

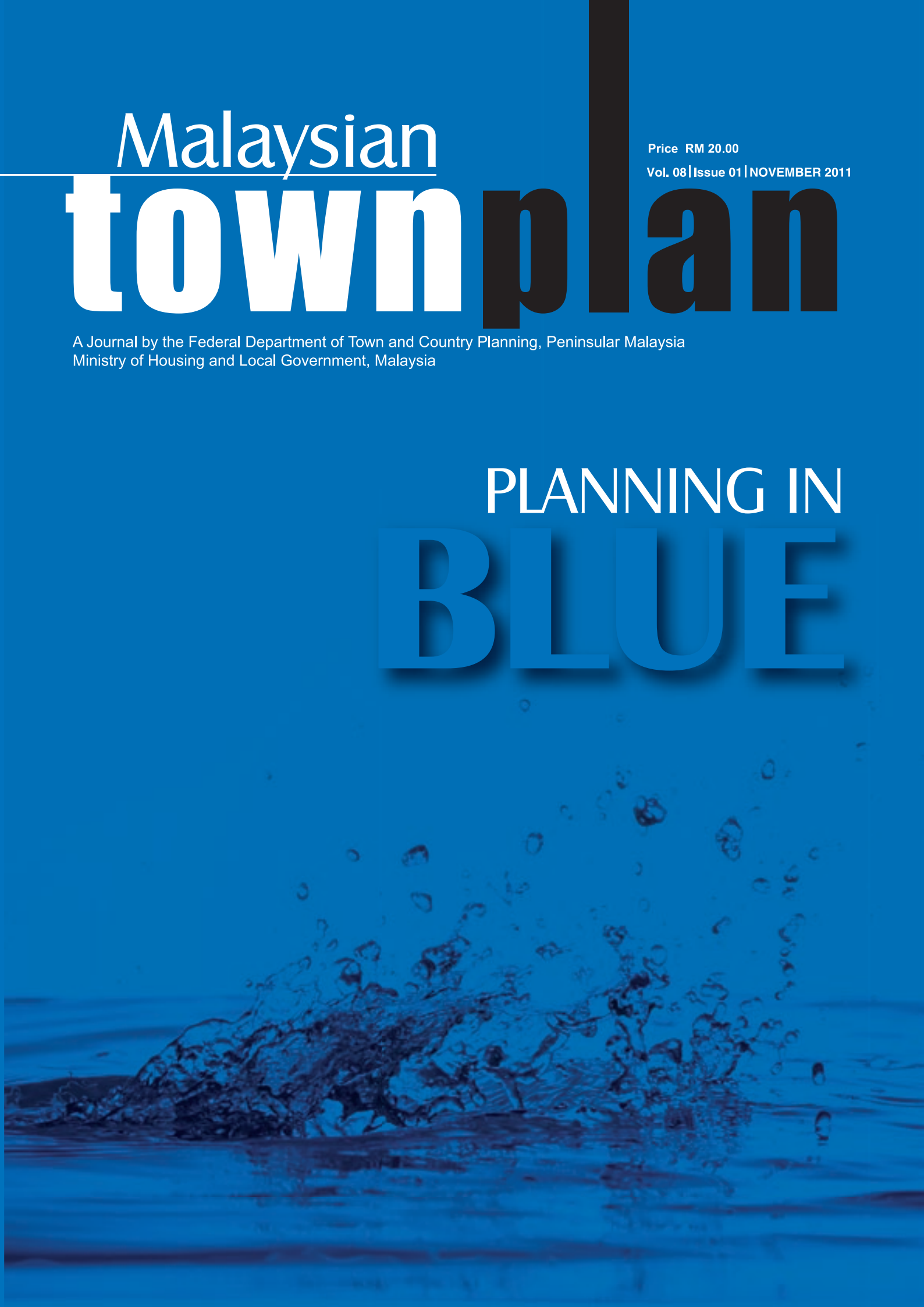
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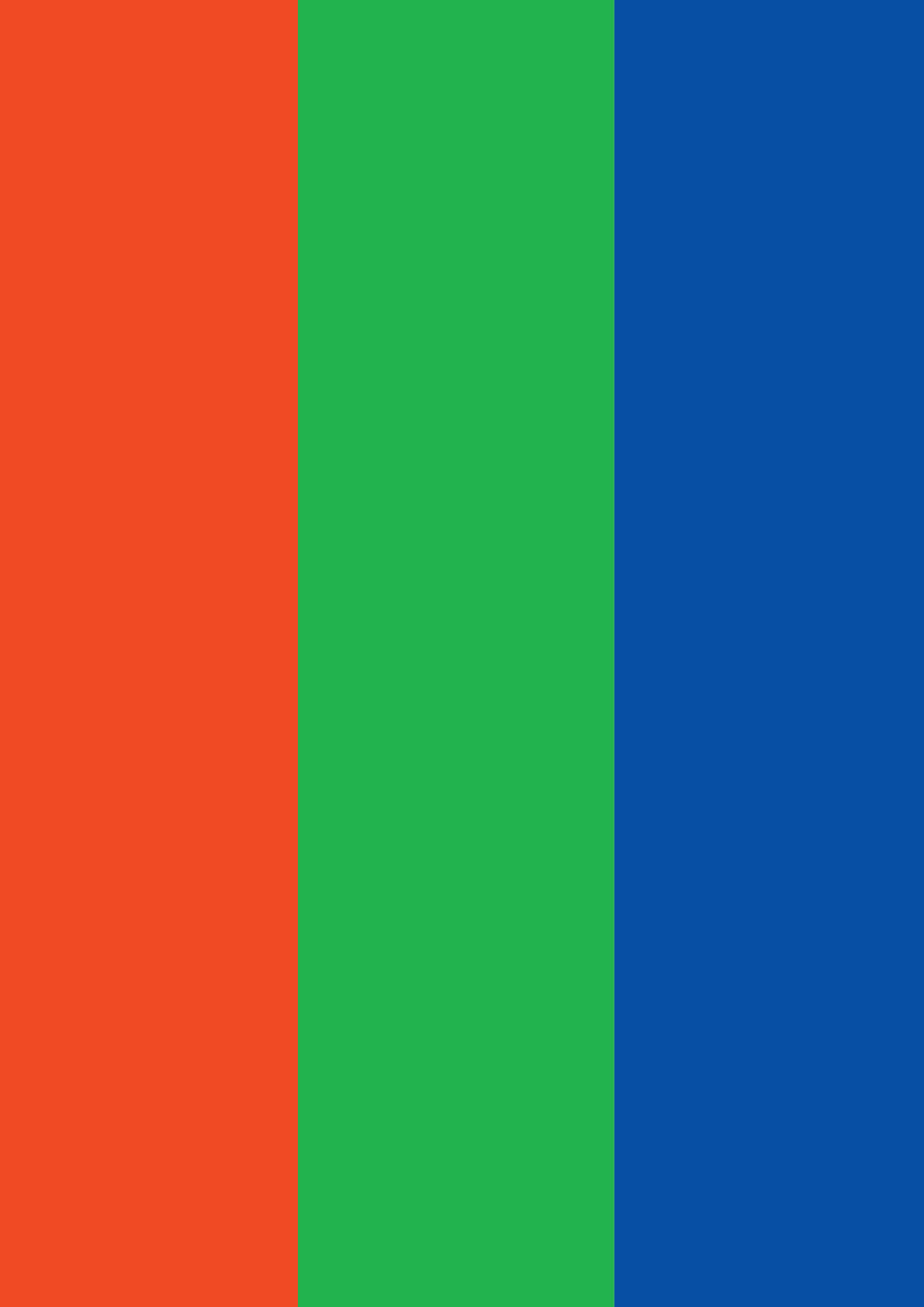
PLANNING IN **BLUE**



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MALAYSIAN TOWNPLAN

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NOVEMBER 2011

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PLANNING IN BLUE

Think BLUE and one would immediately think of the quality of life mantra - 'Blue skies and everything nice' or the romantic geographical features of 'the Blue Danube'. Elsewhere, we could also plan and design to take away the 'Monday Blues'. Though planning is multicolour, this time we focus on Planning in Blue – representing water and the skies, the coasts, islands and rivers and the well being of the environment. Planning in blue would also promote water stewardship in tandem with marine and riverine environmental protection and sustainable use. Water too has become a success factor in planning and design, many successful urban redevelopment in brownfield areas around the world are planned around water bodies such as in old harbours and docks, even though the waters may be brackish and not blue.

Think Blue is also a green campaign, so the interrelationship of blue and green are instrumental, many sustainable development advocates have made urban green and blue networks one of their top priorities. Blue is also a part of the rainbow and even if one is colour blind, one can still see the blue in the rainbow; such is the power of blue. Blue is cool, it is time to steward more blue into our plans.

