONCEPT OF PLAY

Children will play anywhere and with anything. It is the single most important activity in childhood that leads to both mental and physical development, and which gives satisfaction to the child if allowed to happen in an appropriate manner, at the appropriate time and in appropriate surroundings. (Friedberg, 1970) All the things that children do purely for joy are rightly called play, which is a constant happening and act of creation in the mind or in practice. Through the act of playing, there is a simultaneous and continuous two-way action between the child and his or her environment, with the environment providing the nourishment, and the child deciding what to digest from it. (Dattner, 1969) The outcome of this digestive process is specific to the unique personality of the child. Thus each child adds to the diversity of the environment and each child contributes to the total amount of nourishment available to the rest.

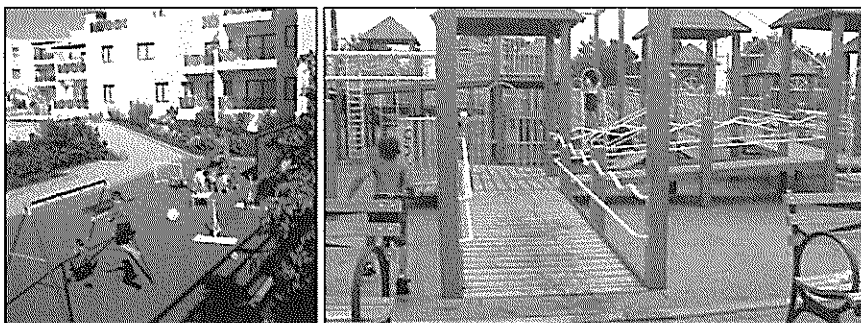


Figure 6: Protected, supervised and equipped children spaces are urgently required within livable residential neighborhoods.

Through play, children develop gross motor skills (physical mobility and muscle control) and fine motor skills such as eye-hand coordination - a critical precursor to reading and writing skills. Equally important, play helps makes learning fun! Play fuels children's imagination and sparks creativity, making the learning journey pleasurable and joyous. For many years, early childhood researchers have studied the role of play in the growth and development of children. They have found that "constructive play," like food, love, care and hope, is an essential building block for children - a critical part of the foundation children need to lead healthy, happy and productive lives. In order to create appropriate behavioral settings for play, the built environment must provide the child ample opportunities to create different kinds of secure territories for play as well as for active games. (Berne, 1964) In an appropriate play territory, children have the opportunity to digest their experience because

the environment offers appropriate nourishment and is as familiar and defensible as the home range (Dattner, 1969).

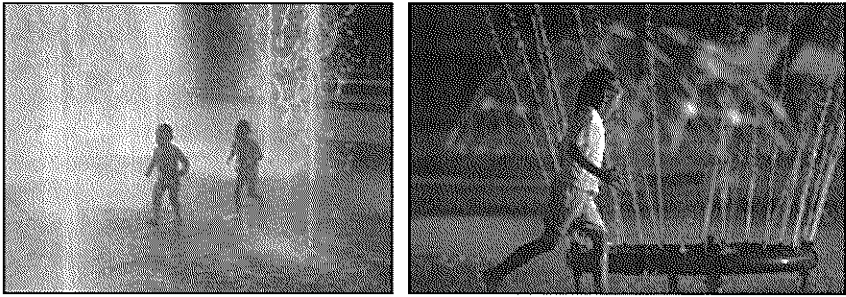


Figure 7: Regulated water elements can serve as focal points provoking the children desire to explore and also it helps in giving special character to places.

Children's need to play is a crucial part of their psychological and physical balance. It is often assumed that playgrounds are the best way to meet children's play needs. But playgrounds usually provide a limited range of possibilities (Hart, 2002). Play is something that needs to be available to children all day long, not just for a special event. Fortunately, even the poorest environments can be rich and stimulating places where children can play, provided they are safe.

TODAY'S PLAY LANDSCAPE

Children have more playtime choices today than ever before. There are classic toys, "high-tech interactive" toys, board games, organized sports and activities, video games, computer games, the internet and cable TV remotes that encourage channel surfing as a playtime activity. Unfortunately, in some cases these toys and media expose children to violent themes and contents. And in some cases, the media tend to encourage children to spend a considerable amount of time playing indoors, often by themselves - and often without the benefit of parental supervision as more parents work full-time today. With a more violent society in general today, playing outdoors unsupervised has nearly fallen by the wayside, especially for young children. In addition to missing out on valuable playtime experiences, limited outdoor play affects children's physical well-being. Experts believe that children do not get enough exercise today and this is cited as a leading factor in the rise of childhood obesity.

STREETS AS A PLAYGROUND

A more recent observation of children's use of neighborhood streets in Arab cities describes the many possibilities for play that the street provides for slightly older children. There are piles of sand for digging in, hard surfaces for football and bicycles, building entrances to hide in, flights of stairs and retaining walls to climb. Children are observed jumping, climbing, skating, sliding, running, chasing, sitting and watching. Because alleyways are too narrow for cars, children could move freely back and forth between households, finding other children to play with, visiting local shops, watching people go about their business. On the other hand, not all urban areas in our contemporary Arab cities have streets that are safe. These observations may be overlooking the piles of waste and open drains that can make be major hazards to the health of young children.

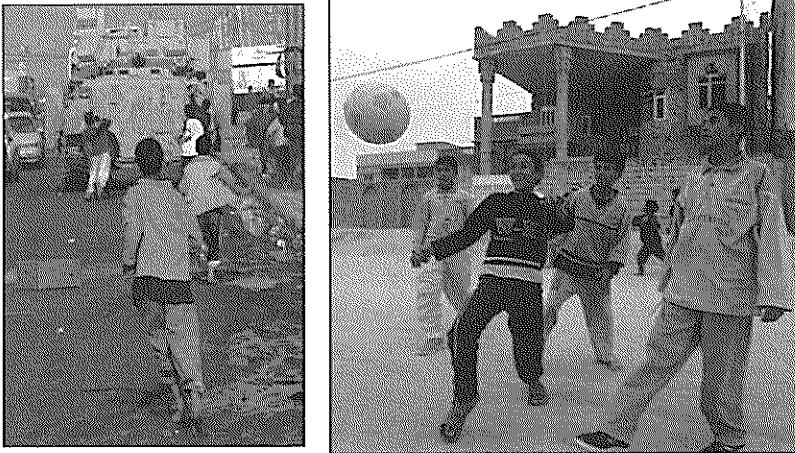


Figure 8: Street as a play ground even in the most dangerous urban zones, the case the occupied territories in Palestine & Iraq.

When a new housing area is constructed or an old area is upgraded, the potential for play should always be considered. Measures that slow traffic, or eliminate it from some residential streets, can have dramatic effects. Both Britain and the Netherlands have some excellent examples of residential streets where children's need for play is given priority in various ways over the needs of cars (UNICEF, 2000).

BETWEEN FENCES: LIVING AND PLAYING IN A CONTEMPORARY CITY

Most of the published research on the topic of children's outdoor play that has been conducted in many countries (Alexander, 1977; Gehl, 1996; Freeman, 1995; Moore, 1989; Watkins, 1980; Churchman, 1999) have shown that the environmental characteristics important for outdoor playing spaces can be summarized as follows:

- Spaces are close to home and close to entrances that are used by adults.
- Densities that allow children to find many playmates within walking distance.
- Easy accessibility to spaces, both visually and physically.
- Proximity to other activities, particularly those of adults.
- Having sufficient open space to allow children to undertake activities like ball games, bicycle-riding etc.
- Accommodating the interests and abilities of different children's ages, gender, and cultural/social backgrounds.
- Providing play equipments appropriate for different ages and different activities. In addition, these equipments should offer varying levels of challenge.
- Providing flat and hard-surface areas that fit most of the activities that children engage in, in addition to natural areas.
- The spaces should include elements that are responsive to children's actions.
- Spaces are safe in terms of traffic, ground surfaces, equipments and also safety from adults.
- Spaces should be comfortable climatically for as much of the year as possible.
- A consideration should be directed towards adults, both those who may be supervising the children, and those who are living close to the play areas.

According to the findings of the above mentioned published work, these characteristics are to a large extent present in the streets of neighborhoods and small towns, rather than in the local formally provided playgrounds. In addition, it cannot be achieved in the form of regular playgrounds, which are the most common solution proposed by planners and urban designers (adults). Rather they require all of the outdoor spaces of the residential environment be planned and designed in such a way that children can enjoy the act of play in them. In this view, playgrounds are only one part of this system of open spaces for children.

CHILDREN'S PARTICIPATION IN CITY DEVELOPMENT PROCESS

What is lacking in the city, a fault inherent in the planning process itself, is respect and an understanding of the actual needs and perceptions of the children for whom facilities are designed. Cities become virtually unworkable when planned for a few specific phases of life. As social equity is one of the key issues in creating the public realm, the voice of children, the most vulnerable section of society, must be heard alongside with the other sections.

Giving voice to children and young people's experience of place should be seen as a crucial phase in the process of community development. As Percy-Smith (1999), has argued children's participation in local decision-making constructs a major challenge for authorities and local governances. The value of supporting and evaluating children's participation in the development process needs to be examined. A series of fundamental questions need to be addressed; such as what happens when children participate in community development?, what are their own beliefs and attitudes about their participation?, how can organizations know that participatory processes are in fact in the best interests of the children themselves and the settings of which they are a part?, and how can governments and organizations effectively support the most beneficial forms of participation?

Children should have a say in the kind of environments in which they want to live, learn and play. They have a dynamic vocabulary of metaphors through which they can transform and ascribe meaning to mundane everyday objects. This realm of metamorphic operations needs to be explored in order to generate truly child-friendly places. Children have a world of their own and it is often difficult for adults to match the strength of their imagination. If this is introduced in the design and planning process, it will address the physical structure of community planning as well as those aspects affording spontaneous human support. This is because children perceive and use the environment as a direct outcome of their actual needs and way of life without self-consciousness.

In fact, as Bratlett (2002) has argued, projects from around the world, which have drawn on children's participation in decision-making about their neighborhood surroundings, have indicated how seriously they respond to the opportunity to offer their views. Their suggestions are usually well-considered and insightful, often pointing to issues that adults might overlook or dismiss, but which are nonetheless important. The marginalization of children and young people in the process of planning and designing their neighborhoods has negative implications on their sense of citizenship and belonging. There is no better way for children to learn about the responsibilities of citizenship and to gain a sense of their own capacity to contribute than by helping to shape the

environments that they use every day and that they depend on for their own well-being (Hart, 1997).

CHILDREN AND SUPPORTIVE NEIGHBOURHOODS

As children grow older and become more competent, they are naturally drawn to move further from home and to rely increasingly on their neighborhoods for companionship, stimulation and experience. A good neighborhood enhances development on every front by providing a richness of settings, relationships, and opportunities that can engage children’s minds, enlarge their social world and contribute to their skills, understanding and developing identity. A good neighborhood is one that makes it inviting and possible for children to move safely into this larger, more complex world and that supports their development as contributing citizens.

It is a place where people of all ages can interact with one another, where groups of friends can gather to talk and socialize, where children and young people can move about freely and safely, where there are some shared values and goals that include every one, and where it is possible for a community to enjoy the activities and rituals that define it. By contrast, neighborhoods that leave children and young people feeling alienated and unsupported are those where they are socially excluded, or geographically isolated from opportunities; where they lack transportation; where they are bored, where they are fearful of harassment and crime; where traffic dominates, and where there is a general sense of neglect. As Chawla (2002) has emphasized, children are quick to point to disrepair and lack of basic services, and to see these physical conditions as a humiliating reflection of their own worth.

CREATING CHILD-FRIENDLY CITIES

Principles, Patterns and Guidelines for Child-Friendly Cities

Principles	Patterns And Guidelines
<p>Security, Safety, and Supervision.</p>	<ul style="list-style-type: none"> • Safe contained spaces close to home. • Spaces close to adults who can keep a watchful eye as they work or socialize. • Protection from traffic. • Enhance public awareness programmes about children’s safety and need for protection. • Lighting for places where children’s evening play.

<p>Diversity and Opportunities</p>	<ul style="list-style-type: none"> • Engage children in the planning and design process. • Easy contact with other children. • Spaces to allow running and chasing. • A flexible environment that can be shaped and changed by children. • Allow children with disabilities to be with other children. • Places to hide “Secret Places”. • Age appropriate challenge without danger. • Green and Natural Environment.
<p>Features of Playgrounds</p>	<ul style="list-style-type: none"> • Many small spaces, close to where children live, are better than one large far place. • Accessible to all ages and special needs. • Accommodating adults to sit and socialize. • Using trees as playing centers. • Away from traffic and pollutants.
<p>Children's Mobility</p>	<ul style="list-style-type: none"> • Create cycle tracks. • Frequent and safe crossings. • Install speed pumps, and reduce speed limits. • Make sidewalks wider. • The presence of public transportation.
<p>Public Spaces and Streets</p>	<ul style="list-style-type: none"> • Network of squares, parks and natural areas. • Community places to meet and socialize. • Increase pedestrian areas and paths. • Integrate children and young people spaces with the life of their communities. • Connected play areas. • Allowing children to explore the city via safe streets • Streets as an educational experience.

CONCLUSION

- Many of the urban problems that Arab cities experience today result from an unbalanced approach to development, where physical development has been given priority compared to social development.
- Urban authorities need to be sensitive to the needs of urban children and they need to find suitable tools and mechanisms to involve children in designing

their environment. Towns and cities must be made safe and children friendly.

- Children today are smarter than before. They are more independent, isolated, more demanding, and more individualistic. Through good urban design, urban change can be made to respond to the needs of less advantaged groups, by distributing benefits through neighborhoods that are made accessible, satisfying and empowering to users. These should be well connected to the rest of the city and provide a safe and educative environment for all children and adolescents.
- The roles of urban planning have evolved from laying out basic facilities, zoning specific land uses, future plans for towns and cities into specific designs of urban spaces for a more sustainable environment. The paper illustrates how physical environment can influence the social upbringing of urban dwellers, especially the younger generation.
- Opportunities for play are very important for every child but special efforts must be made to ensure access to an evolving environment for children with disabilities, of whatever kind.

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ROLE OF LAND USE PLANNING IN IMPROVING PUBLIC HEALTH: WAY FORWARD FOR MALAYSIA

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Abstract

It is an undeniable fact that land use planning regulatory framework and concern for improving living and built environment originated from the desire to improve public health. Planning issues remained at the root of some of the most intractable public health problems, including the declining rates of physical activity resulting from automobile-dependent environments or the isolation of poor and minority communities in areas plagued by environmental pollutants, violent crime, and high rates of disease. Land use, community design, and transportation systems substantially impact local air quality, water quality and supply, traffic safety, physical activity and exposure to contaminated industries. Mental health and quality of life issues also are profoundly affected by factors ranging from the stress and difficulties of commuting to the presence or absence of natural areas and green spaces. There is a general realization that health specialists or planning departments cannot afford to operate in isolation from one another. This article intends to examine the important role that can be assumed by the members of local health department and other public health professionals in protecting local environmental health and improving the health of the communities through land use planning.

Keywords: Land use planning, Public health, Legal framework, Local authorities, Malaysian land planning system

INTRODUCTION

The close link between land use and environmental planning to human health is undeniable. Indiscriminate land use development activities can lead to environmental degradation and subsequently adverse impact on public health. The built environment significantly affects the public's health. This was most

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obvious when infectious disease was the primary public health threat during the industrial revolution; unsanitary conditions and overcrowded urban areas facilitated the spread of infection. However, even today in the age of chronic diseases there remains an important connection between population health and the built environment. Physical spaces can expose people to toxins or pollutants and influence lifestyles that contribute to diabetes, coronary vascular disease, and asthma. Public health advocates can help shape the design of cities and suburbs in ways that improve public health, but to do so effectively they need to understand the legal framework. This article reviews the connection between public health and the built environment and then describes the legal pathways for improving the design of our built environment.² Land and natural resources development is essential for promoting economic growth in Malaysia. After achieving independence the Malaysian government has achieved tremendous growth in various sectors, but to a great extent it has undermined issues related to environmental pollution arising from indiscriminate land development.³ Sensing this predicament, Trust No.4 of the Ninth Malaysian Plan focuses on the need to improve the standard and sustainability of quality of life.⁴ The plan also emphasizes the importance of the role of the government in providing facilities and implement programmes to improve the health status of the population. However, at the same time, the government did not realize that its vision to create a healthy nation can be realized only if the environment is clean and free from pollutants as well as conducive for the people to socialize and interact within the community to promote unity amongst the multi racial and religious Malaysian people. Health is also a requirement for people to enjoy the fruits of development and to embrace positive attitudes, such as tolerance and caring, as envisaged in “Vision 2020”.