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RIVER AND WATER BODIES: THE CREATOR'S GIFT



ABSTRACT

All civilizations were related to mighty rivers: Euphrates, Nile, Indus, Oxus and the Hwang Ho. The earliest conception of paradise has the image of a river deeply embedded within it. This paper outlines the role played by river in the images of paradise as explained in the Quran and the traditions of the Prophet p.b.u.h. It also presented the examples of how this image has inspired the development of Islamic Gardens, whose prototype was innovated and refreshed throughout the Islamic World from Andalusia (Spain) to Persia and Mughul India where it reached its climax.

Keywords: Paradise, Civilization, Piety.

INTRODUCTION

Since time immemorial rivers had played major role in the development of man. Civilizations had invariably been founded at major points along a river and expanded within the river valley before engulfing the rest of the valley. By the beginning of the third millennium BCE, the various river-oriented civilizations were primed for rapid cultural development. There were at the time five principal cultural hubs: China, Egypt, Mesopotamia, Margiana, and the Indus. The Indus Ghaggar-Hakra Civilization centered along the Ghaggar-Hakra river, was probably the oldest of them of hundreds of towns and villages with Harappa, Mehrgarh, Mohenjo-Daro and Dholavira as the principal cities. The drying up of the Ghaggar-Hakra river most probably due to a major earthquake in the Himalaya which changed the course of the river led to the decline and finally the abandonment of the cities. Beginning with the coming of the Mehrgarh people from the Baluchistan hills into the plains of the rivers Indus and Ghaggar-Hakra in 2500 BCE, the civilization's fortune was determined by the rivers upon whose valleys the cities were built. It was established that the urbanization of the Ghaggar-Hakra River valley which formed the first phase of the civilization was began at about 2800 BCE. In the second phase prosperity brought about by trade and industrial production led to the dominance of four of its cities: Harappa, Mohenjo-Daro, Rakhigarhi and Ganweriwala at about 2500 BCE. The third phase was marked by the new urbanization of areas in the south and east at around 2200 BCE. In the second millennium BCE, the Ghaggar-Hakra begun to dry up and though this led to the last phase of post-decline re-urbanization around Kutch around 1700 BCE but these cities too were later abandoned.

The Indus Ghaggar-Hakra civilization was in contact with the early empires of Mesopotamia. It was from the Mesopotamian tablets that recorded trade between the two civilizations which helped archeologists to decipher the name of the people that populated the Indus Ghaggar-Hakra Civilization i.e. the Meluhha. Though the civilization of Mesopotamia was actually a complex of smaller civilizations that was only first unified under Sargon of Akkadia who ruled

from his capital Agade, it was also based on the river, in fact two rivers – the Euphrates and its tributary, the Tigris. Earlier the Ubaid and Sumerians settled and developed the lower Euphrates and developed social system sufficiently complex and centralized to produce enough economic surplus large enough to develop and pay for the technology of irrigation. Cities that marked the dawn of civilization such as Uruk, Ur, Eridu and Sumer were located where the river meets the Persian Gulf; with Ur believed to be the birthplace of Ibrahim a.s. The Sumerians believed that a pantheon of gods gave each city protection and guidance, amongst them Goddess of Water, Enki. In an area which is basically arid desert, water is everything to life. Dilmun, which was the first pleasure garden or paradise garden which became the locale for the Epic of Gilgamesh, a poem written on cuneiform tablets was called the Garden of Eden in English.

The Akkadians who were from the north infiltrated central Mesopotamia and later displaced the Sumerians. The civilization was kept alive through the ability of the successive rulers to build and maintained an intricate system of irrigation, channeling water from the Euphrates and Tigris for the extensive farms and urban system within the valley though dominance changed hands a little to frequent for stability to be long-lasting. As there was no real sense of a nation and each city keeping a certain degree of autonomy led by rulers who always aspired for bigger realms, the civilization was wrought by constant wars which finally gave way to more powerful external forces like the Archimaeids of Persia and later the Assyrians from beyond the headwaters of the Euphrates conquering and ruling over the fertile valley.

Little was written about Margiana in history books. It is now established that they were the missing link between the Mesopotamians and the Indus Ghaggar-Hakra civilization as they were geographically midway between the two. The word is derived from Persian *margush* and sometimes also called the Oxus civilization as it was based on yet another river, the Oxus which drained northwards into the Aral Sea. The Margianans were in active trade with both the Mesopotamians and the Indus Ghaggar-Hakra

especially in bronze and other metals. Plan of Gonur, its capital and other archeological remains including spoke-wheeled chariots showed that the civilization reached quite a high level of sophistication.

The name Egypt came from Greek *aiguptos* was actually a corruption of ancient Egyptian, *haykuptah* meaning “The House of Ptah” which was the name of a temple. It was but one of the examples of the sophisticated civilization based on the River Nile. Unlike Mesopotamia and China, Egypt was organized around an efficient and vast workforce that had little contact with the religious practices of the ruling elite (Francis D.K. Ching *et al.*, 2011:39). It had everything that was needed to develop the civilization: huge workforce of slaves, labourers, technicians, bureaucrat, and cooks almost exclusively employed for royal projects. There was also no shortage of building materials: stones from the Nile, colourful red granite of Aswan, the white marble of Gebel Rokham, black basalt of Faiyum and soft sandstone from Nubia. The River Nile provided not only water and fish but its annual floods would deposit fertile soil to replenish the fertility of its farm especially in the delta – and of course the main transport for the building materials which were transported on rafts downstream from the upper reaches of Nubia.

Mighty rivers were also the locales of early Chinese civilization. Contrary to the perception of many, it was not a single-origin civilization, rather was actually a mix of contemporaneous cultures: the Hongshan (5000-2900 BCE) on the shores of the Bohai Bay and the Yangshao (5000-3000 BCE) in the upper reaches of the Hwang Ho while the Longshan (3000-2000 BCE) connected the two in the lower part of the river. The Hongshan villages and states were founded along Laoha River, Daling River and Liao River which pour their water into the Bay of Bohai as the Hwang Ho is. The Liangzhu (3400-2250 BCE) was founded in the lower part of the Yangtze River, with the Baodun (2800-2000 BCE) in the river's upper reaches and the two connected by the Shijiahe (2500 – 2000 BCE) in the middle Yangtze River. The Hongshan and Yangshao cultures were shamanistic while the others were based on ancestor worship.

RIVERS AND ISLAM

The importance of rivers in Islam can only be fathomed from the many references made of them in both the Holy Quran and the Traditions (*Hadith*) of the Prophet. Direct connections and not just allegorical references are found in both, showing proof that while one's actions on earth accounts directly for what one gets in the Hereafter, Islam is a religion of continuity as well as finality; building upon the civilizations that were before it. The Prophet, Muhammad p.b.u.h. was narrated by Malik bin Sasaa as saying in one *hadith*: "Then I was shown Sidrat-ul-Muntaha (i.e. a tree in the seventh heaven) and I saw its Nabk fruits which resembled the clay jugs of Hajr (i.e. a town in Arabia), and its leaves were like the ears of elephants, and four rivers originated at its root, two of them were apparent and two were hidden. I asked Gabriel about those rivers and he said, 'The two hidden rivers are in Paradise, and the apparent ones are the Nile and the Euphrates.'" In fact, in a book of Muslim, a *hadith* narrated by Abu Huraira reported that: Saihan, Jaihan, Euphrates and Nile are all among the rivers of Paradise (Book #40, *Hadith* #6807). Needless to say, the reference to the Nile and Euphrates connects Islam to river-based cultures at the time of the cradles of human civilization. It is to be remembered that the Pharaoh, who claimed to be god, laid his claim through his alleged control over rivers i.e. the Nile and its tributaries as mentioned in the Holy Quran: And Fir'aun (Pharaoh) proclaimed among his people (saying): "O my people! Is not mine the dominion of Egypt, and these rivers flowing underneath me. See you not then?" (43:51).

RIVERS AND THE QURAN

Contrary to some claims, the Quran actually used *jannah* as the general term for 'paradise' rather than *firdawz* which some Western writers said as the original word of the heavenly place. *Jannatul-firdawz* is actually the name of the highest level of paradise. The word *jannah* is generally translated as 'garden', giving the meaning that the final abode for pious men is a place with a garden-like environment – lush and green with flowing river flowing under it as the Quran said: "And those who had believed and done righteous deeds, they will be a garden (of

Paradise), delighted" (30:15). 'Garden' also presumes a place of beauty and exquisite aesthetics delighting the heart and refreshing the body and soul – epitomizing active relationship between man and environment. However 'the garden' as any others that Allah promise in the Quran can only be expressed in infinity the comparison to the mundane world is but only a station to acquire the necessary knowledge to appreciate the beauty of Allah's creations with the climax in that of the garden (*jannah*). One element that provides beauty to the paradisiacal environment is water, specifically river. The picture of a perfect river is described in the Quran: "Allah has promised to the believing men and the believing women gardens, beneath which rivers flow, to abide in them, and goodly dwellings in gardens of perpetual abode; and best of all is Allah's goodly pleasure; that is the grand achievement" (9:72). We are also told that the banks are gold and beds of pearls and rubies and soil which as a smell sweeter than musk.