The government has under the 9th Malaysian Plan allocated RM510 million for cleaning, preserving and beautifying rivers and RM4 billion for flood mitigation projects in the process of improving the environmental quality. Allocation of big funds in improving the environmental quality is indeed a good move. However, what is important is that the land use planning decisions must be made by involving various stakeholders that is the local planning authorities, public health authorities as well as the general public and the non-governmental

² Wendy Collins Perdue, JD, Lesley A. Stone, JD and Lawrence O. Gostin, JD, LLD (Hon), “The Built Environment and Its Relationship to the Public’s Health: The Legal Framework,” September 2003, Vol.93, No.9, *American Journal of Public Health* 1390-1394.

³ This is evidenced by the various research and reports on the ever increasing environmental problems in Malaysia especially landslides, flash floods loss of fertile land for agriculture to industries, and various types of industrial pollution.

⁴ Government of Malaysia, “Chapter 1” *Ninth Malaysia Plan 2006 – 2010*, at p. 37.

organisations. Globally, significant progress has been made to control communicable diseases such as malaria, typhoid, hepatitis A, leprosy and tuberculosis through improved sanitation facilities, increased access to safe drinking water and improved dental health.⁵

Various programmes have been planned to promote healthy lifestyles in Malaysia, for instance, in 1991, the Ministry of Health in Malaysia, launched the “Healthy Lifestyle Campaign” with its first thematic campaign, cardiovascular disease. For each consecutive year, one thematic campaign was carried out, such as prevention of diabetes mellitus in 1996 and healthy diet and nutrition in 1997. Community participation and the involvement of non-governmental organizations have contributed to the success of these programmes. Collaboration with government agencies, e.g. the National Institute of Occupational Safety and Health, has allowed emerging problems related to industrialization and occupational health to be addressed.

There is a general realization that health specialists and land use planning authorities cannot afford to operate in isolation from one another. It is important to examine the important role that can be assumed by members of the health department and other public health professionals in protecting environmental health at all levels and improving the health of the communities by participating in the land use planning, decision making, and development control process. The fading link between the land use planning and health must be re-established otherwise, public health will never be realised. This is done by examining the longstanding connection between the built environment; the way we develop and organize our neighbourhoods, cities, and regions; and the “physical, mental and social well-being”⁶ of the population. Development in promoting public health at a global level will be explored to examine some suitable recommendations that can help improve the role that can be assumed by the land planning system in Malaysia in promoting public health.

⁵ Michael Greenberg, PhD, Henry Mayer, PhD, K. Tyler Miller, Robert Hordon, PhD and Daniel Knee, MCRP, “Reestablishing Public Health and Land Use Planning to Protect Public Water Supplies” September 2003, Vol 93, No. 9, American Journal of Public Health 1522-1526 <http://www.ajph.org/cgi/content/full/93/9/1522>, accessed on 16th February 2007 citing Tarr J. *The Search for the Ultimate Sink: Urban Pollution in Historical Perspective*. Akron, Oh: University of Akron Press; 1996; Melosi M. *Effluent America: Cities, Industry, Energy, and the Environment*. Pittsburgh, Pa: University of Pittsburgh Press; 2001; and MacKenzie W, Hoxie N, Proctor M, Gradus M, Blair K, Peterson D. “A massive outbreak in Milwaukee of *Cryptosporidium* infection transmitted through public water supply” *N Engl J Med*. 1994; 331:161–167.

⁶ The World Health Organization defines health as “a state of physical, mental and social well-being, not merely the absence of disease or infirmity.”

ORIGIN OF LAND USE PLANNING – TRACING THE LINK TO PUBLIC HEALTH

Modern land use planning that originated from the United Kingdom is a result of specific social and economic problems triggered by the Industrial Revolution towards the end of the 18th century. The movement sought to eradicate social problems of overcrowding, poverty, ill health, unemployment, unsanitary and inadequate living accommodation. Urban living environment requires proper planning to help improve the living conditions of the people. The garden city movement was founded by Ebenezer Howard in England in 1898 as an approach to urban planning. Garden cities were to be planned, self-contained communities surrounded by greenbelts, and containing carefully balanced areas of residences, industry, and agriculture.⁷ Thus, early planning efforts were undertaken to control the spread of infectious diseases, and concern for improving living and the built environment to improve public health. Industrialisation and rapid urbanization has influenced many countries and it is now a global phenomenon and Malaysia too is not spared.

In Malaysia, Sir Francis Light is said to have introduced the first formal town planning system in the 18th century Penang. The initial efforts were very much dictated by considerations of public health, fire prevention and generally to facilitate the process of issuing of titles and land-efficient land administration. Later the Sanitary Board of Kuala Lumpur was established in 1890 with the objective of taking care of public health interests as well as to manage all related affairs of the growing urban settlement.⁸

Planning itself is a multi-objective, multi-dimensional, multi-disciplinary and multi-decision making activity and process. It has developed into a comprehensive exercise of analysis and prescription covering the regulation of environmental and community affairs far beyond its early purpose. It has evolved beyond being a simple technical exercise of land selection and physical design and has broadened into an activity of social purpose where the shaping of the physical environment is emphasized.

⁷ Inspired by the Utopian novel Looking Backward, Howard published To-morrow: a Peaceful Path to Real Reform in 1898 (reissued in 1902 as Garden Cities of To-morrow), organized the Garden City Association in 1899, and founded two cities in England: Letchworth Garden City in 1903, and Welwyn Garden City in 1920. Both designs are durable successes and healthy communities today, although not a full realization of Howard's ideals. The idea of the garden city was influential in the United States.

⁸ Refer Ahmad Kamal Ariffin Mohd Rus, *Sanitary Board Kuala Lumpur – Peranan dan Pentadbiran 1890-1914*, Persatuan Sejarah Malaysia, Kuala Lumpur, 2001.

The process is not merely limited to layout plans of residential, industrial, commercial or recreational activities, but a combination of components and elements which help to create a holistic living, working and recreational environment which in total determines the quality of human life and as an important tool in promoting national unity, and economic development.

Planning issues remain at the root of some of the most intractable public health problems, including the declining rates of physical activity resulting from motor vehicles dependent environments or the squatters who make up the slum dwellers especially in areas plagued by environmental pollutants, violent crime, and high rates of disease. Land use, community design, and transportation systems substantially impact local air quality, water quality and supply, traffic safety, physical activity and exposure to contaminated industries.⁹ Mental health and quality of life issues also are profoundly affected by factors ranging from the stress and difficulties of commuting to the presence or absence of natural areas and green spaces.¹⁰ Environmental health and chronic diseases such as obesity and physical inactivity are two of the most significant public health challenges of the 21st century. However, now we seem to have parted from the original aims of land use planning process.

Public health is concerned with threats to the overall health of a community based on population health analysis. Health is defined and promoted differently by many organizations. The World Health Organisation, the United Nations body that sets standards and provides global surveillance of disease, defines health as: "*A state of complete physical, mental and social well-being and not merely the absence of disease or infirmity.*"¹¹ In some ways, public health is a modern concept, although it is said to have been around since time immemorial. From the early beginning of human civilization, it was recognized that polluted water and lack of proper waste disposal may spread vector-borne diseases. Even religions attempt to regulate behavior that is specifically related to health, from types of food eaten, and the extent which certain behaviors could be indulged,

⁹ "Pollution and Health", Chapter 3, in *Meeting the Urban Challenge, Population Reports*, Volume XXX, Number 4, Fall 2002 Series M, Number 16 Special Topics Internet Edition <http://www.infoforhealth.org/pr/m16/m16chap3.shtml> accessed on 10 October 2006.

¹⁰ *Public Health in Land Use Planning and Community Design*, fact sheet of the National Association of County and City Health Officials, 2005.

¹¹ WHO Definition of Health Preamble to the Constitution of the World Health Organization as adopted by the International Health Conference, 1946.

such as consuming alcohol or drugs.¹² The governments of countries has been empowered to develop public health policies and programs to gain some understanding of the causes of disease to ensure stability, prosperity, and maintain order. Climate change has had a negative effect on public health as it can cause changes in the geographical range of disease organisms and vectors, the quantity of air, food, and water; and the stability of the ecosystems on which we depend.¹³ The United Nation's intergovernmental Panel on Climate Change and other scientific panels have assessed the potential health consequences of climate change.¹⁴

LINKING LAND USE PLANNING, NATURAL RESOURCES CONSERVATION AND PUBLIC HEALTH

Decisions on land use and community design impacts tremendously on a wide range of health and environmental issues. Land use policies can have unintended consequences that may impact adversely upon the public health ranging from obesity to chronic diseases such as heart disease, diabetes, cancer, psychological stress, and motor vehicle related injuries.¹⁵ Health is affected to a great measure by environmental conditions. The World Health Organisation defines environment and health as including both the direct pathological effects of chemicals, radiation and some biological agents, and the effects on health and well-being of the broad physical, psychological, social and aesthetic environment, which includes housing, urban development, land use and transport.¹⁶ Environment-related diseases continue to afflict many people,

¹² Islam prohibits the drinking of alcohol for Muslims including the consuming of certain types of food on the basis of health. Similarly various other religious also effectively promotes the same.

¹³ See World Resources Institute [WRI] et al., World Resources 1998-99, at 67 (1998) stating that climate influences many health determinants and while substantial climate-related health effects are predicted for the future, making such predictions is an inexact science.

¹⁴ See generally WHO et al., Climate Change and Human Health 99 (A.J. McMichael et al. eds., 1996) (prepared by M. Ando et al. (assessing and predicting the potential impacts of climate change on various infectious diseases. For more information specifically related to climate changes and heat waves, see *Nat'l Health Assessment Group, Climate Change and Human Health* (May 2001) where it was stated that one of the direct impacts of climate change on human health has been an increase in the severity of heat waves, resulting in increased mortality rates due to heat stress.

¹⁵ National Environmental Health Association (NEHA) "Land Use Planning & Design Program," *Journal of Environmental Health*, January 1, 2006.

¹⁶ See generally WHO Regional Office for Europe [WHO ROE], *Environment and Health: The European Charter and Commentary* (1989).

particularly the poorer section of the world population.¹⁷ For example, diarrhoeal diseases, largely preventable through access to safe drinking water, sanitation and food hygiene, claim 1.5 million lives a year.¹⁸ At the beginning of 2000, a substantial portion of the world's population was without access to improved water supply and sanitation.¹⁹ Africa and Asia are two parts where this problem is particularly rampant.²⁰

Air pollution is associated with a variety of health risks including acute respiratory infections such as asthma, pneumonia.²¹ Air pollution can transcend national and international environmental health concerns, as illustrated by air pollution episodes, such as the forest fires in Sumatera that affects all countries in South East Asia. Ecosystem and health focuses on the maintenance and restoration of the world's ecosystems as an essential determinant of human health and considers human health as one of the elements of sustainability. People from the developing nation are always prone to diseases²² owing to increases in population, travel, trade, and an unsustainable increase in utilization of natural resources. In the wake of the severe acute respiratory syndrome ("SARS"), it is becoming apparent that trade in wildlife, even within the

¹⁷ See World Resources Institute [WRI] et al., *World Resources 1998-99*, at 1 (1998); See also Kirk R. Smith et al., "How Much Ill Health Is Attributable to Environmental Factors?," 10 *Epidemiology* 573, 573, 581-83 (1999) stating that an estimated "25-33% of the global burden of disease can be attributed to environmental risk factors," and that this percentage decreases with economic development, meaning that people in developing countries are prone to risk.

¹⁸ See WHO, "Health in the Context of Sustainable Development," at 67, WHO Doc. WHO/HDE/HID/02.6 (2002) (prepared by Y. von Schirnding & C. Mulholland stating that climate influences many health determinants and while substantial climate-related health effects are predicted for the future, making such predictions is an inexact science).

¹⁹ See WHO, *ibid.*, at 16 reported that 1 billion people are without access to improved water supply, and 2.4 billion lack access to improved sanitation; see also WHO, *Health for All in the Twenty-First Century* p 26 (1998).

²⁰ See WHO & UNICEF, "Fewer than one-half of all Asians have access to improved sanitation and two out of five Africans lack improved water supply."

²¹ William Onzivu, "International Environmental Law, the Public's Health, and Domestic Environmental Governance in Developing Countries," 2006, 21 *American University International Law Review* p.597, at p.603.

²² See WHO Press Release, "Avian Influenza - Situation (Birds) in Nigeria," Feb. 8, 2006, http://www.who.int/csr/don/2006_02_08/en/ Refer also William Onzivu, "Globalism, Regionalism, or Both: Health Policy and Regional Economic Integration in Developing Countries, an Evolution of a Legal Regime?," 15 *Minn. J. Int'l L.* 111, 115 (2006) where the author discussed the increasing need to place health on the global and regional agenda in light of recent disease outbreaks around the world.

limitations imposed by the Convention on International Trade in Endangered Species of Flora and Fauna, poses a threat to public health.²³

A series of recent reports have emphasised the importance of reconnecting planning and public health. For instance the National Centre for Environmental Health of the Centres for Disease Control and Prevention in its report, *Creating a Healthy Environment: The Impact of the Built Environment on Public Health*,²⁴ argued the need to reintegrate land use planning and public health. The report linked explicitly transportation and land use planning to public health outcomes such as increased obesity, asthma and mental health. In 1999, the World Health Organisation published a report on, *Healthy Cities and the City Planning Process*, emphasised the importance of developing a model of “healthy urban planning” to ensure the health of the world’s increasing urban and poor populations.²⁵ Healthy People 2010 list eliminating health disparities as 1 of its 2 top priorities and acknowledges that only an interdisciplinary approach to health promotion will accomplish this goal.²⁶

These reports provide an important step towards reuniting planning and public health, however, what is missing is an articulation of the challenges each field must confront in any reconnection effort and a theory or framework articulating why and for whom the fields should be reconnected.²⁷ The most important issue at present is that the divide between land use planning and public health must not be allowed to develop further. This will cause further negative impact on public health.

²³ See Mary C. Pearl, “Editorial, Wildlife Trade: Threat to Global Health,” 1 *Eco Health* 111 (2004) where the author was asserting that many wild exotic animals bring with them an enormous risk of diseases and parasites and yet despite regulations, the wildlife trade is approximately a six billion dollar activity.

²⁴ Jackson RJ, Kochtitzky C., “Creating a Healthy Environment: The Impact of the Built Environment on Public Health.” Internet Edition at <http://www.sprawlwatch.org>. Accessed November 2006.

²⁵ Duhl LJ., Sanchez AK, *Healthy Cities and the City Planning Process*, Internet Edition at <http://www.who.dk/document/843pdf>. Accessed on 20th November 2006.

²⁶ *Healthy People 2010*, Washington, DC.:US Dept of Health and Human Services, 2000.

²⁷ Jason Coburn, “Confronting the Challenges in Reconnecting Urban Planning and Public Health,” in *American Journal of Public Health*, 2004 April; 94(4):541-546 Internet Edition at <http://www.ajph.org/>. Accessed on January 2007 the author highlighted some of the challenges posed to the efforts of reconnecting urban planning and public health.

Malaysian National Land Use Planning and Development Control System

The planning system in the Peninsular Malaysian states, is regulated by the Town and Country Planning Act 1976 (Act 172), and the rules made by the National Physical Planning Council and the State Authority and the standards and guidelines formulated by the Director General of Town and Country Planning to provide further guidance on matters related to town and country planning. It is subject to the supervisory powers of authorities including the National Physical Planning Council at the Federal level, the State Planning Committee at the state level and the local planning authority at the local government level. The basis of control of town and country planning is the development plans, which is aimed at regulating and controlling the use and development of land. The respective State Directors for Town and Country Planning formulates and keep under review the structure plans of general policy for their areas, and the other authorities maintain local plans of detailed policy for theirs. The machinery of control is planning permission, without which no development of land will be permitted. To date, the Town and Country Planning Act 1976 has been amended thrice to principally improve the quality of urban living and environment. The first amendment was in 1993 to ensure the incorporation of provisions on sewerage in the development planning process in line with the enactment of the Sewerage Services Act.

The second amendment in 1995 was made to incorporate various environmental protection measures in the land use planning process in order to promote sustainable development. This was principally to address the weaknesses in the town and country planning system that is believed to have culminated in the Highland Towers Tragedy on the 11th December 1993. Significantly, the amendment introduced the need to prepare a development proposal report for all land development activities to ensure environmental impacts are considered in the development planning process. The amendment introduced the Tree Preservation Order to promote preservation and protection of trees; provision for promoting preservation and improvement of physical environment; preservation of natural topography of an area; improvement of landscape; creation of open spaces; preservation and enhancement of heritage building and management of traffic for promoting quality and healthy urban living.

The latest amendment in 2001 was made to promote and balance the sharing of powers between the Federal and State government in the process of land use and natural resources planning and environmental protection. The amendment provided for the establishment of the National Physical Planning Council chaired by the Honourable Prime Minister at the Federal government level. The Council is expected to coordinate development at the national level so as to

promote sustainable development for the country. The amendment also introduced various measures to promote sustainable development and coordination of development at all levels of the government. The Council with the assistance from the Director General of Town and Country Planning and his department is expected to strengthen the role of the town and country planning process as a mechanism to promote sustainable development for the betterment of the nation including providing means for improving public health. The need to establish a regional planning unit was addressed and thus, the amendment incorporated the provision for establishing a regional planning committee for purposes of coordinating development within regions. This is an important development as it addresses effective utilisation of natural resources and prevents wastage and overlapping of developmental activities.

Challenges within the land use planning system

The following are some of the challenges or barriers posed to the administration system in the process of promoting health issues in the land use planning and development control system generally, and in Malaysia specifically:

- a. Lack of good quantitative data, particularly on the local level; National data is available, but local data would be significant for making the case on the political level. Also, an over-reliance on quantitative data might mean that other health problems of equal importance are not equally validated.
- b. Lack of cross-disciplinary education and collaboration. There is no one-stop supervisory agency that unites all parties involved in the land-use planning process.
- c. Processes within the land use planning and development control are compartmentalized. The recommendations made by all the various authorities involved in the process are often not taken into consideration since the ultimate decision making power resets with the planning authorities.
- d. Health is often too narrowly defined and it doesn't relate obesity, physical activity, asthma, and other related health problems to affordable housing, unsanitary living conditions etc. Health issues focus more on finding cure for illness without looking at the sources.

It would be useful to examine the developments in promoting protection for public health at global level that could provide some useful suggestions towards improving the Malaysian land use planning system in improving public health.

Developments in promoting protection for public health at global level

A number of principles emerged from the 1992 U.N. Conference on Environment and Development ("UNCED"), other declarations, and conventions, have supported the development of international environmental law. These principles include the concept of sustainable development,²⁸ the principle of intergenerational equity²⁹ and intra-generational equity,³⁰ the right to a clean environment,³¹ the polluter-pays principle,³² the precautionary principle,³³ and the practice of environmental impact assessments.³⁴ The 1972

²⁸ Refer Report of the United Nations Conference on Environment and Development, June 3-14, 1992, Rio Declaration on Environment and Development, Annex I principle No. 4, U.N. Doc A/CONF.151/26 (Vol. I) (1992) ["Rio Declaration"] where it was declared that environmental protection constitutes an integral aspect of sustainable development.

²⁹ Several Principles from the Rio Declarations support an intergenerational model of development. Principle No. 3 asserts that an equitable right to development is essential to fulfill the needs of present and future generations; Principles 5-7 urges all people and nations to cooperate in a global partnership to eradicate poverty, assist vulnerable populations, and reduce environmental degradation; Principle No.11 urges states to enact effective and appropriate environmental laws and programs; Principle No.14 calls on states to prevent transfer of harmful material to other states.

³⁰ Rio Declaration Principle 21 urges the younger generations to form a creative global partnership in support of sustainable development.

³¹ Rio Declaration Principle No.1 pronounced that under a sustainable development model all people are entitled to a healthy environment; see also United Nations Conference on the Human Environment, June 5-16, 1972, Declaration of the United Nations Conference on the Human Environment, Principle No.1, U.N. Doc. A/CONF.48/14/Rev.1 (1973) ["Stockholm Declaration"].

³² Rio Declaration, Principle No.16 states that a polluter should bear the cost of pollution unless such an action would impede international trade or investment) see also United Nations Conference on Environment and Development, June 3-14, 1992, Agenda 21 Programme of Action for Sustainable Development, P 8.28, U.N. Doc. A/CONF.151/26 (1992) ["Agenda 21"] reported that that several countries have moved toward market-oriented approaches such as having the polluter or natural resource-user pay.

³³ Rio Declaration, Principle No.15 urges states to adopt precautionary measures to protect the environment; see also Agenda 21, at pp 9.6-8 where it listed several precautionary actions that states can take to protect the environment such as increased research, balanced climate observation, scientific capacity building, and identification of climate fluctuations.

³⁴ Rio Declaration, Principle No.17 encourages states to craft a policy of national environmental impact statements that note activities likely to adversely affect the environment.

United Nations Conference on Human Environment held in Stockholm noted the continuing degradation of the environment and spearheaded the move toward more intensified international action based on the recognition of the health dimension of environmental issues.³⁵ Though the Stockholm Declaration did not provide for a specific health agenda, it laid the groundwork for health within the environmental agenda.³⁶ Subsequently, the World Commission on Environment and Development (Brundtland Commission and the report, *Our Common Future*) in 1992, the U.N. Conference on Environment and Development took place. The Report of the World Commission on Environment and Development and UNCED in Rio de Janeiro led to; *inter alia*, the adoption of Agenda 21. Principle 1 of the Rio Declaration on Environment and Development established a foundation for linking human rights and environmental protection, declaring that man has a fundamental right to freedom, equality and adequate conditions of life, in an environment of a quality that permits a life of dignity and well-being.³⁷ It also announced the responsibility of each person to protect and improve the environment for the present and future generations.³⁸

The Declaration is said to have laid down a sound foundation for the protection of public health in the realm of a global environmental agenda.³⁹ Agenda 21, resulting from the Rio Declaration provided for the need to protect and promote human health, with emphasis on meeting primary health care needs particularly in rural areas to control communicable diseases, the protection of the health of vulnerable groups, addressing the urban health challenge, and reducing health risks from environmental pollution and hazards.⁴⁰ By emphasizing the need for preventive efforts for health and sustainable development, Agenda 21 provided a mandate for WHO and other health actors to promote health through, *inter-alia*, international environmental law.

³⁵ Stockholm Declaration, Preamble discusses the magnitude of human-made problems in the environment that have adverse effects on physical, mental, and social health.

³⁶ The Conference adopted three non-binding instruments, a resolution on institutional and financial arrangements, the Stockholm Declaration containing twenty-six principles, and an action plan containing 109 recommendations.

³⁷ Rio Declaration, Principle No.1.

³⁸ Rio Declaration, Principle No.1.

³⁹ William Onzivu, "International Environmental Law, the Public's Health, and Domestic Environmental Governance in Developing Countries," 2006, 21 Am. U. Int'l L. Rev. 597 at p.14.

⁴⁰ Agenda 21, pp.6.1-6.46. <http://www.un.org/esa/sustdev/documents/agenda21/index>.

Agenda 21 and the Rio Declaration set the basis for integration of health in sustainable development,⁴¹ affirming that sustainable development maximizes human potential while protecting the environment but that if there is a conflict, human welfare must prevail.⁴² Contribution of Agenda 21 to the environment-health discourse has been to expand on the narrow attention devoted to the environment as a source of disease to a wider inclusion of medical care, preventive medicine, and the general improvement of human health. In this way, Agenda 21 reflects the WHO definition of health as "a state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity."⁴³ In the developing nations, health is essential for development.⁴⁴ Furthermore, Agenda 21 expounds on the importance of distributive justice and equality in access to basic goods and services as a component of sustainable development.

Public health is concerned with the health of the population as a whole and also concomitant with the concept of redistributive justice in the provision of health services and equitable access to medical care.⁴⁵ Agenda 21 emphasis on enhancing the links between poverty reduction, economic efficiency and sound environmental management is implied.⁴⁶ Agenda 21 strengthens the importance

⁴¹ See Agenda 21, "Protection and Promotion of Human Health", in *Environment and Development Agenda* United Nations Environment Programme, where it was noted that States should use energy sources in a manner that respects both human health and the environment. Refer Internet Edition at <http://www.unep.org/Documents/Multilingual/Default.asp?DocumentID=52&ArticleID=54&l=en>, accessed on 10th May 2007.

⁴² Rio Declaration, Principle No. 1 declared that humans are the central concern of sustainable development. Internet edition at <http://www.un.org/esa/sustdev/documents/agenda21/index.htm> accessed on 10th May 2007.

⁴³ Constitution of the World Health Organization, July 22, 1946, 62 Stat. 2679, 14 U.N.T.S. 185.

⁴⁴ World Health Org., The World Health Report 1999, at 1-12 (1999) at 1-12 where there was finding that poor health conditions increase poverty and that persons with better health contribute to economic growth. Furthermore, research indicates that health indicators such as life expectancy and survival rates are predictors of economic development.

⁴⁵ Frank P. Grad, "Public Health Law: Its Form, Function, Future, and Ethical Parameters," 49 Int'l Digest Health Legis. 19, 19-22 (1998); see also William Onzivu, Public Health and the Tobacco Problem: International Legal Implications for Africa, 29 Ga. J. Int'l & Comp. L. 223, 225 (2001).

⁴⁶ Ved P. Nanda & George (Rock) Pring, *International Environmental Law for the 21st Century* 17-62 (2003), at 103 where the authors argued that the effectiveness with which

of international health cooperation in dealing with existing and emerging disease pandemics, particularly in developing countries. Agenda 21 thus provides an important basis for the promotion of environmental health through the application of international environmental law at both the global and national spheres.⁴⁷ Thus, during the World Summit on Sustainable Development in 2002, health was one of the five key priorities of the Summit.⁴⁸ In the Summit's Plan of Implementation, the parties agreed to a number of health-related goals enshrined in the Millennium Goals. From the 1972 United Nations Conference on the Human Environment in Stockholm to the World Summit on Sustainable Development in 2002, the role of international environmental law in promoting public health has progressively gained prominence internationally and domestically within States. An increased partnership between health and environment sectors has continued to advance environmental health goals while international environmental law is considered effective in achieving public health goals.⁴⁹

Agenda 21 is actually funded and implemented will determine whether this ambitious document is successful.

⁴⁷ See Agenda 21, P 1.3; see Yasmin von Schirnding et al., *International Environmental Law and Global Public Health* 80 Bull. World Health Org. 970, 970 (2002), available at [http://www.scielo.org/scielo.php?script=sciarttext&pid=S0042-96862002001200012](http://www.scielo.org/scielo.php?script=sciarttext&pid=S0042-96862002001200012&lng=en&nrm=iso) & lng=en&nrm=iso (discussing how Agenda 21 has played a part in creating a platform for WHO to promote health through international environmental law); Yasmin von Schirnding, "The World Summit on Sustainable Development: Reaffirming the Centrality of Health, Globalization & Health 1," 1 (May 10, 2005) <http://www.globalizationandhealth.com/content/pdf/1744-8603-1-8.pdf>.

⁴⁸ Refer Yasmin von Schirnding, "The World Summit on Sustainable Development: Reaffirming the Centrality of Health, Globalization & Health 1," at p.4 (May 10, 2005), <http://www.globalizationandhealth.com/content/pdf/1744-8603-1-8.pdf>.

⁴⁹ Yasmin von Schirnding et al., "International Environmental Law and Global Public Health", 80 Bull. World Health Org. 970, 972-73 (2002) at 972-73 where they discussed the contribution of international environmental conventions to the promotion of global public health through technical and financial support and through effective linkages for health. Refer also A. Karim Ahmed, Ph.D., "Environmental Protection, Public Health and Human Rights - *An Integrated Assessment*," A Report Prepared for Science and Human Rights Program American Association for the Advancement of Science April 2003 (Global Children's Health and Environment Fund National Council for Science and the Environment Internet Edition at <http://shr.aas.org/lhenv/docs/ahmed.pdf>, accessed on 20th Mac 2007 (The report evaluated the human rights dimensions of significant environmental and public health issues by: (1) showing linkages between environment, health and human rights within the context of sustainable development; (2) outlining and assessing environmental and public health problems in various regions of the globe; and (3) examining relevant scientific and technical documents, regulatory standards/ guidelines, and international treaties and conventions.)

SUGGESTIONS FOR REFORMS TO LAND USE PLANNING SYSTEM TO PROMOTE PUBLIC HEALTH

There are various developments regionally and worldwide that has been used to promote incorporation of measures to improve public health. The following are some of the suggestions that could be used to improve the Malaysian system specifically and others generally:

Providing Clear Regulations to Empower Statutory Authority

Regulations needed are those that provide both clear statutory authority for public health in land-use planning processes and that assures that specific considerations are incorporated into the process. Local public health agencies need more education on how to increase their influence in the land use planning arena along with developing an understanding for urban and transportation design. Need for cross-educational initiatives amongst planners, public and environmental health officials, traffic engineers, community members and the leadership of professional organizations. National organizations can play a collaborating role between public health and land use planning/community design. Build local capacity and provide data and public health benchmarks for safe and health community design. Public Health professionals need to move from working just on the implementation phase of community design to participating as well as the visioning and policy phase; becoming more proactive and involved early on in the process. They should also improve the training and technical support for local public health agencies and other public health professionals on issues of health, the built environment and land use planning and community design processes.

Extending the Role of Health Authority in Decision Making Process

Currently the health authority is merely given the role of endorsing the development plans prepared by the local planning authority. They assume a reactive role rather than a proactive role as they come in late into the review process, only being asked to make their recommendations. They are not actually involved in the decision making process. Thus, providing them the opportunity to be involved in the planning decision -making process can bring about the changes as they can provide input on information related to public health. Lack of good quantitative data, particularly on the local level despite the availability of data at the National level, is a drawback since local data is what would be significant for decision making. The planning decision- making process is

compartmentalised as such health authorities are brought in at the end of the reviewing process, and are thus unable to make the desired impact on the decision. The health authorities must be involved at all levels of planning decision making process.

Health authorities can act as the catalysts and facilitators for change in the community. They can initiate community dialogue and use it to promote informed decision-making in relation to community design. Becoming involved early in the land use planning process allows them to play a proactive role. Public Health professionals need to move from working just on the implementation phase of community design to participating, as well, visioning and policy phase; becoming more proactive and involved early on in the process. They must improve the training and technical support for local public health agencies and other public health professionals on issues of health, the built environment and land use planning and community design processes.

Promoting Creation of Healthy City

The healthy city concept was made popular by the "Healthy for All" movement launched by the World Health Organisation (WHO) in 1978. A healthy city is one which is continually creating and improving those physical and social environments and expanding those community resources which enable people to mutually support each other in performing all the functions of life and in developing to their maximum potential.⁵⁰ A healthy city thus is expected to comprise the following characteristics:⁵¹

1. Planning for provision of basic infrastructure such as sewerage and drainage systems;
2. Planning for the provision of adequate open space;
3. Identification of sites for solid waste disposal and treatment;
4. Provision of adequate land for suitable housing, including squatters improvements;
5. Proper identification of industrial sites;
6. Planning for facilitating sufficient public transportation and reducing traffic congestion; and

⁵⁰ L.J. Duhl & A.K. Sanchez, *Process A Background Document On Links Between Health And Urban Planning*, Internet edition <http://www.euro.who.int/document/e67843.pdf>, accessed on 30th May 2007.

⁵¹ Refer Characteristics of a Healthy City outlined in Len Duhl's book, "The Social Entrepreneurship of Change": Internet Edition at <http://www.healthycities.org/lenduhls.html>, accessed on 20th January 2007.