The word 'river' appears 60 times and is part of 55 verses in the Quran – attesting to the importance of it in expressing the message of Allah to humankind. Very early in the Quran, Allah commanded Muhammad p.b.u.h: "And give glad tidings to those who believe and do righteous good deeds that for them will be Gardens under which rivers flow (Paradise). Every time they will be provided with a fruit therefrom, they will say: "This is what we were provided with before," and they will be given things in resemblance (i.e. in the same form but different in taste) and they shall have therein *AzwajunMutahharatun* (purified mates or wives) and they will abide therein forever" (2:25). Being good is a nature (*fitrah*) of creation and in normal sense, does not give the doer the privilege to expect any forms of rewards but Allah in his omnipotent kindness to his creations has promised this supreme reward for those that chose to do good seeking nothing else but His pleasure and Allah is the All-Knowing. It might be discerned that 'the river' which flows under the garden is the critical element to the paradisiacal environment filled with trees which bear fruits and where companions are on-hand to complete its joyous atmosphere. Similar theme of river is also mentioned in the Quran as an element of sustainable development

sought after by man to secure his family and his own future: "Would any of you wish to have a garden with date-palms and vines, with rivers flowing underneath, and all kinds of fruits for him therein, while he is stricken with old age, and his children are weak (not able to look after themselves), then it is struck with a fiery whirlwind, so that it is burnt? Thus does Allah make clear His *ayat* (proofs, evidence, verses) to you that you may give thought" (2:266).

It is natural that man seeks to be successful in life. This is represented by him attaining a certain status amongst his peers as well acquiring worldly possessions: women and children as well as properties and assets. But Allah promises greater things in paradise with rivers flowing under it: "Beautified for men is the love of things they covet; women, children, much of gold and silver (wealth), branded beautiful horses, cattle and well-tilled land. This is the pleasure of the present world's life; but Allah has the excellent return (Paradise with flowing rivers) with Him" (3:14). This is followed by an explanation that for the pious: say: "Shall I inform you of things far better than those? For *Al-Muttaqun* (the pious - See V.2:2) there are Gardens (Paradise) with their Lord, underneath which rivers flow. Therein (are their) eternal (homes) and *AzwajunMutahharatun* (purified mates or wives). And Allah will be pleased with them. And Allah is All-Seer of the (His) slaves" (3:15). The presence of rivers caps the largesse of kindness that Allah bestows upon the pious.

One of the methods being used in the Quran to explain the quality of divine love to His creations, especially man, is the use of analogy. While reminding man about the creation of the Earth, man exemplified His kindness in the form of 'river'. The best example of this is in Verse 74 of Surah al-Baqarah i.e. the second chapter of the Holy Book: "Then, after that, your hearts were hardened and became as stones or even worse in hardness. And indeed, there are stones out of which rivers gush forth, and indeed, there are of them (stones) which split asunder so that water flows from them, and indeed, there are of them (stones) which fall down for fear of Allah. And Allah is not unaware of what you do" (2:74). Lulled by the environment of plenty, man tends to forget his place in the matrix of being – he becomes

ungrateful, insolent and prideful – the heart that is dead like a stone. Allah the Ever-Forgiving, bring back 'life' into his 'dead' heart and He use the analogy of 'river gushing from the stones' to express this – just like he made alive a dead earth of rocks by making water gushing through and between the rocks to bring life to it.

When Allah desires to differentiate between the faithful and those that waver in their faith, He tested them not only with hardships and sufferings but also with kindness and things which their hearts long for. In one of these cases, Allah used 'river' as the element of examination; he tested the limit of suffering which the army of Talut (Saul) was prepared to endure to exhibit their trust in Him: "Then when Talut (Saul) set out with the army, he said: "Verily! Allah will try you by a river. So whoever drinks thereof, he is not of me, and whoever tastes it not, he is of me, except him who takes (thereof) in the hollow of his hand." Yet, they drank thereof, all, except a few of them. So when he had crossed it (the river), he and those who believed with him, they said: "We have no power this day against Jalut (Goliath) and his hosts." But those who knew with certainty that they were going to meet Allah, said: "How often a small group overcame a mighty host by Allah's Leave?" And Allah is with *Al-Sabirun* (the patient)" (2:249). He rewards those who believe with Paradise: Verily, those who believe, and do deeds of righteousness, their Lord will guide them through their Faith; under them will flow rivers in the Gardens of Delight (Paradise)(10 :9). The Quran also described the garden clearly: The description of the Paradise which the Muttaqun (the pious) have been promised: Underneath it rivers flow, its provision is eternal and so is its shade; this is the end (final destination) of the Muttaqun (the pious), and the end (final destination) of the disbelievers is Fire (47:15). In this garden the pious will dwell forever enjoying endless blessings of the Creator: "These! For them will be 'Adn (Eden) Paradise (everlasting Gardens); wherein rivers flow underneath them; therein they will be adorned with bracelets of gold, and they will wear green garments of fine and thick silk. They will recline therein on raised thrones. How good is the reward, and what an excellent *murtafaq* (dwelling, resting place)! (18:31)." "Adn (Garden of Eternity) was described as:

'Adn (Gardens of Eternity) which they will enter, under which rivers flow, they will have therein all that they wish. Thus Allah rewards the Muttaqun" (16:31).

Man was given intellect ('*aqal*) to ponder at the wonders of Allah's creations so that he might be grateful and become a believer. For this He asks that man reads His *ayat*: "And it is He Who spread out the earth, and placed therein firm mountains and rivers and of every kind of fruits. He made *zawjainithnain* (two in pairs - may mean two kinds or it may mean: of two varieties, e.g. black and white, sweet and sour, small and big). He brings the night as a cover over the day. Verily, in these things, there are *ayat* (proofs, evidence, lessons, signs, etc.) for people who reflect" (13:3). However man transgresses the limits that Allah decreed defined for him by His prophet. Because of that commits sins for which he is going punished with a spell in Hell. But Allah, the Most Forgiving has given man chance to redeem himself through acts of repentance: "O you who believe! Turn to Allah with sincere repentance! It may be that your Lord will expiate from you your sins, and admit you into Gardens under which rivers flow (Paradise) - the Day that Allah will not disgrace the Prophet (Muhammad p.b.u.h.) and those who believe with him. Their Light will run forward before them and (with their Records - Books of deeds) in their right hands. They will say: "Our Lord! Keep perfect our Light for us [and do not put it off till we cross over the Sirat (a slippery bridge over the Hell) safely] and grant us forgiveness. Verily, You are able to do all things." (If you do so) He will forgive you your sins, and admit you into Gardens under which rivers flow, and pleasant dwellings in 'Adn (Garden of Eternity); that is indeed the great success (61:12). For Muhammad p.b.u.h. Allah has promised him a river in the Paradise: "Verily, We have granted you (O Muhammad) Al-Kauthar (a river in Paradise)" (108:1). This was explained in a hadith narrated Ibn 'Abbas: "The word 'Al-Kauthar' means the abundant good which Allah gave to him (the Prophet Muhammad). Abu Bishr said: I said to Said, "Some people claim that it (Al-Kauthar) is a river in Paradise." Said replied, "The river which is in Paradise is one item of that good which Allah has bestowed upon him (Muhammad)" (Book #76, Hadith #580). A description of this hadith by the Prophet gave details

of the paradisiacal river in a hadith narrated by Anas bin Malik: "The Prophet said: 'While I was walking in Paradise (on the night of Mi'raj), I saw a river, on the two banks of which there were tents made of hollow pearls. I asked, "What is this, O Gabriel?' He said, 'That is the Kauthar which Your Lord has given to you.' Behold! Its scent or its mud was sharp smelling musk!" (The sub-narrator, Hudba is in doubt as to the correct expression) (Book #76, Hadith #583).