7. Protection and improvement of natural beauty areas, natural habitats and cultural heritage.

Urban and rural communities in the world are facing unique challenges. Rapid urbanization and agricultural mechanization have changed the traditional physical and economical set up in the cities and villages.⁵² Migration of the rural population to urban centres has created a strong link between cities and villages. Healthy cities and villages concepts are holistic approaches aiming at improving the quality of environment, thereby the humans, through a focus on the community development such as healthy housing, proper water supply and sanitation, appropriate handling and disposal of solid wastes, safe preparation and storage of food, control of disease vectors in the environment, prevention of risks from chemicals/pesticides and pollution in general, search for and choice of technologies appropriate for the community involved and generation of income for the poor sections of the community.⁵³ A healthy city is a place where children are nurtured in the body and mind; where the environment invites learning and leisure; where people work and age with dignity; where ecological balance is a source of pride. A healthy city is one that is continually creating and improving those physical and social environments and expanding those community resources, which enable people to mutually support each other in performing all functions of life and in developing their maximum potential.

Expanding the Role of Courts in Protecting Environmental Rights of the Public

It is undeniable that environmental degradation could eventually endanger the environment and public health of the present and the future generations. Therefore, some of the courts have interpreted the right to life provision in the Constitution in a diversified and advanced way so as to promote environmental protection. The courts in India, Pakistan and Bangladesh use various constitutional rights to protect the environment and promote protection of human rights. The judges are incorporating the right to healthy environment directly or indirectly into their judgments. Developments in conferring environmental rights in the Constitution can assure rights of interested citizens

⁵² Trudy Harpham, Salma Burton and Ilona Blue, "Healthy city projects in developing countries,; the first evaluation," in *Health Promotion International*, Vol. 16, No.2, pp.111-125, June 2001, Oxford University Press, 2001 Internet Edition at <http://heapro.oxfordjournals.org/cgi/content/full/16/2/111>. Accessed on 9th February, 2007.

⁵³ WHO-CEHA Regional Center for Environmental Health Activities from Internet Edition <http://www.ajph.org/cgi/content/abstract/93/1/118?etoc>.

to seek relief for environmental harm. This right embedded once in the Constitution of a country will eliminate problems posed by the strict rules of standing that allow only those with sufficient interests to institute an action to demand relief for the damage to his self or his property. The idea of environmental rights emerged from a statement supporting the principle of the human right to environmental quality in the Stockholm Declaration on the Human Environment in 1972:

“[m]an has the fundamental right to freedom, equality and adequate conditions of life, in an environment of a quality that permits a life of dignity and well-being, and he bears a solemn responsibility to protect and improve the environment for present and future generations.”⁵⁴

Further, the *Rio Declaration* conferred rights on the people to protect the environment, by proclaiming that all human beings have the fundamental right to an environment adequate for their health and well being.⁵⁵ It is generally understood that although environmental rights may be derived from existing treaty rights such as the right to life, health, and property, international law has not incorporated an independent right to environmental quality.⁵⁶ Environmental rights include the right to be free from environmental conditions that threaten health and life itself.⁵⁷ Environmental rights can be conferred on citizens by statutory and constitutional provisions and this right can be invoked before a court of law in the event that it can be proven that the rights have been infringed.

There is no express recognition of a right to environmental quality or protection in the Malaysian Federal Constitution 1957. Yet the absence of an explicit reference to the environment does not preclude argument that environmental rights exist implicitly within other constitutional provisions. The right to life and personal liberty is entrenched in article 5(1) Federal Constitution that provides, no person shall be deprived of his life or personal liberty save in accordance with law.” Article 8(1) of the Federal Constitution further provides that all persons are equal before the law and entitled to the equal protection of

⁵⁴ Declaration on the United Nations Conference on the Human Environment and Development, *Our Common Future* (Oxford, Oxford University Press, 1987) at p.348.

⁵⁵ *Ibid.*

⁵⁶ Birnie, P.W. & Boyle, A.E., *International Law and the Environment*,(Oxford, Clarendon Press, 1992) at p.192.

⁵⁷ Aguilar, A.F. & Popovic, N.A.F., “Law Making in the United Nations: The UN Study on Human Rights and the Environment,”[1994] *Review of European Community & International Environmental Law*, Vol.3 (4) at pp.197-205.

the law.⁵⁸ The provision of article 5(1) Federal Constitution can be read as guaranteeing natural justice where the citizens are guaranteed the right to life, which should encompass the right to a clean and healthy environment.⁵⁹ Article 8(1) Federal Constitution can be read as guaranteeing equality before the law for all persons as well as equal protection in law. Granting equal protection and rights to each and every person can also guarantee an equally healthy environment for all. Though the literacy rate in Malaysia is high compared to many other developing nations, there are still natives (*orang asli*) of West and East Malaysia who have yet to be touched by modern development. These people need equal protection from the law especially in terms of preventing logging and other land development activities from threatening their health and livelihood. The natives have special connection to the land they live in. To them it is a source of livelihood and they reserve the right to live peacefully and not be threatened by allowing development to be carried out by the privileged few.

The Malaysian constitution provides for a federal structure that inhibits concerted environmental policy development at both federal and state level.⁶⁰ Harding is of the view that the right to a healthy environment can be given some practical force by a proper division of environmental responsibilities between states and central government.⁶¹ The Constitution guarantees an institutional structure, which may help to enable issues of environmental human rights to be ventilated through for example, judicial independence and representative parliamentary democracy.⁶² However, legal institutions have constantly been under attack from the executive branch of the Government.⁶³ This resulted in concentration of power within the executive sector that has been absorbing most of the powers of the judiciary and legislature.

However, some interesting and commendable developments have taken place in Asian countries. India, Pakistan and Bangladesh interpreted the right to life, as a fundamental right, has been extended to include the right to a healthy

⁵⁸ Article 8(1) of the Federal Constitution of Malaysia, 1957.

⁵⁹ Refer Abdul Haseeb Ansary, "Right to Healthful Environment as a means to ensure Environmental Justice: An Overview with Special Reference to India, Philippines and Malaysia" [1998] 4 MLJ xxv.

⁶⁰ Harding, A.J., "Practical Human Rights, NGOs & the Environment in Malaysia," in Boyle, A.E. & Anderson, M.R.,(eds.) *Human Right Approaches to Environmental Protection*, (Oxford, Clarendon, 1996) p.227 at p.229.

⁶¹ *Ibid*. A good example of the concentration of powers on the State or the Central government is the *Bakun Dam* case.

⁶² *Ibid* at p.230.

⁶³ Harding, A.J., "The 1988 Constitutional Crisis in Malaysia," (1990) 39 *International and Commonwealth Law Quarterly*, at p.57.

environment. The right to a healthy environment has been incorporated, directly or indirectly, by the court in its' judgements. In India, the constitution provides direct protection for the environment. On the other hand, the Constitution of Bangladesh or Pakistan does not provide any direct protection of the environment. In India, Pakistan and Bangladesh, the fundamental right to life has been expanded to include, amongst others, right to liberty, livelihood, healthy/clean environment or protection against degrading treatment. Most litigation is brought against public authorities, which include various ministries of Central government, federal bodies in Pakistan and India, local authorities and public-owned companies.

The right to life has been used in a diversified manner in India.⁶⁴ It includes, *inter alia*, the right to survive as a species, quality of life, the right to live with dignity and the right to livelihood. In India, this has been expressly recognised as a constitutional right. However, the nature and extent of this right is not similar to the self-executory and actionable right to a sound and healthy ecology prescribed in the Constitution of the Philippines.⁶⁵ Article 21 of the Indian Constitution states: 'No person shall be deprived of his life or personal liberty except according to procedures established by law.' The Supreme Court expanded this negative right in two ways. Firstly, any law affecting personal liberty should be reasonable, fair and just.⁶⁶ Secondly, the Court recognised

⁶⁴ Jona Razzaque, "Human Rights and the Environment: the national experience in South Asia and Africa", Background Paper No. 4, *Joint UNEP-OHCHR Expert Seminar on Human Rights and the Environment*, 14-16 January 2002, Geneva (where the discussion reviewed the implementation of Agenda 21 with regard to the promotion and protection of human rights) internet Edition at <http://www.unhchr.ch/environment/bp4.html> accessed on 20th January 2007; Refer also Professor Dinah Shelton, University of Notre Dame, *Human Rights and the Environment: Jurisprudence of Human Rights Bodies*, Background Paper No.2, Joint UNEP-OHCHR Expert Seminar on Human Rights and the Environment, 14-16 January 2002, Geneva (where the discussion summarizes the decisions, recommendations and comments of global and regional human rights bodies on issues of environmental protection and human rights), internet Edition at <http://www.unhchr.ch/environment/bp2.html>, accessed on 20th January 2007.

⁶⁵ Section 16, Article II of the 1987 Constitution states: 'The State shall protect and advance the right of the people to a balanced and healthful ecology in accord with the rhythm and harmony of nature'. This right along with Right to Health (section 15) ascertains a balanced and healthful ecology. *Minors Oposa v. Sec. of the Department of Environment*, 33 ILM 173 (1994) See Antonio G.M. La Vina, 'The Right to a Sound Environment in the Philippines: The Significance of the Minors Oposa Case' (1994) RECIEL Vol 3, No.4, pg.246-252.

⁶⁶ *Maneka Gandhi v. Union of India*, AIR 1978 SC 597, 623-624. *Francis Coralie Mullin v. The Administrator, Union Territory of Delhi*, AIR 1981 SC 746, 749-750.

several unarticulated liberties that were implied by article 21.⁶⁷ It is by this second method that the Supreme Court interpreted the right to life and personal liberty to include the right to a clean environment.⁶⁸

In *Vellore Citizens Welfare Reform v. Union of India*,⁶⁹ the discussion on life and liberty rights afforded by the Indian Constitution and the constitutional mandate to the state to protect and improve the environment and public health. The Indian Supreme Court determined that a number of tanneries in the State of Tamil Nadu violated citizens' right to life by discharging untreated effluents into agricultural areas and local drinking water supplies. Imposing pollution fines on certain tanneries to be utilized for compensating affected individuals and restoring environmental damages caused by the tanneries.

In *Re Human Rights Case*,⁷⁰ the reasoning that dumping waste materials along the coasts, including nuclear waste, could jeopardize the people's health, environment, and marine life in the region was accepted by the courts. In *Sec'y, West Pak. Salt Miners Labour Union v. Dir., Indus. & Mineral Dev.*,⁷¹ the Judge determined that mining operations posed dangers of contamination because such operations could cause cracks, punctures, and leakages in the rocks and ravines that would contaminate or dry up the water springs. The Pakistani Supreme Court explained that the right to life under the Constitution entailed an expansive definition and thus, includes the right to have access to unpolluted water. The Malaysian courts can definitely learn from the other Asian counterparts so that it too can help enforce environmental rights and promotion of public health.

CONCLUSIONS

The link between the environment and public health can never be severed and history proves that attempts to sever the link has cause unnecessary problems to man's well being. Until very recently, environmental protection, public

⁶⁷ Directive principle such as equal pay for equal work, free legal aid, right to speedy trial, right to livelihood, right to education and DP relating to environment [Article 48-A] are read in conjunction with the fundamental rights.

⁶⁸ P. Leelakrishnan, *Law and Environment* (1992, Eastern Book Company, India) Chapter 10, pg.144-152.

⁶⁹ *Vellore Citizens Welfare Reform v. Union of India*, A.I.R. 1996 S.C. 2715, 2721.

⁷⁰ *Re Human Rights Case*, P.L.D. 1994 S. Ct. 102.

⁷¹ *Gen. Sec'y, West Pak. Salt Miners Labour Union v. Dir., Indus. & Mineral Dev.*, 1994 S.C.M.R. 2061.

health and human rights were viewed as distinct areas of public policy by governmental institutions and non-governmental organizations alike at both the national and international levels. With increasing globalization of trade and commerce in the past few decades, the environmental and public health impacts of rapid industrialization and urbanization in different regions of the world are now recognized as having major human rights implications by many policy makers. Human rights in the context of environment and sustainable development recognize that for human communities to survive, they must have an adequate and secure standard of living; they must be protected from harmful substances and unsafe products; they must learn to conserve and equitably share natural resources. Without these environmental and public health policies in place, human rights for respect, dignity, equality, non-discrimination and the ability for the public to participate in decisions that affect their lives cannot be achieved. Thus, the role of the local authorities and public health in improving public health must be seriously considered.

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ENERGY CONSUMPTION AND CARBON DIOXIDE EMISSION CONSIDERATIONS IN THE URBAN PLANNING PROCESS IN MALAYSIA

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Abstract

In handling global warming issues, among the most important measures are to reduce energy consumptions and carbon dioxide emissions. While many countries have recognized the importance of the role of urban planning in energy conservation and reduction of carbon dioxide emissions, spatial planning framework in Malaysia is still lacking in this aspect. Although there are some spatial planning policies indirectly favoring energy conservation, there is still no measure that directly emphasizes on promoting energy conservation and capping carbon dioxide emissions. Energy and carbon dioxide issues should thus be taken as one of the core parts in the urban planning process. It is necessary to develop and incorporate a decision making tool to assess the overall impact of development plans on energy consumptions and carbon dioxide emissions. While achieving the desired economic and social developments, it is necessary to create a low energy-consuming, carbon dioxide-emitting sustainable society.

Keywords: Global warming, Energy consumption, Carbon dioxide emission, Urban planning

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INTRODUCTION

The world is facing the challenges of global warming and climate change issues. The anthropogenic driver of climate change is the increasing concentration of greenhouse gases (GHG) in the atmosphere. Carbon dioxide (CO₂) is the most important anthropogenic greenhouse gas, and the global increase in carbon dioxide concentration is due primarily to fossil fuel use and land use change (IPCC, 2007).

The most significant increase of energy consumptions and CO₂ emissions is taking place in cities, where rapidly expanding populations enjoy higher living standards and material affluence (Fong et al., 2007a & 2007b; IGES, 2004). Thus, dealing with the issues of energy consumptions and CO₂ emissions, it is necessary to focus on the urban sector, and urban planning plays an important role in combating global warming, or at a small scale, mitigating the urban heat island (UHI) phenomenon.

One of the key principles in urban planning is to achieve 'sustainable development'. The most well-known definition of sustainable development that is accepted by the United Nations is 'development that meets the needs of the present without compromising the ability of future generations to meet their own needs'. In achieving sustainable development, there are many aspects that should be taken into consideration. The Division for Sustainable Development under the UN Department of Economic and Social Affairs has listed down the fields within the scope of sustainable development, and 'climate change' and 'energy' are among the main focuses (UN, 2007). Hence, it is necessary to take the climate change and energy issues as one of the main considerations in the urban planning process. However, studies show that population and economic growth are the major driving forces behind increasing energy consumption and CO₂ emissions (Fong et al., 2007a; IGES, 2004). So, it would be a big challenge to maintain the high quality of life in the cities while ensuring low energy consumptions and CO₂ emissions.

In recent years, due to the increasing concerns on global warming issues that are closely associated with CO₂ emissions, the concept of 'low carbon city' is currently gaining popularity among the urban planners and city governments. Planning of low carbon cities involves creation of a low carbon society (LCS) by promoting low carbon emissions. The increases of CO₂ concentration are due primarily to fossil fuel use and land use change. Hence, urban planning, through land use planning and planning control can play a vital role in implementing the idea of low carbon city, particularly during the formulation of development plans (Ho and Fong, 2007).

This paper attempts to highlight the importance of energy conservation and reduction of CO₂ emissions, and to examine the spatial planning process in Malaysia from the perspective of energy consumptions and CO₂ emissions. It provides a guide for further consideration in incorporating energy and CO₂ issues as the core part of urban planning process, in achieving sustainable development based on the concept of low carbon city.

GLOBAL WARMING, CARBON DIOXIDE EMISSIONS AND ENERGY CONSUMPTIONS

Global Warming and Climate Change

The issues of global warming and climate change have become a subject of intense interest all over the world since the last decade. Warming of the climate system is now evidenced from observations of increases in global average air and ocean temperatures, widespread melting of snow and ice, and rising global average sea level.

In the Climate Change 2007 report (IPCC, 2007), the Intergovernmental Panel on Climate Change (IPCC) reported that eleven of the last twelve years (1995–2006) rank among the 12 warmest years in the instrumental record of global surface temperature since 1850, and the total temperature increase from 1850–1899 to 2001–2005 is about 0.76°C. It is predicted a rise in the average global surface temperature of about 2°C between 1990 and 2100 (IPCC, 2004).

The same report also revealed that, as a result of global warming, mountain glaciers and snow cover have declined and contributed to sea level rise. Global average sea level rose at an average rate of 1.8 mm per year over the period of 1961 to 2003. The rate was faster over 1993 to 2003, which was about 3.1 mm per year.