RIVERS IN THE HADITH

Allah is the All-Knower and His knowledge is borderless, including knowing all deeds of His servants, even how minute they might be. In his Shahih, Bukhari who recorded 36 hadith with 'river' being mentioned 64 times related a narration by Abu Said al-Khudri: "The Prophet said, "When the people of Paradise will enter Paradise and the people of Hell will go to Hell, Allah will order those who have had faith equal to the weight of a grain of mustard seed to be taken out from Hell. So they will be taken out but (by then) they will be blackened (charred). Then they will be put in the river of Haya' (rain) or Hayat (life) (the Narrator is in doubt as to which is the right term), and they will revive like a grain that grows near the bank of a flood channel. Don't you see that it comes out yellow and twisted" (Book #2, Hadith #21). Needless to say, as in the Quran, river is also used as an analogy of cleansing as narrated Abu Huraira: "I heard Allah's Apostle saying, "If there was a river at the door of anyone of you and he took a bath in it five times a day would you notice any dirt on him?" They said, "Not a trace of dirt would be left." The Prophet added, "That is the example of the five prayers with which Allah blots out (annuls) evil deeds" (Book #10, Hadith #506). Rivers are also said in the hadith as having the source from under the Throne of Beneficent as narrated by Abu Huraira: The Prophet said, "Whoever believes in Allah and His Apostle offers prayers perfectly and fasts (the month of) Ramadan then it is incumbent upon Allah to admit him into Paradise, whether he emigrates for Allah's cause or stays in the land where he was born". They (the companions of the Prophet) said, "O Allah's Apostle! Should we not inform the people of that?" He said, "There are one-

hundred degrees in Paradise which Allah has prepared for those who carry on Jihad in His Cause. The distance between every two degrees is like the distance between the sky and the Earth, so if you ask Allah for anything, ask Him for the Firdaus, for it is the last part of Paradise and the highest part of Paradise, and at its top there is the Throne of Beneficent, and from it gush forth the rivers of Paradise" (Book #93, Hadith #519).

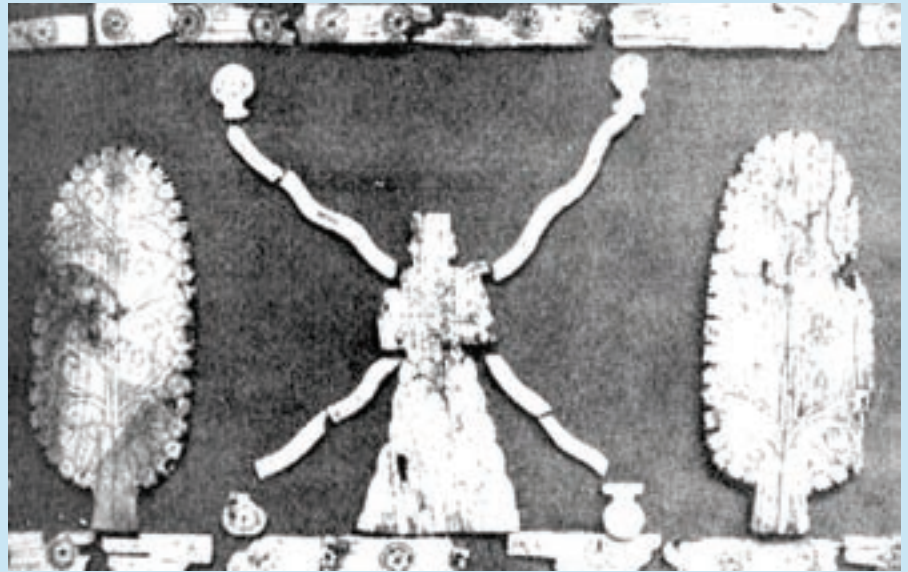
The word 'river' appears 29 times in 18 hadith recorded by Muslim. In one of these, 'Amr b. Yahya transmitted with the same chain of transmitters who narrated: They would be cast into the river which is called (the river of) life, and (both the narrators) did not doubt the hadith. The text transmitted by Khalid is: just as seeds sprout beside the flood water; and in the hadith of Wuhaib it is: Just as the seed sprouts in the silt or deposit left by flood (Book #1, Hadith #356). Allah's Apostle p.b.u.h. supplicated for rain to fall in the mountains on the river-beds so that the trees would grow: "The Messenger of Allah (may peace be upon him) again raised his hands and said: O Allah, let it (rain) fall in our suburbs and not on us, O Allah (send it down) on the hillocks and small mountains and the river-beds and at places where trees grow (Book #4, Hadith #1955).

INTERPRETATION OF RIVERS IN WORLDLY PARADISE GARDENS (ISLAMIC GARDENS)

The Quran is not the only holy book that talked about Adam and Eve as being expelled from their paradisiacal abode to the profane earth because they disobeyed God by eating the fruit of a forbidden tree. Similar line could be traced to the Bible; the progenitors of man have failed miserably when faced with the temptation. Knowing the limit of what one can do in an environment, even when it a paradise, it seems is a key to the continued connection between man and nature.

The concept of paradise is as old as man. Amongst the cuneiform tablets of proto-literate period of Sumer of the ancient Mesopotamia civilization, a 278-line poem described a Sumerian paradise. Kramer, S.M (1956) was quoted by Moynihan: "Dilmun was a land that was "pure, clear and bright", whose fortunate inhabitants

Figure 1: Water god, probably Enki, being flanked by trees in a garden of paradise (Moynihan, E.B., 1979:3).



knew neither sickness, violence or aging, but which had no fresh water. The Sumerian God of Water, Enki, ordered the Sun God, Utu, to create a divine garden by providing fresh water from beneath the earth; Utu obeyed and Dilmun was transformed into a Paradise of Gods with fruit trees, green fields, and meadows (Figure 1).

In early 1930s a British oil prospector on his way to visit an emir of a pearling village of Bahrain, chanced upon a field where there were hundreds of mounds almost perfectly shaped in conical form; they turned to be tombs. After much research he concluded that this was the site of Dilmun, a great Persian civilization that controlled trade between Mesopotamia and the Indus Valley. When discovered the place was not at all like the paradisiacal garden described in the poem but was a desolate place in a coastal Arabian desert. If his conclusion is true, then Dilmun as described by the cuneiform poem must have been a worldly perfect environment. What was the reason for its demise as a garden city? We could only speculate but there are enough evidences to tell us that the whole of Arabian Peninsula was at one time a place of abundance; there were forests and grasslands rich with all sorts of animals and wildlife. Dilmun was the abodes of gods. In fact, Ninlil, the Sumerian goddess of air and south wind was known to have her home there. The picture of Gilgamesh, the first divine king of the Sumerians wandering within this Garden of the Gods should convince us that the lush forest surrounded by deserts was green enough to be called paradise:

*And lo! The gesdin (tree) shining stands
With crystal branches in the golden sands
In this immortal garden stands the Tree,
With trunk of gold, and beautiful to see.
Beside a sacred fount the tree is placed,
With emeralds and unknown gems is graced.*

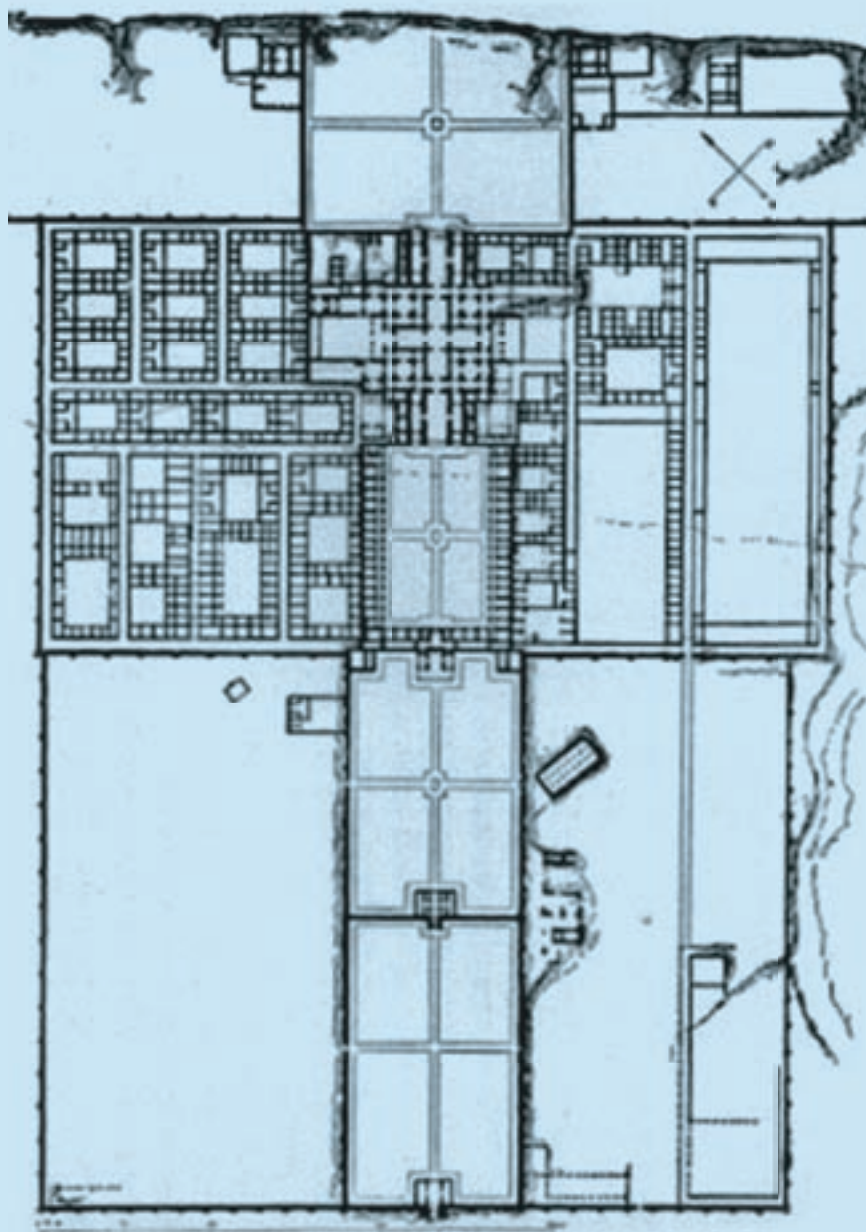
Dilmun was located within a region constantly contested by almost all known empires from time immemorial. Though Nebuchadnezzar of Babylon was credited for constructing the famous Hanging Garden of Babylon, constant conflicts must have vicious effects on the region as a whole. The battles for supremacy between Akkadians and Babylonians not only shifted the boundaries many times but must have had harsh effects on the environment as well. The Archaemenids of the Persian Plateau were the first foreigners to force their rule over the area by conquering the Babylonians and the Assyrians. They were great builders of gardens where irrigation channels are constructed to divide the garden into a series of four-fold modules. This was a start to the model of paradeiza, a word that became 'paradise' in English which must have been derived from its Greek