Also, at continental, regional, and ocean basin scales, numerous long-term changes in climate have been observed. These include changes in Arctic temperatures and ice, widespread changes in precipitation amounts, ocean salinity, wind patterns and aspects of extreme weather including droughts, heavy precipitation, heat waves and the intensity of tropical cyclones. Average Arctic temperatures increased at almost twice of the global average rate in the past 100 years. Satellite data since 1978 showed that annual average Arctic sea ice extent has shrunk by 2.7% per decade, with larger decreases in summer i.e. 7.4% per decade.

In term of precipitation, long-term observation from 1900 to 2005 showed significant increase in precipitation in eastern parts of North and South America, northern Europe and northern and central Asia, while drying has been observed in the Sahel, the Mediterranean, southern Africa and parts of southern Asia. More intense and longer droughts have been observed over wider areas since the 1970s, particularly in the tropics and subtropics. Increased drying linked with higher temperatures and decreased precipitation has contributed to changes in drought.

It was also reported that increase of intense tropical cyclone activity in the North Atlantic since 1970 is correlated with increasing tropical sea surface temperatures.

Global Warming and Carbon Dioxide Emissions

Human activities influence the environment. Human activities, in particular those involving the combustion of fossil fuels and biomass burning, produce GHG that affects the composition of the atmosphere and lead to the depletion of the stratospheric ozone layer. Land use change due to urbanization and forestry and agricultural activities is also affecting the physical and biological properties of the earth surface and subsequently affecting the regional and global climate (IPCC, 2001).

The increase in GHG concentrations in the atmosphere affects processes and feedbacks in the climate system. Qualitatively, an increase of atmospheric GHG concentrations will lead to an average increase of the temperature of the surface-troposphere system. In this respect, CO₂ is the most important anthropogenic GHG. Increased CO₂ emissions from fossil fuel use is certain to be the dominant influence on the trends in atmospheric CO₂ concentration that eventually resulted in rising global temperatures and sea level (IPCC, 2005).

CO₂ is the GHG that has the largest contribution from human activities (IPCC, 2005). The global atmospheric concentration of CO₂ has increased from a pre-industrial value of about 280 ppm to 379 ppm in 2005. The atmospheric concentration of CO₂ in 2005 exceeds by far the natural range over the last 650,000 years (180 to 300 ppm) as determined from ice cores. The annual CO₂ concentration growth rate was larger during the last 10 years (1995–2005 average: 1.9 ppm per year), than it has been since the beginning of continuous direct atmospheric measurements (1960–2005 average: 1.4 ppm per year) although there is year-to-year variability in growth rates. (IPCC, 2007)

Carbon Dioxide Emissions and Energy Use

CO₂ is the most abundant anthropogenic (human-caused) GHG in the atmosphere. Emissions of CO₂ arise from a number of sources, mainly fossil fuel combustion in the power generation, industrial, residential and transportation sectors. It is released into the atmosphere by the combustion of fossil fuels such as coal, oil or natural gas, and renewable fuels like biomass (IPCC, 2005).

According to the International Energy Outlook 2006 (cf. Figure 1), world CO₂ emissions from the consumption of fossil fuels is expected to grow at an average rate of 2.1% per year from 2003 to 2030. The world CO₂ emission from the consumption of fossil fuels is predicted to increase from about 25,000 billion metric tons in 2003, to more than 40,000 billion metric tons by 2030.

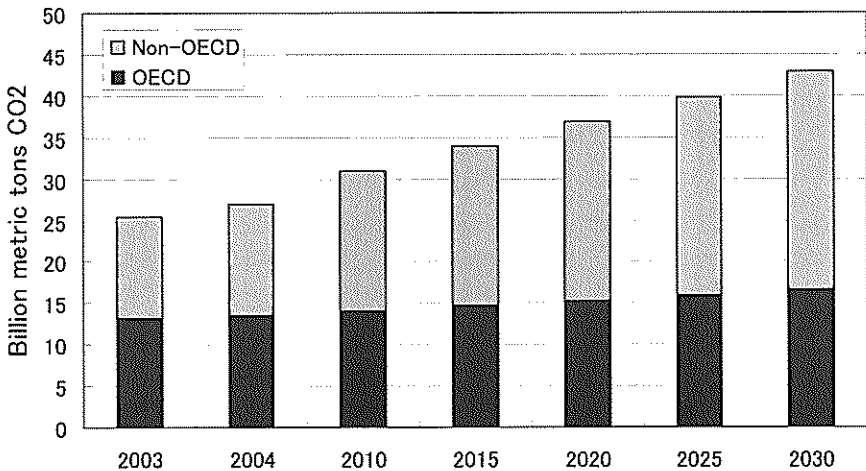


Figure 1: World energy-related CO₂ emissions by region, 1990-2030 (EIA, 2007)

The relative contributions of different fossil fuels to total energy-related CO₂ emissions have changed over time as shown in Figure 2. Increasing trend of CO₂ emissions is observed for all fuel types and they are projected to further increase steadily over the projection period up to 2030. However, emissions from petroleum and other liquids that made up the largest proportion (42%) of world total emissions in 1990, was overtaken by coal since 2005. By 2030, it is projected that coal and liquids (petroleum and other liquids) will each be

contributing 43% and 36% of the world total emissions. The increasing share of coal is reflective of its important role in the energy mix of non-OECD countries, especially China and India (EIA, 2007). In 1990, emissions from China and India combined constituted 13% of world emissions, but by 2004, that share rose to 22%, largely because of a strong increase in coal use in these two countries. This trend is projected to continue, and by 2030 CO₂ emissions from China and India combined are projected to account for 31% of total world emissions, with China alone responsible for 26% of the world total.

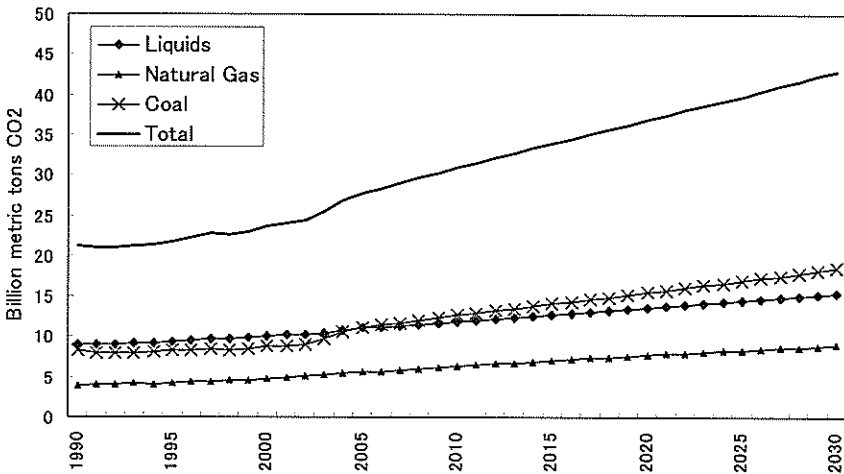


Figure 2: World energy-related CO₂ emissions by fuel type, 1990-2030 (EIA, 2007)

GLOBAL AND MALAYSIAN CARBON DIOXIDE EMISSION AND ENERGY CONSUMPTION TRENDS

Carbon Dioxide Emissions

Figure 1 above reveals that world CO₂ emissions is at an increasing trend. Every country contributes different amounts of CO₂ into the atmosphere. From the figure, it can be seen that the growth rate of CO₂ emissions from non-OECD countries is higher than the OECD countries. 2004 marked the first time in history that energy-related CO₂ emissions from the non-OECD countries exceeded those from the OECD countries. Furthermore, because the projected average annual increase in emissions from 2004 to 2030 in the non-OECD countries (2.6%) is more than three times the increase projected for the OECD countries (0.8%), CO₂ emissions from the non-OECD countries in 2030, at 26.2

billion metric tons, are projected to exceed those from the OECD countries by 57%.

Table 1 shows the regional shares of CO₂ emissions against the world total emissions. In line with Figure 1, the share of OECD countries dropped from 65.9% in 1973 to 47.6% in 2005. Increases of share are seen in most of the other regions, including Asia, Latin America, Africa and Middle East. Among these regions, Asia has the most significant increase. Including China, the share of CO₂ emissions from Asia escalated from 8.7% in 1973 to 28.3% in 2005. The rapid increase of CO₂ emissions from these non-OECD developing countries are mainly due to the development and industrialization over the last decades. Comparing this with the data shown in Figure 2, it can be seen that the rapid increase of CO₂ emissions from non-OECD developing countries is very closely related to the increased usage of coal as an energy source. Coal is not only the most carbon-intensive fossil fuels, but is also the fastest growing energy source. The increasing share of coal is reflective of its important role in the energy mix of non-OECD countries, especially China and India. In 1990, China and India combined for 13% of world emissions, but by 2004 that share had risen to 22%, which is largely because of a strong increase in coal use in these two countries (EIA, 2007).

Table 1: Regional shares of CO₂ emission, 1973 and 2005

Region/Country	Shares against world total CO ₂ emissions	
	1973	2005
OECD	65.9%	47.6%
Non-OECD Europe	1.7%	1.0%
Former USSR	14.4%	8.5%
Asia (excluding China)	3.0%	9.5%
Latin America	2.7%	3.5%
Africa	1.9%	3.1%
Middle East	1.0%	4.6%
China	5.7%	18.8%
Bunkers	3.7%	3.4%
<i>World total, mil. metric tons</i>	<i>15,661</i>	<i>27,136</i>

Notes:

1. World includes international aviation and international marine bunkers, which are shown together as Bunkers.
2. CO₂ emissions are from fuel combustion only.

Source: IEA, 2007.

Table 1 reveals that increase of CO₂ emissions in Asia is very significant over the past decades due to rapid economic growth and industrialization. Malaysia,

as part of Asia, is also experiencing rapid economic and population growth, and is expected to achieve the status of a developed nation by 2020 as envisaged under the Vision 2020 (EPU, 2001). The gross domestic product (GDP) growth of Malaysia was 7.0% during the last decade of the past century (1990-2000), and despite the Asian economic downturn in the late 1990's, the GDP growth rate was still maintained at 4.5% over the period of 2001-2005 (EPU, 2001 & 2006). In terms of population, Malaysian population has grown from 10.3 millions in 1970 to 27.6 millions in 2007, more than 260% growth over the 37-year period.

Table 2: CO₂ emissions of the world and the selected regions & countries, 2005

Region/country	Population, million	GDP, billion 2000\$	CO ₂ emissions, million metric tons	CO ₂ /capita metric ton	CO ₂ /GDP, kgCO ₂ /2000\$
World	6,432	36,281	27,136	4.22	0.75
World regions:					
OECD	1,172	28,394	12,910	11.02	0.45
Non-OECD Europe	54	152	263	4.87	1.73
Former USSR	285	525	2,303	8.08	4.39
Asia (excl. China)	2,080	1,974	2,591	1.25	1.31
Latin America	449	1,620	938	2.09	0.58
Africa	894	731	835	0.93	1.14
Middle East	187	786	1,238	6.62	1.58
China	1,311	2,098	5,101	3.89	2.43
G8 countries:					
Canada	32.27	822.39	548.59	17.00	0.67
France	62.70	1,430.13	388.38	6.19	0.27
Germany	82.46	1,961.79	813.48	9.87	0.41
Italy	58.53	1,132.83	454.00	7.76	0.40
Japan	127.76	4,994.13	1,214.19	9.50	0.24
Russia	143.11	349.85	1,543.76	10.79	4.41
United Kingdom	60.22	1,626.78	529.89	8.80	0.33
United States	296.68	10,995.80	5,816.96	19.61	0.53
Southeast Asia:					
Brunei	0.37	4.85	5.09	13.76	1.05
Cambodia	13.64	5.66	3.71	0.27	0.66
Indonesia	220.56	207.74	340.98	1.55	1.64
Malaysia	25.35	112.46	138.04	5.45	1.23
Myanmar	50.52	15.20	11.02	0.22	0.73
Philippines	83.05	93.73	76.42	0.92	0.82
Singapore	4.34	112.22	43.10	9.93	0.38
Thailand	64.23	157.07	214.29	3.34	1.36
Vietnam	83.12	44.75	80.36	0.97	1.80

Source: IEA, 2007

Table 2 presents the population, GDP and CO₂ emissions of Malaysia in comparison with the world, selected regions, and countries. Due to rapid economic growth and industrialization, CO₂ emission of Malaysia is relatively high compared to the world average and other Southeast Asian countries. In terms of per capita emission, Malaysia marks 5.45 metric tons, much higher than the world and Asian (excluding China) average figures of 4.22 metric tons and 1.25 metric tons respectively. Although this value is lower than developed countries, it ranks third in Southeast Asia, after Brunei and Singapore.

In terms of total CO₂ emission, the figure for Malaysia is also quite high compared to the other developing Southeast Asian countries, which is the third highest after Indonesia and Thailand. Although the total emission for Malaysia is only about 40% of Indonesia and 64% of Thailand, the per capita emission of Malaysia is about 3.5 and 1.6 times of the values of Indonesia and Thailand respectively.

For the intensity of CO₂ emission (CO₂/GDP), although the figure for Malaysia (1.23 kgCO₂/2000\$) is quite high compared to the world average (0.75 kgCO₂/2000\$) and most of the developed countries (0.24-0.67 kgCO₂/2000\$), it is similar to the Asian average (excluding China) and much lower than Vietnam, Indonesia and Thailand in Southeast Asia. In this respect, it can be seen that emission intensities of the developing countries are generally higher than the developed countries. Besides the factor of energy efficiency, as mentioned above, it could also be attributed to the more intensive usage of coal as an energy source.

One important issue regarding the database for CO₂ emissions in Malaysia is the inconsistency of data. For example, as shown in the above Table 2, the International Energy Agency reported that CO₂ emissions in Malaysia in 2005 was 5.45 metric tons per capita, whereas the United Nations revealed a value of 6.2 metric tons per capita for year 2002, and on the other hand, the World Resources Institute published a value of 5.4 metric tons per capita for year 2000 (IEA, 2007; UNEP, 2007; WRI, 2007). The questions are not only the consistency of the volume of emissions but also the base year of this data.

For the database on CO₂ emissions in Malaysia, the most reliable data is deemed to be the inventory developed by the Malaysia National Steering Committee on Climate Change, which was established subsequent to the signing of the Kyoto Protocol. The national GHG inventory was established during the preparation of the Initial National Communication (INC) for the UNFCCC, which was based on the 1994 database. After the Cabinet of

Malaysia had reviewed and approved the draft, the NC was launched on 18 July 2000 and submitted to the UNFCCC Secretariat on 22 August 2000 (MOSTE, 2000). Table 3 shows the emissions of the three main GHGs in 1994 on a sectoral basis. In order to provide an overall assessment, the various GHG emissions are also expressed as the equivalent of CO₂ emissions.

Table 3: Summary of Malaysia national GHG emissions and removal, 1994

Categories	CO ₂		CH ₄		N ₂ O		CO ₂ equivalent (Gg)
	Gg	%	Gg	%	Gg	%	
Energy	84,415	86.7	635	28.5	0.350	86.4	97,852
Industrial process	4,973	5.1	-	-	-	-	4,973
Agriculture	-	-	329	14.8	0.0054	13.3	6,925
Waste	318	0.3	1,267	56.8	-	-	26,925
Land use change	7,636	7.8	0.13	0.006	0.001	0.3	7,639
Total (emission)	97,342	100.0	2,231	100.0	0.405	100.0	144,314
Net total (after subtracting sink)	28,625	-	-	-	-	-	75,597

Note: Total CO₂ emission from international bunker is 785.55Gg, which has already been subtracted from the total CO₂ emissions in energy sector.