corruption of 'paradeisos' – which as usual came by the way of Middle English viz. 'paradis' from Latin 'paradisus'. Firdaus, the Arabic word for one of the seven heavens is said to originate from paradeiza. They not only built gardens but huge hunting parks which they filled with wild animals and beasts brought in a great expense and effort from many foreign lands.

A period of relative prosperity under the Selucidian Greeks was not enough for the land to recover from the scorch-earth destruction inflicted by the earlier Greeks under Alexander of Macedonia who laid their cities to waste in their effort to totally eliminate their Persian nemesis. Ruins of great cities including Persepolis and Pasargadae which were built by Cyrus the Great and his sons, remained to these days reminders of the extent of destruction a wrath of what was basically a vengeful man was capable of inflicting. Following the great tradition of love for nature and garden, the indigenous Sassanids who finally managed to dislodge the Greeks after suffering years of subjugation, reverted the land not only into rich agricultural areas but constructed great gardens following the model of the earlier paradise of Cyrus. When Islam finally supplanted Zoroastrianism as the religion of the people in the region in mid-664AD after the Battle of Qadisiyyah, it did not only continue this tradition but perfected it by giving it a religious significance as well. Al-Jannah, a garden model of paradise in the Quranic description found its worldly form in the paradise of the Persians was adapted throughout the Muslim world from Andalusia to Mughul India.

The Abbasids who relocated the capital of the Islamic Ummah from Damascus to Baghdad in 762 AD when they superseded the Umayyads were great builders of gardens, turning the banks of the Euphrates and Tigris into gardens and hunting parks with such famous names as Balkuwara of Samara (Figure 2). When the Mongols under Hulagu Khan inflicted their barbaric destruction onto the intricate irrigation systems of the centre of the Abbasid Empire in plain of Mesopotamia, they turned a paradise into living hell of deserts and marshes. This deed was only repeated when the American bombed Iraq in an effort they justified as saving the world from the tyrannical Saddam Hussien

Figure 2: Palace of Bulkawara, a palace of Caliph al-Mu'tasim of the Abbasid which turned the arid desert into his capital city of Samarra, watered by intricate system of irrigation canals that drew in water from the Tigris River.



in 2003; the Iraqis are now making great effort to forestall similar consequences. The barbarian Mongols were seduced by the beauty of the land they ransacked and finally became great builders and patrons of gardens as they ruled Persia as Ilkhans, setting the tempo for the revival of paradise garden traditions of the Safavids of Isfahan and the Mughuls of India. Together these two great Islamic empires left unparalleled legacy to the world i.e. living cities within parks rather than a utopian environment as envisioned by Ebenezer Howard's in his Garden City concept. Ilkhan Oljaitu converted to Islam and took the name of Mohammad Kobandeh. He built the biggest brick-domed structure as part of a mausoleum at Soltaniyeh (Figure 3).

Isfahan was called the most beautiful city in the world when Shah Abbas the Great (1587-1629) embellished it with the Chaharbagh, which literally means 'four-fold garden', the almost surrealistic settings for the ChehelSutun, the great Imam Mosque complex, Ali Qapu, and the HashtBihest, among others (Figure 4). Chaharbagh is defined by four channels of water that seem to flow from the centre of the garden, much like the way it is described in the Quran, where the four rivers exit the point under the Throne of Beneficent.

Figure 3: Mausoleum of Oljaitu (Mohammad Kobandeh) at Soltaniyeh, Iran: The biggest brick-domed structure in the world set within an extensive *paradeiza*. The ability to draw water from the small river next to the complex ensure the sustainability of the garden until the present time (Photo: Ismawi Zen, 2010).



Figure 5: Bagh-i-Fin at Kashan is one of the most beautiful Islamic gardens in the world (Photo: Ismawi Zen, 2010)



Figure 4: ChehelSuton within the setting of Chaharbargh, Isfahan (J. Brookes, 1987:110)



Figure 6: The Gardens of Golestan, Tehran designed along the *paradeiza* model.



In fact under the Shah Abbas, the whole of Persia was a garden. He embellished towns and villages with parks and gardens as he set about building not only roads but stop-over places for the travellers, much like the Rest and Recuperate (R&R) centres along our modern highways. These centres were called caravanserai as they also included over-night facilities such as rooms and board for the weary travellers as well stables for animals of burden such as horses and mules. He endowed Kashan with one of the most beautiful gardens in the world, the Bagh-i-Fin and Yazd with Doulat-a Bagh, Shiraz with Bagh-i Takht and Bagh-i Eram while Taj-i abad is actually

a garden setting for a caravanserai located on one of the routes connecting Isfahan and his northern domain skirting the Caspian Sea. Unlike the modern urban parks, these gardens were actually part of networks of urban greens; thus providing important nodes for wild wildlife as the gardens are connected directly to wild fringe of their respective cities (Figure 5). Later rulers of Iran were equally enthusiastic about gardens. Golestan is a palace complex within a garden was built by the Qajars in Tehran and though with the advent of modernism, still was designed following the strict model of a *paradeiza* (Figure 6).

The Mughuls of India claimed ancestry to the Mongol hordes of Genghiz Khan whose southward sweep stopped at the almost insurmountable Hindu Kush. However like the Timurids before them, the Ilkhanids of Persia were the Mughuls most probable immediate forerunners since Babur was actually a princeling from Farghena, a small principality in a valley of the inhospitable Afghan mountains before he undertook the great adventure of conquering the Sultanate of Delhi. Babur, the first of the great Mughul emperors, started his push through the Hindu Kush after he established himself in Kabul. Though living in turbulent time with constantly

Figure 7: Mughul workmen working in a garden of Babur (John Brookes, 1987:169)



shifting borders, he started the great tradition of gardening which came to characterize the Mughul rule of India (Figure 7).

Despite being generally less endowed compared to the Persian ones, except of course for those that were created under Akbar, like Ajmer and FatehpurSikri, all Mughul gardens and parks were actually modelled along their Persian cousins, though Hindustani craftsmen gave them a distinctly Mughul look. It could only be as Shah Abbas was the one who provided help and sanctuary to Humayun, the second emperor, when he went into exile because of palace rebellion. Furthermore Persian was the language of the courts throughout the succeeding reigns of Mughul emperors, though Urdu, a language born out bastardization of Persian with the local Hindi and a pinch of Turkic tongue passed through their Mongol forefathers thrown in, later became the language of the Mughuls. Though this language latter proved to be a critical identity factor that set them apart from their Ilkhanid and Persian ancestors, Mughul emperors apparently favoured Muslims who were more likely to speak Persian and carry themselves around with Persian mannerism as their trusted advisors and court officials. The sum total of all these was the sustaining of Persian influence on the Mughul lifestyles and preferences.

Akbar, the third emperor, was credited with building many great

Figure 8: Shalimar Bagh, Lahore modelled on the *chaharbagh* which replicate the original *pairidaeza* model, though several innovations were brought in by the Mughul.



gardens including the garden city of FatehpurSikri, which was his administrative centre akin to Putrajaya. It was said that lack of natural water supply finally forced the abandonment of the city, which if true was a departure from the normal Islamic town planning which placed great priority the municipal management of water. But then Akbar was not known for his Islamic orthodoxy as he founded a new religion, Din Ilahi during his reign – a religion that died and well buried with him. Akhbar's son, Jahangir who was more known for his love of pleasure than prowess in battles or administration was consumed by romanticism and as such built great gardens including ShalamarBagh and NishatBagh in his favourite province of Kashmir - both taking advantage of the beautiful Lake Dal. His effort was only surpassed by that of Shah Jahan who built the famous TajMahal in Agra and before that, a beautiful garden called Shalimar Bagh in the fortress town of Lahore (Figure 8).