Source: MOSTE, 2000

Table 4 (INC column) shows the CO₂ emissions from final energy use (excluding electricity) by economy sector: transportation (49%), industries (41%), residential and commercial activities (7%), and agriculture (3%). It is noted that the final CO₂ emission totaling 43,768 Gg from final energy use (excluding electricity) as shown in Table 4 is very much less than the emission of 84,415 Gg estimated from primary energy supply as shown in Table 3. The latter assumed that all types of fuel are consumed for energy transformation and final use. The difference between the primary energy supply and energy demand (final use) figures could be attributed to, among others, transformation to secondary supply of energy, losses incurred during transformation and transmission, and statistical discrepancies. (MOSTE, 2000)

Subsequent to the NC that was based on the database of 1994, as an update of the first NC, the preparation of the Second NC (NC2) with the base year of 2000 was commissioned recently and scheduled to be launched in 2009. Table 4 presents the preliminary results on the CO₂ emissions from energy use in comparison with the INC data. The breakdown of CO₂ emissions by sector shows that it is dominated by transportation (31%), energy industries (28%) (within the category of 'energy industries and others'), and manufacturing industries (22%). Comparing the data between 1994 and 2000 (excluding energy industries) revealed a significant increase of 53% in CO₂ emissions from

energy use. Within these six years, CO₂ emissions had increased from 43,768 Gg to 93,621 Gg. However, it must be noted that the sectoral energy use under the 1996 IPCC Guidelines have been refined, hence a direct comparison between these two years is rather complicated.

Table 4: CO₂ emissions from fuel combustion in Malaysia based on total final use, 1994

Source of data	INC		NC2		Increase
Year	1994		2000		
Sectors	CO ₂ emissions (Gg)	Shares	CO ₂ emissions (Gg)	Shares	
Residential & commercial	3,014	7%	3,947	3%	933 (24%)
Industrial	18,083	41%	28,855	22%	10,772 (37%)
Transportation	21,375	49%	41,008	31%	19,633 (48%)
Agriculture	1,296	3%	917	1%	-379 (-41%)
Energy industries and others	n/a	-	56,019	43%	-
Total	43,768	100%	130,746	100%	-

n/a: not available. Note: In the INC, energy industries was excluded from the CO₂ emission calculation.

Source: INC: MOSTE, 2000; NC2: Azman et al., 2006

From the above, it can be seen that the national data on CO₂ emissions is rather complete although there are some variations between different sources of data. However, literature review revealed that there is complete absence of local level CO₂ emission data in Malaysia. In view of the fact that the main source of CO₂ emissions is from the urban sector (to be explained in further detail in the later sections), there is an urgent need to establish the local level (city level) CO₂ emission data in Malaysia, especially for the major cities such as Kuala Lumpur (or Klang Valley) and Johor Bahru (or the Iskandar Development Region).

Energy Consumptions

Despite high oil prices, the world economic growth is expected to continue with strong growth, driving the robust increase in world energy use. The total world consumption of marketed energy is expected to increase from about 421 quadrillion British thermal units (Btu) in 2003 to 722 quadrillion Btu in 2030 (71% increase) (cf. Table 4).

When comparing the energy consumption of developed and developing countries, from Table 4, it can be seen that the growth rate in energy consumption for the non-OECD countries, including Malaysia, accounts for three-fourths of the increase in world energy use. Non-OECD energy use is expected to surpass OECD energy use by year 2015. In 2030, total energy demand in non-OECD countries will exceed that in the OECD countries by 34%. During this projection period, the average growth rate of energy consumption in the non-OECD countries is triple of the OECD countries.

Table 4: World marketed energy consumption by country grouping, 2003-2030

Region	Energy consumption, quadrillion Btu						% p.a.
	2003	2010	2015	2020	2025	2030	
OECD	234.3	256.1	269.9	281.6	294.5	308.8	1.0
North America	118.3	131.4	139.9	148.4	157.0	166.2	1.3
Europe	78.9	84.4	87.2	88.7	91.3	94.5	0.7
Asia	37.1	40.3	42.8	44.4	46.1	48.0	1.0
Non-OECD	186.4	253.6	293.5	331.5	371.0	412.8	3.0
Europe & Eurasia	48.5	56.5	62.8	68.7	74.0	79.0	1.8
Asia	83.1	126.2	149.4	172.8	197.1	223.6	3.7
Middle East	19.6	25.0	28.2	31.2	34.3	37.7	2.4
Africa	13.3	17.7	20.5	22.3	24.3	26.8	2.6
Central & South America	21.9	28.2	32.5	36.5	41.2	45.7	2.8
Total World	420.7	509.7	563.4	613.0	665.4	721.6	2.0

Note: Totals may not equal sum of components due to independent rounding

Source: IEA, 2007

When comparing among different regions of non-OECD countries, from the same table, it is obvious that Asia constitutes the largest portion, about 54% of the energy consumption. Also, in terms of growth rate, it is 3.7% p.a., the highest among all the regions.

From the above Table 4, it was found that developing countries are consuming more energy, while among the developing countries, Asia as a region consumes the most. Table 5 presents the comparison of energy consumption patterns for G8 developed countries and Southeast Asian developing countries. In term of per capita energy consumption, the values of developed countries are very much higher than the developing countries. While among the developing countries, the per capita energy consumption of Malaysia is 106.3 million Btu, which is comparatively high compared to the other Southeast Asian countries (except Brunei and Singapore) that generally are lower than 60 million Btu.

In terms of energy intensity, comparatively, the energy intensities of the developed countries are also generally higher than the developing countries,

particularly for the case of Canada and Russia. Similarly, among the developing countries, it can be seen that the energy intensity of Malaysia is obviously higher than other developing countries, and in fact it is higher than quite a number of developed countries.

Table 5: Comparison of energy consumption pattern in selected countries, 2005

Country	Primary energy consumption	
	Per capita (million Btu)	Energy intensity (Btu per 2000 US\$)
G8 countries		
Canada	436.2	13,825
France	181.5	7,243
Germany	176.0	7,021
Italy	138.9	5,788
Japan	177.0	6,539
Russia	212.2	14,935
United Kingdom	165.7	6,048
United States	340.5	9,113
Southeast Asian countries		
Brunei	314.4	17,952
Cambodia	0.6	302
Indonesia	23.4	5,839
Malaysia	106.3	9,253
Myanmar	5.4	1764
Philippines	15.2	4,865
Singapore	457.1	15,444
Thailand	56.5	6,848
Vietnam	14.7	4,857

Source: EIA, 2007

Table 6 shows the final commercial energy consumption in Malaysia during the Eighth and Ninth Malaysia Plans period, which covers the period of 2000 to 2010. In this respect, it includes the total energy delivered to final consumers, but excluding gas, coal and fuel oil used in electricity generation. The data show that the energy consumption has grown from 1,244 PJ in 2000 to 1,632 PJ in 2005, and expected to further grow up to 2,218 PJ by 2010. In line with the rapid economic and population growths, the energy consumption growth rate for 2000-2005 was 5.6% p.a., and it is projected to increase up to 6.3% p.a. in 2005-2010.

In terms of sectoral demand, no major change is expected during the period of 2000 to 2010, in which transport and industrial each constitutes about two fifths

of the total consumption, and followed by residential/commercial, non-energy and agriculture/forestry.

Table 6: Final commercial energy demand by sector, Malaysia

Sources	Energy consumption (PJ)			Growth rate (% p.a.)	
	2000 (%)	2005 (%)	2010 (%)	2000-2005	2005-2010
Industrial ¹	477.6 (38.4%)	630.7 (38.6%)	859.9 (38.8%)	5.7	6.4
Transport	505.5 (40.6%)	661.3 (40.5%)	911.7 (41.1%)	5.5	6.6
Resident/ commercial	162.0 (13.0%)	213 (13.1%)	284.9 (12.8%)	5.6	6.0
Non energy ²	94.2 (7.6%)	118.7 (7.3%)	144.7 (6.5%)	4.7	4.0
Agriculture/ Forestry	4.4 (0.4%)	8.0 (0.5%)	16.7 (0.8%)	12.9	15.9
Total	1,243.7	1,631.7	2,217.9	5.6	6.3

Note :

¹Include manufacturing, mining and construction.

²Include natural gas, bitumen, asphalt, industrial feedstock and grease.

Source: EPU, 2006.

With respect to per capita consumption, in terms of final commercial energy demand, it was 52.9 GJ in 2000, and then rapidly increased to 62.2 GJ in 2005. In line with the projected strong national economic growth, it is projected to further escalate to 76.5 GJ by 2010, more than 40% increase over the 10-year period from 2000 to 2010 (EPU, 2006).

INTERNATIONAL COOPERATION IN HANDLING GLOBAL WARMING ISSUES

Global warming and climate change are the two greatest issues to mankind currently. The urgency to fight against them has drawn serious attentions from leaders, scientists and individuals all over the world. In fact, the event that for the first time drawing attentions from the world on the global warming and climate change issues can be traced back to the first “World Climate Conference” organized by the World Meteorological Organization (WMO) in 1979. The conference expressed concern that “continued expansion of man’s activities on earth may cause significant extended regional and even global changes of climate”, and it called for “global cooperation to explore the possible future course of global climate and to take this new understanding into account in planning for the future development of human society” (IPCC, 2004).

Subsequent to the said conference, various international efforts have been taken to monitor the climate change and to mitigate it. In 1988, the IPCC was set up and followed by the adoption of the United Nations Framework Convention on Climate Change (UNFCCC).

Presently the primary international policy framework against global warming and climate change is the UNFCCC, specifically the Kyoto Protocol, which sets emission limits for many of the world's most economically developed nations. Under the Kyoto Protocol, the participating developed countries are committed to reduce their GHG emissions on an average of about 5% by the target years of 2008 to 2012 (UN, 1998).

For post-Kyoto Protocol, during the United Nations Climate Change Conference 2007 held in Bali, Indonesia, it was decided to adopt the Bali Roadmap, which charts the course for a new negotiating process to be concluded by 2009 that will ultimately lead to a post-2012 international agreement on climate change (UNFCCC, 2007).

Also, during the G8 Summit 2007 held in Heiligendamm on 6-8 June 2007, the participating countries have agreed to consider seriously the target of halving of GHG emissions by 2050 (G8, 2007). Presently, the common global target is to cut the GHG emissions, particularly CO₂ emissions, by 50% of the present level by year 2050. In this respect, Japan has launched the national campaign of 'Cool Earth 50', which targeting to cut the CO₂ emissions up to half of the present level, by the year 2050. Also, the State of California of the United States is aiming to cut the emission to 80% below 1990 level, while London has set the target of 60% carbon emission reduction from 2000 level, both with the common target year of 2050 (TMG, 2006).

Presently the international policy frameworks on combating climate change are focusing on the developed countries. However, due to rapid increase of GHG emissions from developing countries (cf. Table 1 and Table 2), particularly for the case of China and India, there are increasing concerns on the necessity to cap emissions from the developing countries. For the case of Malaysia, Malaysia is one of the 172 countries

signed the Kyoto Protocol but is not within the 35 countries that have committed to cap their emissions.

In spite of the absence of international commitment on the cap of CO₂ emissions, Malaysian Government has been continuously promoting energy efficiency, usage of renewable energy and combating climate change. In this respect, Malaysia is one of the 16 countries signed the *Cebu Declaration on East Asian Energy Security Cebu, Philippines, 15 January 2007* (ASEAN, 2007). Under the Cebu Declaration, the participating countries officially acknowledged the energy and climate change issues. All the countries concerned have agreed to make concerted efforts to improve energy efficiency, to promote alternative and renewable energy, and to mitigate GHG emissions.

ROLES OF URBAN PLANNING IN HANDLING ENERGY AND CARBON DIOXIDE ISSUES

Urbanization, Energy Consumptions and CO₂ Emissions

The most significant increase of energy consumptions and GHG emissions is taking place in cities, where rapidly expanding populations enjoy higher living standards and material affluence than people in the rural areas (Fong et al., 2007a; IGES, 2004). With respect to GHG emissions, Larson (2007) reported that the share of GHG emissions in building sector, thus in urban area, is in the range 20% to 25%, and this would be higher in developed countries. It is therefore clear that strategies for the reduction of energy consumption and GHG emissions would have to be focusing on urban sector, which is the main source of energy consumptions and GHG emissions.

Rapid urbanization is in progress all over the world, and the urban population is expected to continue to increase. In 2000, world urban population was about 2.9 billion (47.2% of world population) and it is expected to rise to about 5 billion (60.2% of world population) by 2030 (cf. Figure 3). During the period of 2000-2030, the world urban population is projected to grow at an average rate of 1.9% per year.

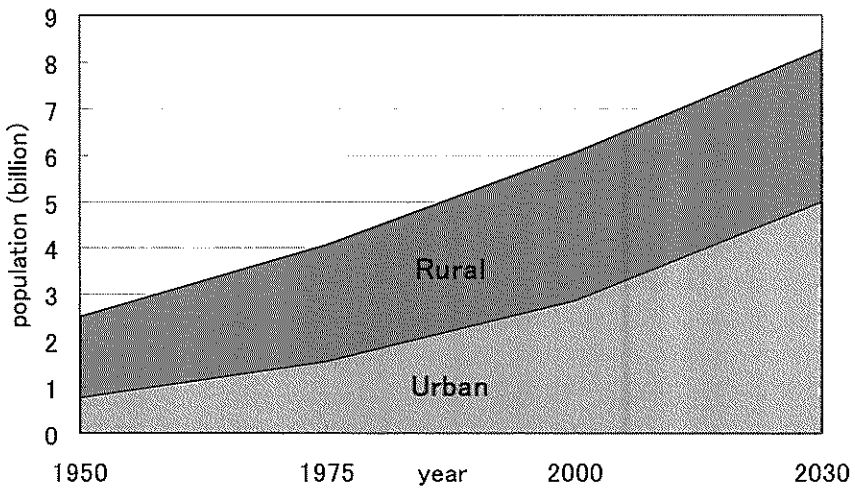


Figure 3: World urban and rural population, 1950-2030 (UN, 2002)

Although concentration of people in cities brings advantages in terms of work and modern conveniences, it causes deterioration of living standards by various environmental problems, and in global environmental problems that spread beyond national borders (AIJ, 2005). Thus, urban environmental problems are significant elements in global environmental problems. Hence, if no immediate action is taken in cutting down the energy consumptions in urban sector, the impacts on climate change and other associated adverse impacts on the global, regional and local environments would be worsen.

Rapid urbanization has resulted in more rapid change of microclimate in the urban areas. One of the phenomena is the UHI effect whereby a zone of higher air temperature is found in the central area of a city, displaying temperature contours like an island of heat. The world average temperature increase due to UHI effect is 0.006°C (IPCC, 2007). There are many factors contributing to the occurrence of UHI phenomenon, and energy consumptions and CO_2 emissions are among of the main factors, whereby the heat generated by the consumption of energy by air-conditioning equipment, lighting systems, automobiles, factories, etc. is released into the atmosphere (AIJ, 2005).

Although urban energy consumption is one of the main causes of UHI phenomenon as well as global climate change, unfortunately, presently, the nature of energy use in and GHG emissions from cities is still not well understood. Although a number of research projects on sectoral energy use for

industries, urban transportation and so on have been conducted from the viewpoint of managing air pollution, an overall picture of energy consumption and CO₂ emissions is still missing (IGES, 2004). Due to the growing concern about GHG, it is thus vital to understand energy use at city level in greater detail and to take GHG emissions into consideration so that systematic actions can be implemented in the urban planning process. In this respect, the present authors have carried out several studies focusing on the topics of energy conservation and CO₂ reduction (Fong et al., 2007a~2007g; Ho 2005 & 2007; Ho and Fong, 2007).

Urban Planning, Energy Consumptions and CO₂ Emissions

The issues of global climate change and the UHI phenomenon has drawn concern among policy makers, urban planners and scientists on the importance of promoting a low carbon city. Researchers and policy makers responsible for climate change and energy modeling have used the term low carbon society in 2003 when the developed nations announced a target for reducing CO₂ emissions in order to stabilize the world climate. Low carbon society projects have been initiated by Japan/UK collaboration to draw out comprehensive vision and definition of low carbon society (NIES, 2006).

Scientific research has been carried out to investigate the urban CO₂ emission scenarios, and to study the methodologies to reduce urban energy consumptions and for achieving low carbon city. From these studies, it is obvious that urban planning is playing an important role in creating a low energy consumption and low CO₂ emission city. It is found that there are several urban planning related factors that can determine the extent and nature of energy use and CO₂ emissions in cities, as explained below (Fong et al. 2007a~2007g; Ho 2005 & 2007; Ho and Fong, 2007; IGES, 2004):

Compactness and density of development

The compactness and density of urban development has very significant influence on the transportation system, thus influencing the energy consumption and CO₂ emissions. A highly compact city facilitates the transit oriented development (TOD) that directly reduces the private vehicle trip and reduces the energy consumptions and CO₂ emissions from the transportation sector. The compactness of urban development also influences the district heating and cooling using co-generation systems. In this respect, urban sprawl results in the necessity of lengthy distribution systems, and thus undermines efficient energy use.