After the demise of Bahadur Shah Zafar II, buried in not only an unmarked grave but one that was flattened and close-turfed to hide any hint of its content, in Rangoon, Burma on at 4 p.m. in a humid winter afternoon of 7th November, 1862, the splendour of 350 years old Mughul Dynasty lapsed into history as the British colonial power frightened by dark memories of the Indian Mutiny (1857) tried its best to erase a chapter from the rich tapestry of the history of the Indian Sub-

continent. Gardens and parks idled away into neglect and decay to be later converted into other urban land uses as the Indian urban population exploded in the last decades with the advent of Industrial Revolution. Though the famous ones are now safe because of their touristic (to read, economic) values, they are mere shadows of the grandeur they once possessed, isolated and truncated including the great TajMahal of Agra. However, at least they are there for us to savour not for only their heritage values but with discerning research we should enable us to 'rebuild' the Islamic garden model that could be applied in this modern period.

The gardens of the Shah Abbas and the later Persian dynasties as well as those of the Mughuls of India were preceded by the famous gardens of Andalusia. The Emirate and later Caliphate of Cordoba was set up on the banks of a great river, viz. the Guadalquivir, which actually is the Spanish corruption of the Wadi al-Khabir, meaning the 'big river'. It was indeed a big river, the one that the Arabs were awe-struck with when the first set their foot in Andalusia under the leadership of al-Tariq in 711CE (Figure 9). The river connected at least two principal Islamic cities of the province, namely Cordoba which was also the capital for more than 600 years and Sevilla, a city IbnAlhmar was to sacrifice in order to safe-guard the existence of his Nasrid Dynasty in Granada during the

Figure 9: The Grand Mosque of Cordoba (now the Cathedral and now called Mezquita), connected by a bridge over the Guadalquivir. The Arabs brought the water-wheel technology from Syria to lift water for the city of Cordoba and to water the fountains in the Orange Courtyard of the mosque.



Figure 10: The water-wheel that lifted water from the Guadalquivir into the gardens and the houses of Cordoba.



Figure 11: The famous Court of Lions has the water in four channels with its origin in the fountain with a bowl held up by 12 statuettes of lions.



Figure 12: The gardens of Generalife, the summer palace of Alhambra being fed by water from Sierra Nevada.



time of Reconquista carried out by the Christian monarchs of northern Spain. The beginning of the end was when the Muslims under the Nasrid King were defeated by the Christian crusaders in the Battle of Las Navas de Tolosa on the 16th July, 1212. During the more than 600 years rule, including the time of the Tawaf kings, Andalusia was the centre of knowledge and science in Europe which was mostly under the Dark Age. It was the ability of the Muslims to irrigate the dry land that was the critical element to its prosperity; they were able to transport water for hundreds of miles

over mountains and valleys from the Sierra Nevada to the cities. The river, Guadalquivir, played not only the role of water source for the numerous gardens and homesteads that lined its banks (Figure 10), but was also a major transportation highway with Sevilla its most important port.

It was in Granada that the famous Alhambra was located. It was famous more for its gardens though it became the final refuge for the Muslims until Islam was finally vanished from the Iberian Peninsula by Ferdinand and Isabella on the 2nd January,

1492. Located on a steep rocky hill, Alhambra was separated from the city by the small but violent river, the Darro, making attempts to attack it extremely difficult. Its famous gardens such as the Court of Lions (Figure 11), the Court of Myrtle, the Patal and other minor courtyard gardens were all watered by water lifted from the Darro. The same was probably true of the gardens and the fountains of the summer place of Generalife on a higher knoll above the citadel (Figure 12). Ibn Zamra, a famous Granadan poet, once said "If you had been to Alhambra, the only other thing

your heart desire is to see Alhambra again". That was a fitting description of the beauty of a garden environment that was modelled on the images of paradise as described in the Quran.

CONCLUSION

Paradise is a perfect environment. Rivers are the main elements of this paradisiacal ambiance, giving the elixir of life viz. water as well the beauty of the environment. Attempts to replicate this model on earth can only be successful with intricate planning and design that include rivers, either natural or man-made. It is only fair for us to conclude that quality of liveability of modern towns and cities depend on how their rivers are managed and included in the life of their citizens. Water is not the elixir of life the sustenance of life. Rivers and water bodies, therefore are the greatest gift of the Creator beside intelligence ('*aqal*') that made it possible for man to derive the maximum benefit from this divine gift.

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MANAGING COASTAL DEVELOPMENT THROUGH NATIONAL COASTAL ZONE PHYSICAL PLAN (NPP-CZ)



ABSTRACT

Sustainable development of coastal zone is extremely important in Malaysia's drive towards Vision 2020. Most of the nation's state capitals and many of its urban growth centres associated with commerce and industry are located within the coastal zone. Almost 31 percent of Malaysians live and work within the cities, towns and villages located within the coastal zone. Apart from making up an important part of the nation's rich biological diversity, the natural ecosystems found in the coastal zone provide a myriad of goods and services crucial to the livelihood, safety and quality of life of the coastal population as well as the economic development of the nation. However, most of these resources are finite and their worth can be degraded through unsustainable development or mismanagement practices. The aim of the National Coastal Zone Physical Plan (NPP-CZ) is to establish a strategic spatial framework for the coastal zone that incorporates the multiple values and synergies between the natural, physical and socio-economic systems which interact in this dynamic environment, in order to ensure a productive, safe and biologically diverse coastal zone for the benefit of present and future generations.

Keywords: National Coastal Zone Physical Plan, National Physical Plan, Coastal Zone Management, Coastal Planning.

INTRODUCTION

The National Coastal Zone Physical Plan Study was initiated by the Federal Department of Town and Country Planning in response to Policy NPP 20 of the National Physical Plan which states that the sensitive coastal ecosystem should be protected and used in a sustainable manner and that a coastal area land use plan should be prepared. Therefore, the National Coastal Zone Physical Plan was prepared to serve as a guide for spatial planning of the coastal zone.

COASTAL ZONE MANAGEMENT IN MALAYSIA

The coastal zone in Peninsular Malaysia covers a land area of approximately 1.35 million hectares with 248 towns. With more than 2,000 km length of coastline, this area is endowed with a variety of rich marine ecosystems such as mangroves, mudflat, sandy beaches, sea grasses, coral reefs, lagoons and estuaries, most of which are located within the coastal zone.

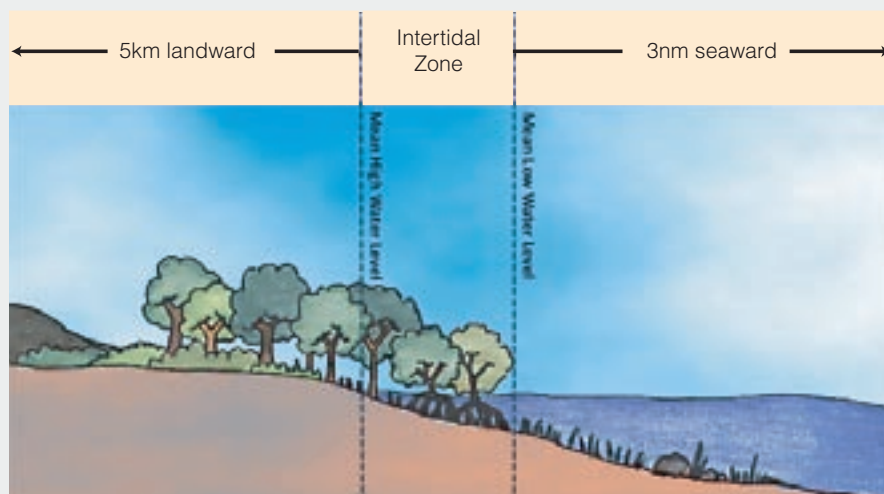
Coastal zone management in Malaysia originated from the National Coastal Erosion Study (NCES) 1985 which was the first comprehensive study of the Malaysian Coastline. The key component of NCES was to implement proper long term planning to prevent coastal erosion. Subsequently, various coastal management plans have been developed, including Draft Integrated Coastal Zone Management (ICZM 2004) by EPU, the Integrated Shoreline Management Plan (ISMP) by DID (Pahang Utara - 2004, Pahang Selatan - 2007, Penang and Negri Sembilan - on going) and Integrated Coastal Management (ICM 2007) by Lembaga Urus Air Selangor (LUAS) for Klang and Kuala Langat District in Selangor.

The evolution of coastal zone management initiatives in Malaysia is driven by a problem-based approach to resolve issues of resources degradation and international commitments.

NATIONAL COASTAL ZONE PHYSICAL PLAN (NPP-CZ)

The National Coastal Zone Physical Plan (NPP-CZ) is a land use strategic

Figure 1: Landward and Seaward Boundaries of the NPP-CZ Plan Area



planning for the coastal zone area. It is prepared as a guide for the spatial planning of the coastal zone which takes into account the unique challenges encountered in the development and conservation of the sensitive and dynamic environment, particularly the economic pressures, coastal processes and hazards, as well as the need to conserve the ecosystems and services related to the sea, along the coastal zone.

The NPP-CZ complements the NPP-2 by specifying the additional planning considerations required for the coastal zone. The plan does not intend to supplant the existing ICZM, ISMP and ICM but rather to support these plans by providing physical planning framework, particularly in a regional context.

i. Plan Area

The plan area for NPP-CZ has been delineated using a broad basis of *five kilometres landwards and three nautical miles seawards of the intertidal zone* (Figure 1).

The landward boundary of this area is further refined by taking into consideration the most significant physical attributes, such as roads and outer limits of important ecosystems, as well as administrative boundaries. As a result, the landward extent of the NPP-CZ plan area varies along various stretches of the coastal zone. Offshore islands, including those situated beyond three nautical miles off the mainland are also included into the plan area along with their surrounding waters.

The NPP-CZ plan area is estimated to cover 2,050 kilometres of the coastline of Peninsular Malaysia.

While the NPP-CZ shall apply to the entire coastal zone of Peninsular Malaysia, detailed spatial information is not provided for states where Integrated Shoreline Management Plans (ISMP) had been formulated.

ii. Goal and Objectives of NPP-CZ

The goal of this plan is *"The establishment of a strategic spatial framework for the coastal zone that incorporates the multiple values and synergies between the natural, physical and socio-economic systems that interact in this dynamic environment, in order to ensure a productive, safe and biologically diverse coastal zone for the benefit of present and future generations"*.

Four (4) objectives have been outlined to support the success of the plan:

- To **plan and coordinate** the integrated use and conservation of coastal and marine resources across State boundaries;
- To outline **future directions for land use and settlement planning** in the coastal zone, with respect to vulnerability to coastal hazards such as storm surge, coastal flooding and tsunamis;
- To **determine appropriate holistic planning and management mechanisms** for the coastal zone in order to minimise overlaps between the jurisdiction of different agencies; and
- To establish an **implementation**

framework for NPP-CZ at the structure plan, local plan and special area plan levels.

THE OUTPUTS OF NPP-CZ

There are two (2) main outputs of NPP-CZ i.e. Themes, Strategies and Measures and The Coastal Land use Planning Guidance. These are supported by three (3) supplementary outputs i.e. Coastal Hazard Maps, Coastal Environmentally Sensitive Areas (CESA) Maps and Guidance Documents. The Guidance Documents provide additional details pertaining to the underlying concepts, approaches and requirements for sustainable planning and management of the coastal zone which will be useful in guiding the user in the implementation of the strategies and measures. However, the details of the report cover two (2) separate volumes. The main outputs are contained in **Volume I**, whereas further details in applying the NPP-CZ are provided in the appendices and **Volume II**.

a. Main Outputs

i. Theme, Strategies and Measures

Five (5) Themes with ten (10) strategies have been formulated to guide the sustainable planning, development and management of the coastal zone (Figure 2).

Each strategy is accompanied by a set of measures, which are the key actions that need to be taken in order to achieve the strategies. In addition, some of the strategies and measures are related to, and should be read together with the Guidance Documents. However, for the purpose of this paper, the description outlines the themes and strategies only, while the measures shall have to be referred to the relevant documents mentioned above.

The NPP-CZ themes are as follows:

Theme 1: Conserving Coastal Biodiversity

focuses on the need to take into consideration of coastal ecosystem in making decision for land use development in the coastal zone. The coastal biodiversity need to be conserved sustainably in line with the national efforts to protect biodiversity and to fulfil our obligation

Figure 2: NPP-CZ Themes and Strategies



to the Convention on Biological Diversity which has identified integrated coastal management as one of the main measures to conserve coastal and marine biodiversity.

The conventional sectoral approach to coastal resource management must be replaced with ecosystem-based management approach, which recognises the interconnectivity of ecological, socio-cultural, economic and institutional systems.

There are two (2) strategies under this theme. They are as follows:

NPP-CZ 1: Terrestrial and marine biodiversity in the coastal zone, including species, habitats and ecosystems shall be conserved and sustainably managed.

NPP-CZ 2: The economic value of ecosystem services as well as the trade-offs associated with development shall be incorporated into planning and development decisions.

Theme 2: Designing for the Dynamic Coastline highlights the coastal processes and coastal hazards which need to be considered while making decision for land use planning and development in order to minimise the risks to coastal settlements and industries.

The land-ocean interface is strongly influenced by the effects of a variety of physical processes, including ocean currents and wave dynamics, atmospheric storms, freshwater flows, and variations in sea-level rise. These effects can present a hazard risk to human settlements and infrastructure located within the coastal zone. Hence, a good understanding of the dynamics between coastal processes and the coastline is a prerequisite to assess the vulnerability of coastal settlements and infrastructure. This is to avoid disruption to the natural processes.

A strategy is created to support this theme:

NPP-CZ 3: The coastline and its economic assets shall be protected from coastal hazards through the incorporation of precautionary measures.

Theme 3: Sustainable Coastal Development stresses on the need to carefully plan coastal settlements and coastal infrastructure to avoid any negative impact to the coastal environment. As rapid population increase and economic growth are projected to persist, especially within the coastal conurbations and urban centres,

development pressure is expected to remain high in the next decade. Thus, all development should be planned and controlled especially at the sensitive coastal zone area.

There are two (2) strategies under this theme. They are as follows:

NPP-CZ 4: The development of coastal settlements shall be planned to maximise socio-economic benefits, in a form and scale that is appropriate to safeguard sensitive coastal resources and is in harmony with natural coastal processes.

NPP-CZ 5: Infrastructure development along the coastline shall be planned and managed with strict adherence to the principles of public good, avoidance of harm to the natural environment and minimisation of disruption to natural coastal processes.

Theme 4: Wise Use of Coastal Resources focuses on how coastal resources should be used sustainably to avoid over exploitation and destruction to the resources. The natural resources found in the coastal zone support a number of important economic activities, the most significant being tourism, mining, timber and fisheries.

There are four (4) strategies under this theme. They are as follows:

NPP-CZ 6: Coastal land reclamation shall only be undertaken when it is proven that the economic benefits significantly outweigh the environmental and social costs.

NPP-CZ 7: Dredging and mining activities shall be carried out in a form and scale that does not harm natural ecosystems or interfere with natural coastal processes.

NPP-CZ 8: The planning and management of coastal fisheries shall be geared towards enhancing the economic and environmental sustainability of the industry.

NPP-CZ 9: Tourism development in the coastal zone shall focus on the maintenance and enhancement of the unique heritage, aesthetic, and environmental values that form its unique selling proposition.

Theme 5: Enhancing Marine Water Quality addresses the importance of maintaining the water quality to ensure the coastal ecosystem is continuously conserved and in safe condition. Marine pollutants can generally be divided into land based pollutants such as domestic sewage from households, pesticides from agricultural runoff and chemicals (including petrochemicals) from industrial discharge; as well as marine based pollutants, such as oil spills from shipping and offshore oil and gas industries, nutrients and pharmaceutical chemicals from aquaculture, and sedimentation from dredging.

There is one (1) strategy under this theme:

NPP-CZ 10: Marine water quality shall be enhanced to ensure that healthy marine ecosystems continue to support various beneficial uses of coastal resources.

ii. *Coastal Land Use Zoning Guidance*

To support the themes, strategies and measures, a land use zoning guidance for coastal zone is prepared. This guidance provides practicable usage and functions of coastal areas according to its locational setting, taking into consideration the NPP-CZ principles and strategies, the unique attributes of the coastal zone, the natural terrestrial and marine ecosystems and the coastal hazards.

There are three (3) types of guidance control to assist planners in deciding on the allowable land uses within the coastal zone, namely (1) Recommended Uses; (2) Not Recommended Uses; and (3) Recommended with Conditions¹.

¹ "Conditions" denote that the particular land use is allowed, provided the developer complies with all relevant guidelines and requirements set by technical departments, land use control stipulated in Local Plans, as well as the strategies and guidance documents provided in the NPP-CZ.

The land use zoning categories used are similar to those applied in Local Plan land use categories. The Coastal Land Use Zoning Guidance should be read together with the respective land use class orders stipulated in Local Plans. The Coastal Land Use Class Order is subject to the discretion of Federal and State Governments, as well as Local Authorities, based on the merits of each development proposal. The development proposal must also comply with the requirements set by all other technical departments.

b. Supplementary Outputs

i. Coastal Hazard Maps

In planning for the coastal zone, it is essential to assess the degree of exposure of each segment of the coastline to coastal hazards such as coastal erosion, flooding, storm surge and tsunamis, as well as sea level rise in the long term. The incorporation of coastal hazards into spatial planning is an important precautionary and preventive approach that can minimise threats to human life, property and resources.