Urban structure

Urban structure and urban functions affect energy use, and thus CO₂ emissions, as they influence the transportation systems. Mixed land use (residential, commercial, industrial, etc.) results in different energy use than does segregated land use. A reduction of physical separation of activities has been urged in nearly all studies of energy and spatial structure. Urban zoning policies and industrial relocation from city centers to suburb areas significantly influence the travel demand and energy use. Spatial strategies such as compact cities and TOD are effective in reducing energy demand for transportation. However, any saving from transportation energy requirement must not be outweighed by losses in economies of scale including energy economic of scale.

Settlement pattern

Comparative analyses of different urban structures suggest that an energy efficient settlement pattern would consist of small to medium sized settlements or settlement clusters. Within settlements, over-concentration should be avoided. Residential areas should be planned around more disperse clusters of employment and services in relatively compact urban sub-units. However, high densities would not necessarily be a feature of this settlement pattern.

Transportation system

The transportation system is one of the key factors affecting the urban energy consumption and CO₂ emissions. As mentioned above, the transportation system is heavily depends on the urban structure. Ho and Fong (2007) pointed out that increased density favored public transportation because of critical mass. By doing so, a shift to public transportation can be done easily. Also, energy implications of transportation systems depend on a number of factors, such as the availability of infrastructure for rail and road networks, mass transportation systems, the share of public and private transportations, as well as the role of alternative fuel vehicles. Besides, socio-economic factors, such as income, are also influencing the transportation pattern. In most of the developing countries, rising incomes and perception of social status through car ownership have resulted in cars dominated transportation. This trend results in increased demand for transportation and eventually increases the urban energy demand and CO₂ emissions.

Income level and lifestyle

Past research on the relationship between income and energy use at the national scale has clearly demonstrated that there is a strong correlation between per capita commercial energy consumption and GDP (IGES, 2004). It is generally accepted that per capita energy use increases with income. High income is

associated with better lifestyles and higher material affluence, which eventually result in increased energy use and CO₂ emissions.

Building technologies and floor space use

Building-related technologies such as air conditioners, district heating and cooling systems, insulation systems and other building energy management systems have a significant effect on energy use. Services such as lighting and space heating/cooling depend directly on floor space, whose use depends on a number of factors such as real estate market prices, business culture and socio-cultural factors.

ENERGY AND CARBON DIOXIDE EMISSION CONSIDERATIONS IN THE URBAN PLANNING PROCESS IN MALAYSIA

Spatial Planning Framework in Malaysia

In Malaysia, development planning is practiced at three tiers of government as shown in Figure 4. At the national level, development planning in the country operates within the stated goals outlined in long-term Vision 2020 and the Outline Perspective Plans (OPPs), then followed by the short- and medium-terms Malaysia Plans, National Physical Plan (NPP) as well as the other sectoral policies/plans.

In this respect, spatial development is mainly guided by the NPP. In order to achieve the goals of NPP, which is to establish an efficient, equitable and sustainable national spatial framework to guide the country towards achieving developed nation status by 2020, four mutually supportive objectives have been identified as follows:

- a. To rationalize national spatial planning for economic efficiency and global competitiveness
- b. To optimize utilization of land and natural resources for sustainable development
- c. To promote balance regional development for national unity
- d. To secure spatial and environmental quality and diversity for a high quality of life.

In 2006, National Urbanization Policy (NUP) was formulated to complement the NPP. NUP serves as the main thrust for all urban planning and development activities in Peninsular Malaysia including development plans at the state and local level. This policy outlines the thrusts, policies, measures and

implementation plans to coordinate and manage the urbanization process of the country. It guides and coordinates the planning and urban development of the country to be more efficient and systematic, particularly to handle the rapid increase of urban population, with emphasis on balancing the social, economic and physical development within urban areas. It also serves as the foundation to encourage racial integration and solidarity for those who reside in the urban areas.

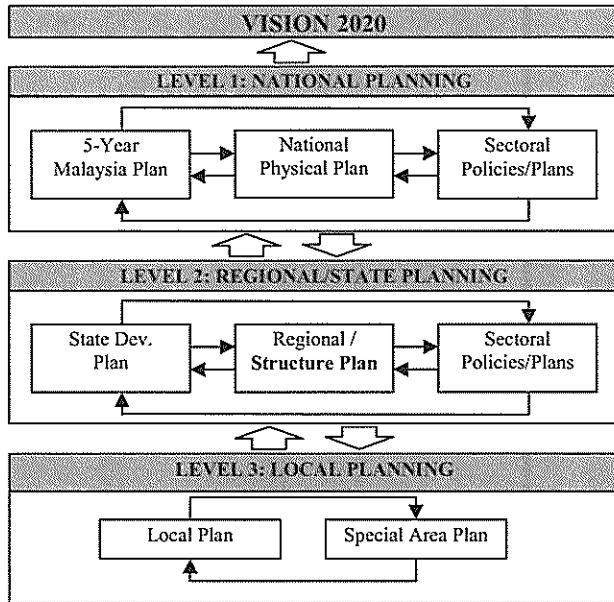


Figure 4: National development planning framework of Malaysia (JPBD, 2005)

At the state level, development is guided by the Structure Plans and sectoral policies that are articulated from time to time. Local level planning is carried out in the form of statutory development plans such as the Local Plans and Special Area Plans for the local authority areas. Structure Plans distribute the expectation of development within each state and propose major economic and infrastructure projects for the states. The time perspective for structure plans is 20 years, and for the current set of Structure Plans, commensurate with the time perspective of Vision 2020. (JPBD, 2005)

Absence of Energy Consumption and CO₂ Emission Considerations

Presently, most of the developed countries are committed to cut down their CO₂ emissions as stipulated under Kyoto Protocol as well as the recent declaration during the G8 Summit 2007 in Heiligendamm, Germany (G8, 2007). In this respect, developing countries are still lapsed behind most of the developed countries. However, being a country of responsible, Malaysia, one of the fastest growing developing countries in Southeast Asia, is continuously putting aggressive efforts in combating global warming. This section examines the present efforts in controlling energy consumptions and CO₂ emissions in Malaysia, from the perspective of spatial planning.

As mentioned above, spatial development in Malaysia is mainly guided by the NPP. Presently, there is no specific policy related to energy conservation and controlling of CO₂ emissions in the NPP. However, there are several principles that have indirect implications on energy conservation, namely *Policy 3: Maximize use of existing infrastructure*, *Policy 6: Favor public transport over private transport*, and *Policy 7: Compact urban forms*.

For the case of NUP, although NUP is a comprehensive plan, there is also no policy directly referred to energy conservation and reduction of CO₂ emission. Policies that may have indirect implications on energy planning are found in Policy Thrust 1 and Policy Thrust 3 as follows:

- Thrust 1 : Towards an efficient and sustainable urbanization**
- Thrust 2 : Development of a resilient, dynamic and competitive urban economy
- Thrust 3 : Towards an integrated and efficient urban transportation system**
- Thrust 4 : Provide quality urban services, infrastructure and utility
- Thrust 5 : Create a conducive urban living environment with a distinct identity
- Thrust 6 : Effective urban governance

Part of *Policy Thrust 1 - Towards an Efficient and Sustainable Urbanization* highlighted the policy to promote national growth conurbation policy, and specific conurbation zones have been identified. The advantage of the national conurbation policy in term of energy conservation is that it promotes economic of scale and energy efficient system of these designated growth regions.

Compact city development can be developed to optimize energy utilization in the region by reduction in movement and transportation energy.

Policy Thrust 3 - Towards an Integrated and Efficient Urban Transportation System promotes an integrated and efficient urban transportation system. As transportation sectors consume more than a quarter of the total energy consumption in Malaysia, an efficient and comprehensive transportation system is vital. The current pressing issues are increase in private car ownership and low utilization of public transportation. The policy thrust promotes the use of integrated public transportation system emphasizing on multi-modal transportation terminal, implementation of TOD development, provision of Park and Ride Terminals, use of environmental-friendly vehicles to reduce level of air pollution.

SECTORS OF STUDY:

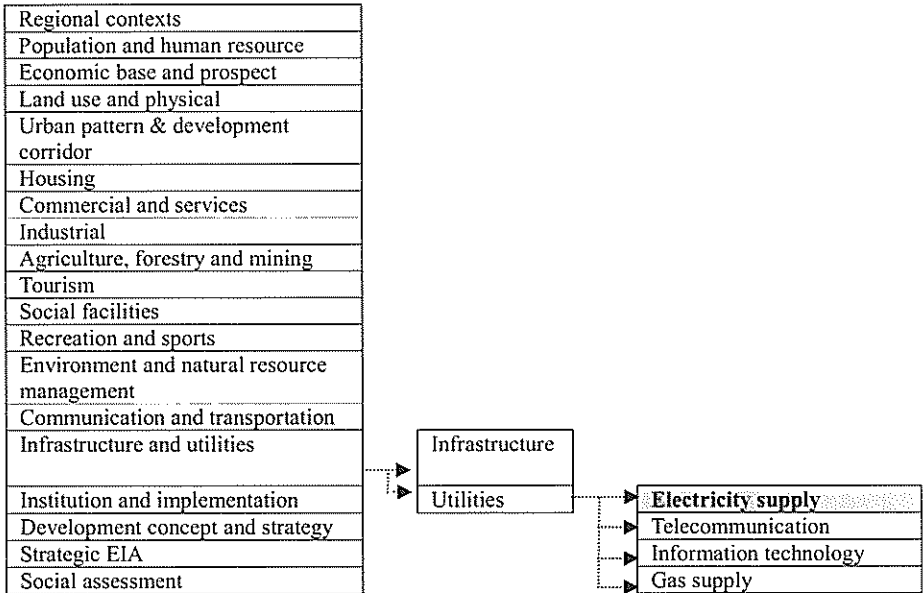


Figure 5: Energy sector (electricity supply) was a sub-sector under the utilities sector in the Johor Structure Plan 2001-2020 study (JPBD, 2001)

For the State and local levels, in the process of the preparation of Structure Plans and Local Plans, energy sector study very often focuses on fulfilling the energy demand rather than investigating measures to reduce the city-wide or region-wide energy consumption through an integrated approach. For example, in the study of Johor Structure Plan 2001-2020, the energy sector was

considered as one of the sub-sectors under the utility sector, also, in fact, the study focused on electricity supply rather than energy demand and supply as a whole (cf. Figure 5). Besides, energy issue was also not covered in the environmental sector despite that energy and CO₂ emission issues have been widely recognized as global environmental issues that require immediate attentions from all parties.

On a whole, spatial planning framework in Malaysia is still lacking serious considerations on the issues of energy consumptions and CO₂ emissions. Although there are some policies in the NPP and NUP indirectly favoring energy conservation, there is still no measure that directly focuses on promoting energy conservation/efficiency and capping CO₂ emission. Also, instead of promoting energy conservation/efficiency, most of the Structure Plans, focus on fulfilling the continuously increasing energy demand so as to support the desired high economic growth rate.

CONCLUSIONS REMARKS

This paper highlighted the importance of energy conservation and reduction of CO₂ emissions from both global and Malaysian points of view. Although Malaysia is presently not a developed nation, and there is no clear commitment to cut down CO₂ emissions under any international framework, toward achieving the developed nation status under the Vision 2020, it is necessary to take concerted efforts to cap CO₂ emissions as part of the global efforts in combating global warming and climate change, while maintaining the desired economic and population growths.

The earlier parts of this paper pointed out that the main contributors to the global warming phenomenon are energy use and land use change. In this respect, urbanization is one of the essential aspects that must not be neglected in handling global warming issues, as the main portion of energy consumption and CO₂ emission is occurring in the cities. Hence, spatial planning that deals with planning for land use and urban structure plays a very important role in controlling energy consumption and CO₂ emissions in the urban systems.

While many countries have recognized the importance of the role of spatial planning in energy conservation and reduction of CO₂ emissions, in Malaysia, to date there is still no spatial planning policy that directly deals with the energy and CO₂ issues. Instead, in the urban planning process, efforts have been put on fulfilling the high energy demand (which focusing more on electricity supply) so as to support the desired high economic growth. Hence, this paper aims to

highlight the importance of energy conservation and CO₂ reduction as the core considerations in the spatial planning process in Malaysia, from national till local levels.

For instance, in the preparation of Structure Plans, instead of trying to fulfill the expected high energy demand, measures should be taken to cut down the energy consumptions and CO₂ emissions, so as to achieve a balance between economic development and environmental conservation. Every proposal in the structure plan, to a certain extent, would have some impacts on the energy consumptions and CO₂ emissions in the planning area as a whole. For instance, a proposal to convert a forest area to commercial development would not only increase the energy consumption and CO₂ emission in the area concerned, but will also reduce the capacity of carbon sink due to the loss of green areas. Hence, due consideration must be taken on the impacts of each proposal on energy consumptions and CO₂ emissions. In this respect, it is necessary to develop and incorporate a decision making tool to assess the overall impact of development plans (or proposal options) on the city or regional level energy consumptions and CO₂ emissions as a whole. This decision making tool should be able to assist the decision makers as well as the other relevant stakeholders in making the best choices of development options with due considerations on both economic and environmental aspects.

For the development of this decision making tool, it is necessary to develop a comprehensive model that is able to provide a holistic analysis on the various development options on the overall urban energy consumptions and CO₂ emissions. In this respect, the present authors are attempting to develop a comprehensive but reasonably simple model that is suitable to be applied in the urban planning process in Malaysia, and parts of the research outputs are reported in Fong et al. (2007a & 2007b) and Ho and Fong (2007).

There are many strategies that can conserve energy and reduce CO₂ emissions through spatial planning. For the case of Malaysia, being a developing country, economic development is no doubt the most important consideration in any development plan. Hence, it is vital to identify the best practice with minimum energy consumption and CO₂ emission while achieving the desire economic growth. In this respect, the concept of the Kaya Identity would serve as an important guide in achieve a low energy consumption and low CO₂ emissions society under the concept of low carbon city. The Kaya Identity involved 3 main concepts, namely *per capita activity*, *energy intensity* and *carbon intensity* (cf. Figure 6). From the concept, it is clear that reducing CO₂ emission by reducing per capita activity is not feasible for a developing country like Malaysia.

Instead, it is important to reduce CO₂ emission by reducing energy intensity and carbon intensity.

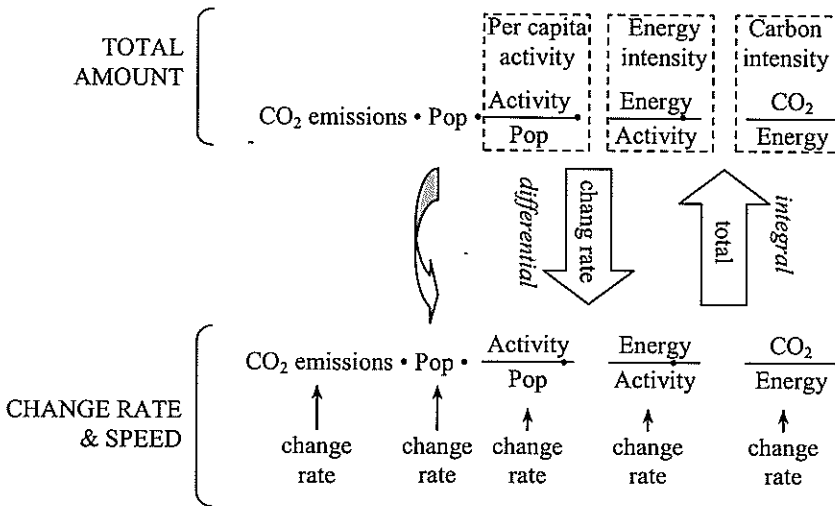


Figure 6: Concept of Kaya Identity
 (Source: NIES, 2006)

In order to examine the relationship between energy and spatial planning, it is necessary to look into more detailed variables of both of these aspects. The three main components in Figure 7 define the interrelationship between energy demand and spatial structure are (1) Energy demand and supply, (2) Urban form and other aspects of built environment, and (3) Mechanisms of interaction between the energy system and spatial structure. Demand and supply of energy will influence the urban form. The configuration of urban form will affect the interaction of spatial structure and system interaction. It will then form a cyclic cycle in the near future when its technology is more advance and appropriate as well as the demand for clean energy is more pressing in future.

This simplified concept attempts to illustrate the energy-spatial relationship, which in reality is far more complicated. The concept must also allow feedback systems that would themselves stimulate new developments and adjustments in the energy system. From the concept, the most commonly explored interactions have been those between various attributes of urban form (size, shape and density) and energy requirement for transportation. The questions that arise are whether any anticipated society changes should be guided by planning intervention into socially desirable forms or whether land use planning control

is used to ensure spatial structures, which are both efficient in their consumption of energy resources and realistic.

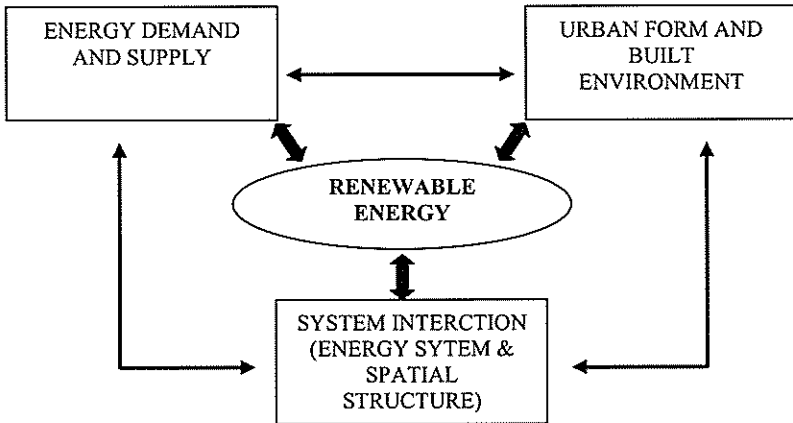


Figure 7: Interrelationship between energy and urban form (Ho, 2007)

On the whole, while it is widely recognized that in achieving a low energy consumption and low CO₂ emission sustainable society, it is important to carry out continuous research on the energy saving technologies and measures in various energy consuming sectors such as transportation, industrial, commercial and residential sectors; more importantly, it requires a holistic analysis and clear understanding of the nature of the highest energy consuming and CO₂ emission sector i.e. the urban sector as a whole. This paper thus serves as the starting point towards incorporating energy and CO₂ issues as the core part of spatial planning process in Malaysia, in achieving a low carbon sustainable society of future.

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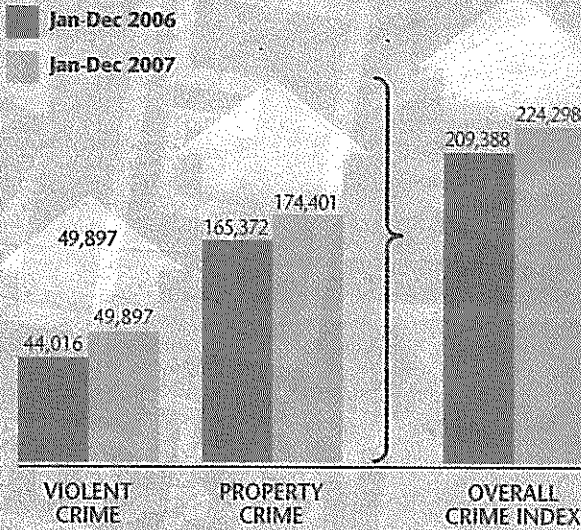
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SOME ISSUES ON CRIMES IN
THE MALAYSIAN'S NEWSPAPERS

CRIME INDEX COMPARISON (Jan-Dec 2006 / Jan-Dec 2007)



IN THE STATES

	Jan-Dec 06	Jan-Dec 07	+/-	%
1 KEDAH	1,682	2,439	757	45.01
2 SARAWAK	2,167	2,922	755	34.84
3 KELANTAN	961	1,198	237	24.66
4 SELANGOR	12,395	15,104	2,709	21.86
5 PAHANG	1,077	1,263	186	17.27
6 SABAH	1,702	1,919	217	12.75
7 PENANG	2,951	3,280	329	11.15
8 MALACCA	1,167	1,265	98	8.40
9 TEREANGANU	709	751	42	5.92
10 PERAK	3,039	3,211	172	5.66
11 JOHOR	6,611	6,900	289	4.37
12 KUALA LUMPUR	7,539	7,639	100	1.33
13 N. SEMBILAN	1,843	1,857	14	0.76
14 PERLIS	173	149	-24	-13.87
MALAYSIA	44,016	49,897	5,881	13.36

NEW STRAITS TIMES WEDNESDAY, JANUARY 9, 2008				
PROPERTY CRIME				
Offences	Jan-Dec 06	Jan-Dec 07	+/-	%
Burglary (night)	20,080	24,440	4,360	21.71
Car thefts	11,154	12,427	1,273	11.41
Thefts	42,472	44,617	2,145	5.05
Burglary (day)	8,792	9,159	367	4.17
Motorcycle thefts	65,462	67,584	2,122	3.24
Snatch thefts	11,074	11,127	53	0.48
Van, lorry and heavy machinery thefts	6,338	5,047	-1,291	-20.37
TOTAL	165,372	174,401	9,029	5.46
VIOLENT CRIME				
Offences	Jan-Dec 06	Jan-Dec 07	+/-	%
Gang robbery without firearms	2,723	7,067	4,344	159.53
Rape	2,454	3,177	723	29.46
Criminal intimidation	6,699	8,119	1,420	21.20
Assaults	5,843	6,806	963	16.48
Gang robbery with firearms	67	77	10	14.93
Rioting	2,291	2,608	317	13.84
Molest	2,064	2,320	256	12.40
Extortion	1,554	1,692	138	8.88
Murder	606	588	-18	-2.97
Robbery without firearms	19,467	17,241	-2,226	-11.43
Robbery with firearms	248	202	-46	-18.55
TOTAL	44,016	49,897	5,881	13.36

Rising crime index has Abdullah worried

■ By V. Vasudevan
news@nst.com.my

KUALA LUMPUR: The crime index has gone up worryingly and a multi-pronged strategy is being applied to bring it down, the prime minister said.

"I am worried and anyone looking at it will be worried. Seriously, I am very concerned about the percentage of crime in Malaysia," Datuk Seri Abdullah Ahmad Badawi said.

"We have to act on this quickly. We have to make sure the people know about the situation," he said after a three-hour briefing at Bukit Aman.

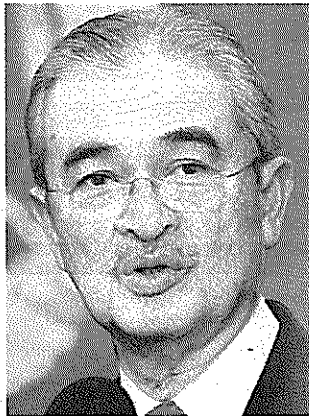
The number of serious crimes increased by 13.36 per cent nationwide last year, with gang robbery without the use of firearms rising by more than 159 per cent.

"The crime index is getting higher and it can create anxiety among the public.

"When there is fear, the public will be apprehensive about going out at night to the hospital or even the sundry shop."

Abdullah said to help arrest and bring down the crime figures, the police had come up with a strategy, including:

- hiring of contract police personnel who are retiring or have retired;
- installing more closed-circuit television cameras in buildings



Datuk Seri Abdullah Ahmad Badawi says it is important to reduce anxiety among the public

and public places:

- setting up more police stations in shophouses and housing estates;
- appointing civilians to administrative positions and thereby releasing police personnel for their main duties;
- fast-tracking recruitment.

Abdullah said the measures the government was taking would

bring down the crime rate.

"It is important to take this drastic action and reduce anxiety among the public."

Abdullah said the spike in crime statistics was partly attributed to the inclusion of five new categories to the crime index since 2006.

They are: criminal intimidation, outraging modesty, causing hurt, extortion and rioting (fights in-

volving more than five people or damaging public property; not street demonstrations.)

Abdullah said the government has been addressing the upward trend in crime and had in the last budget set aside funds for the recruitment of 60,000 police personnel by 2010.

"It is not an easy task. Anyone wanting to be a policeman must be trained and this takes time. Moreover, we don't have that many police training centres," he said.

The prime minister said the government was setting up two new police training centres in Langkawi, Kedah, and Bentong, Pahang.

He said funding for the measures would not be a problem as there were allocations for the police which had yet to be utilised.

"These funds are for infrastructure development and we can use them for this purpose first and later provide additional funds for the infrastructure."

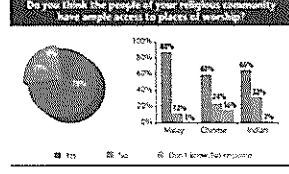
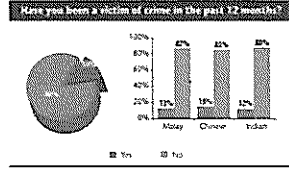
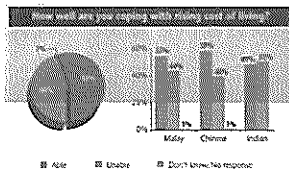
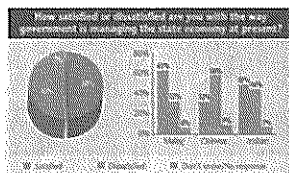
He said the government had been doing its best to retain the best police personnel.

"We want to attract the best and retain the best," he said, while procedures were in place to ensure speedy promotions without depending on interviews and reports. He said performance and examinations were being used to provide speedy promotions for personnel.

NEWSFOCUS

ISSUES AFFECTING LOCAL AREA

Issue	Percentage
Unemployment	74%
Overcrowding	74%
Transportation	74%
Water supply	74%
Electricity supply	74%
Waste disposal	74%
Health services	74%
Education services	74%
Public safety	74%
Other	74%



Inflation, crime top issues for voters

By Abdul Razak Ahmad
news@msi.com.my

INFLATION, crime and the skills of local transplants are the top issues for Selangor voters ahead of the coming general election, an NST survey has found.

The survey, conducted by the Merdeka Center, polled 758 registered voters in the state between Jan 18 and 24. It was run in a series of public forums by the New Straits Times Press Berhad to track voter sentiment.

In an open-ended question, close to a quarter of the respondents cited economic matters as the most important problem or issue that needed to be solved in the state now.

They included inflation and the rise in the cost of living, unemployment and other related problems like factories like closing world of prices.

Inflation 15 per cent cited crime and public safety as their chief concern. For another nine per cent, it was the influx of illegal immigrants to the state.

Despite the worries, the poll noted that the respondents were generally satisfied with the job, or the state at the time the survey was conducted.

It said that although there were concerns over rising prices, the majority still reported favourable personal income levels.

There were, however, mixed views on the economic outlook and on confidence in the government's handling of the economy.

On the availability of jobs and business opportunities, for example, Malays and Indians were relatively more positive compared with the Chinese.

The public also had mixed views over the performance of the economy, except split between those who felt it was positive and those who felt it was either negative or that there was no change.

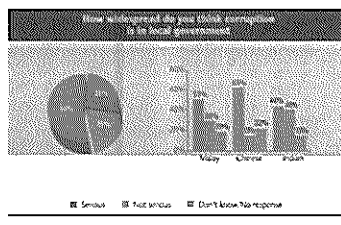
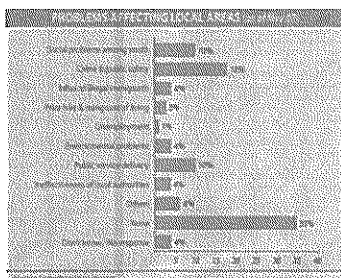
Presented with the survey findings, Selangor Menteri Besar Datuk Seri Dr Mohd Haniffa said the state had been closely tracking the issues.

He acknowledged that there were some worries over matters like possible price hikes, inflation and the economic outlook, and said the state would reduce two "report cards" next month to detail some of the state's achievements in various sectors, including the economy.

The reports will be distributed nationwide, and are aimed at reassuring the public on the state's economic performance and outlook.

The state government, Dr Khir said, would also launch a major effort soon to reach out and engage target groups, namely the middle class and business and trading communities.

The policies to which can address these concerns are there, he added, are not well explained. With good planning and resources like the report cards, they will be more confident



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state," added Hudaib.

The NST Selangor voter survey was done after the Bersih Nov 10 rally but concluded a day before the Bersih Nov 22 gathering.

Half the respondents felt the action of authorities in the relocation of a Hindu temple in Kampung Rimba Jaya was fair. Another 19 per cent said that it was unfair.

Despite the issues, Dr Khir, who is state BN chairman, said support levels for the ruling coalition remained strong.

He said a recent BN-commissioned poll involving 15,000 respondents from the state found 70 per cent saying they would continue to vote for the BN in the coming polls.

Dr Khir did not name the opposition that ran the poll, but said the MCA-Bersih Penang Jaya Utara was the only possibility, though perhaps not set for the BN in Selangor at the moment.

NOTE: For more details on the survey findings, go to www.nst.com.my

Concern over high-profile crimes

IN tracking voter sentiment on public safety — another major concern apart from the economy — the findings of the Merdeka Center survey noted a marked increase in the level of concern since April.



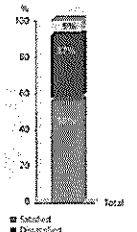
The survey attributes this to various reports of high-profile crimes during this period. They include numerous robbery and snatch theft incidents, as well as cases such as the reported allegations of gang activities in Sarawak in April, as well as a June gathering by a group of people in front of the Johor menteri besar's residence to express outrage over the crime situation.

It was prevalent among one-in-every six respondents. Despite the worries, there was a near even balance between respondents who felt public safety to be mainly a family and societal responsibility, as opposed to those who believed that it's mainly the government's responsibility.

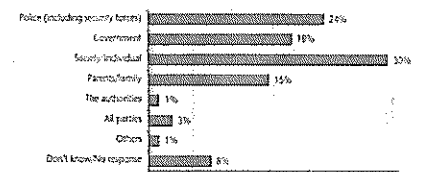
The high level of concern by respondents carried through to August, when the story of a missing 9-year-old girl grabbed public attention. The discovery of Nurin Jazlin Ibrahim's body the next month further increased public concern. Nearly 100 per cent of respondents said they were aware of the case, with over 90 per cent expressing concern over child safety.

The survey found that crime and violence against children came second on the list of con-

INTERACTION WITH POLICE IN PREVENTING CRIME



WHO IS MOST RESPONSIBLE FOR PUBLIC SAFETY?

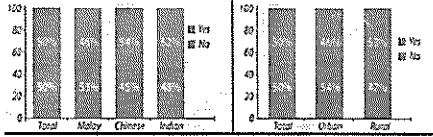


cerned on the list of issues that would affect public sentiment in the coming general election, with nearly half of the respondents reporting as such.

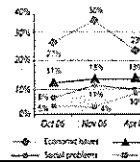
In listing voters' top concerns, what was also striking were some of the things that the respondents collectively

placed lower on their list of immediate priorities. They include some of the other hotly-debated public issues over the past year, such as racial inequality and a lack of racial integration.

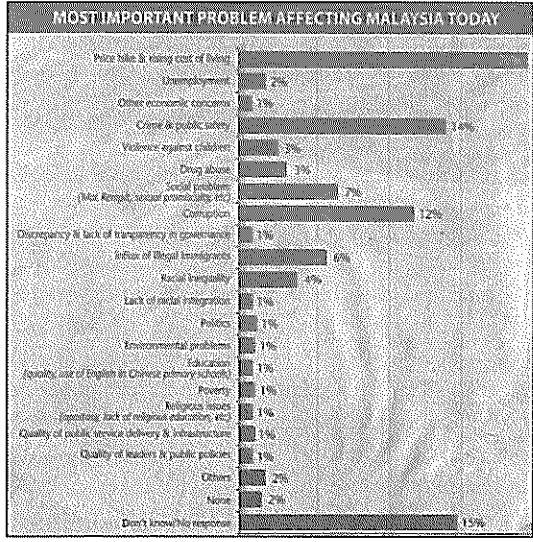
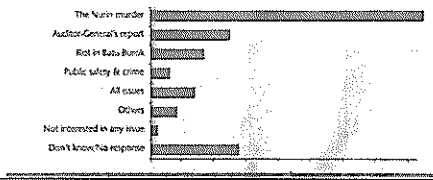
AWARENESS OF THE JUDICIARY VIDEO CLIP ALLEGATION



TOP ISSUES ACROSS TIME



GREATEST CONCERN OF THE PUBLIC (as of October 2007)



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