The two (2) types of coastal hazards, which are considered to be the main forms of coastal hazards affecting the coastline of Peninsular Malaysia, based on past occurrences are *flooding and erosion*. The degree of susceptibility of each segment of the coastline to individual hazards is assessed by considering morphological conditions (for flooding) and historical records (for erosion).

ii. Coastal Environmental Sensitive Area Maps (CESA)

Environmentally Sensitive Areas (ESAs) refer to areas that are of critical importance in terms of the *goods, services and life-support systems they provide* such as water purification, pest control and erosion regulation. In addition, they also refer to areas that harbour the wealth of the nation's biodiversity.

Similar to ESA, the Coastal Environmental Sensitive Area (CESA) framework is a modified version of the ESA framework, which has been designed to suit the unique requirements for integrated land use planning of the **coastal zone**. It

is important that these areas remain untouched by development, conserved or sustainably managed depending on the type, characteristic and level of sensitivity/ importance involved. Based on these criteria, the CESA areas are ranked as CESA 1, 2 or 3.

iii. Guidance Documents

Ten (10) guidance documents have been prepared to supplement the NPP-CZ strategies and measures. They provide additional details pertaining to the underlying concepts, approaches and requirements for sustainable planning and management of the coastal zone. These documents are useful in guiding the user in the implementation of the strategies and measures.

IMPLEMENTATION FRAMEWORK

The NPP-CZ strategies and measures cut across a number of sectors that have a bearing on the sustainable development of the coastal zone. As such, these strategies and measures are to be implemented by the relevant federal and state agencies responsible, with assistance from FDTCP. These agencies will have to take proactive actions to translate these policies into action plans, programmes and projects.

The implementation framework of the NPP-CZ can be divided into five (5) parts that are:

- Integration of the NPP-CZ into the National Physical Plan (NPP) implementation framework;
- Incorporation of the strategies and measures contained in the NPP-CZ into State Structure Plans and Coastal District Local Plans, which will provide the statutory basis for implementation;
- Mainstreaming of the NPP-CZ, to ensure that it is accepted by all relevant stakeholders, and effectively incorporated into their policies, programmes and projects;
- Creation of an institutional mechanism that will allow for the level of inter-sectoral co-ordination needed to carry out the NPP-CZ strategies and measures on the ground; and
- Establishment of a process to monitor and review the level of implementation of the NPP-CZ on

the ground to determine whether they bring about the anticipated and desired results.

CONCLUSION

The preparation of NPP-CZ is timely considering the rapid development taking place in the coastal zone. The NPP-CZ will guide the planning, development and management of the coastal zone to ensure the sustainable use of natural resources and conservation of biodiversity. However, the successful implementation of NPP-CZ and sustainable management of the coastal zone in general depends on the level of acceptance of NPP-CZ by all relevant stakeholders and subsequently the incorporation of the strategies and measures of the NPP-CZ into their respective policies, programmes and projects.

It is hoped that with NPP-CZ, the development and management of the coastal zone will be implemented in a planned and sustainable manner towards assisting Malaysia to fulfil her obligation to the Convention of Biological Diversity which identifies integrated coastal zone management as a measure for conserving coastal and marine biodiversity.

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INTEGRATING URBAN BLUEWAYS INTO URBAN OPEN SPACE PLANNING



ABSTRACT

Incorporating river (blueways) components into the open space/green spaces development is a recent trend in environmental and ecological policies. The fulfilment of this policy demands a holistic analysis of the landscape and the interactions between various land use components. In the context of Malaysian planning, its river systems hold potential for future outdoor recreational activities especially in urban open spaces development. Those who are concerned with human institutions and the built environment should place a high positive value on rivers as open spaces. Many writers and researchers have expressed the potential and value of parks and open spaces in building excellent urban communities. Yet the fundamental question arises as to whether urban planners and related stakeholders in urban management can find common ground in their approach in incorporating the blueways into the current city development? This paper will discuss a few common examples of urban river development models for open space planning and point out some of the merits and limitations in responding to the demands for open spaces in urban areas.

Keywords: Open Space Planning, Blueways Planning, River Management

INTRODUCTION

Rivers as part of the urban entity has been seen to play many roles and contribute in many ways to urban development. Many of the world's great cities are located in fragile river deltas because those locations offer optimal access for trade and transportation, ample fresh water, fish, and game, and fertile agricultural land. Historically, the early cities like Ur, Harappa, and Mesopotamia are strategically located along the main river crossing the country. Likewise Kuala Lumpur, as the name implies, located at the confluence of the Klang and Gombak rivers. Back in 1861, the river became a main artery to transport the tin ore or metal supplies and provisions up river, and smelted tin down to Klang. In the old days, rivers had not always been so valued. Over the century, Kuala Lumpur turned away from the river transport system as railroads emerged. Waterfront activities as well as the streets and shops were abandoned. Industries and scrap yards overtook the banks.

Furthermore, the negativity towards rivers was made worse by our traditional physical planning approach which placed more emphasis on roads as the back bone to development design. The physical layout plan was highly orientated towards the road arteries while the riverside lagged behind. The development of illegal settlements along the river banks also complicated the land use situation. Such orientation resulted in the river



Rubbish strewn along the riverbanks of Sungai Penchala (Penchala River), Selangor

channel being used as convenient dump sites, reducing their drainage capacities, and in the long run creating an unsustainable environment. With time, most of our urban rivers became little more than open sewers and conduits for waste. Within the Klang Valley area, there are so many areas facing such a problem, for example the Sungai Kayu Ara area in Damansara, and Kampung Abdullah Hukum along the Klang River.

In our nation building pursuits, rivers have been utilised to fulfill various development needs, altering the natural conditions and dynamics of rivers, and the land use in river basins. Damage to river systems, degradation of their quality and ability to perform important functions bring about major consequences, leading to long-term economic losses and affecting the population's quality of life as a whole.

The way we use and manage our rivers can cause great environmental damage that adversely affects the very resource that we depend on for our well-being and survival. Undeniably, as mentioned earlier, most threats to rivers are the direct result of our own activities.

But today, thanks to the successes of the Environmental Quality Act 1974, most of our urban rivers are no longer toxic or pose a direct threat to human health. As many of our cities have transformed from an industrial-based to a service-based economy, initiated by our industrialization and K-economy policy, factories and warehouses no longer monopolise the riverbank. Environmental consciousness is more prevalent today, and growing interest in outdoor recreation has made more people interested in what their local rivers have to offer. City planners are realising that an attractive riverfront can act as a magnet that keeps people and businesses in city centre and counteracts sprawl.

Imagine how attractive our rivers can be if all 189 river basin systems that are available in Malaysia are effectively managed with environmental and ecological consideration in mind. Surely all our 1800 rivers with an estimated total length of 38,000 km flowing through the land area of Malaysia will be pollution-free and beautifully clear.

Over time the river and specifically the waterfronts in the cities takes on not only commercial significance but important cultural roles as well. Planners, engineers and architects have creatively transformed the river by means of shore embankments, river beautification, river widening, river cruising, and so on. The public campaigns such as 'Cintailah Sungai Kita', 'Sungai Angkat' and river embankment redevelopment (pembangunan semula tebingan sungai) have proved to be successful in creating more distinctive vistas of the rivers in the cities and at the same time providing functional public space.

These structural changes transform the ecological relationship between river and city in ways that may support a day-to-day sense of stability and sense of identity. There has been a lot of debate about whether and how rivers can significantly contribute to the city's development and planning, because in many instances, we see a clash between river as a source of ecological and cultural aspects against river as channelized sewers or flood prone plains. Although the arguments may not ultimately be reconcilable, it is timely to consider how to change this negativity towards rivers to a more ecologically friendly outlook - making rivers as part of our open spaces.

Restoring urban rivers has its challenges, with public access to the river being an initial hurdle. Easy, safe and affordable public access via foot, bike, public transit or boat is critical to any good riverfront plan. And the river should be visually accessible (frequent, interesting views from parks, picnic areas, shops and restaurants), as well as physically accessible.

Realistically, in most of our cities, adding new open space is always a challenging task and difficult to achieve, because like many other older cities, most of the city spaces have been fully developed for many years. Although Kuala Lumpur has managed to improve its per capita open space closer to WHO standard, yet trying to acquire new open space or recreational areas, whether in big tracts or small, is a daunting effort to the City Hall planners. But realistically planners have to consistently produce such areas especially by the riverside as a source of open space or places for recreational activities.

CONNECTING RIVERS TO AN URBAN OPEN SPACE SYSTEM

Open space is defined as publicly or privately owned land that is accessible and has been designed for leisure, play or sports. Use of open space can be categorised as active or passive. Active open space is used for sports, exercise or active play, passive open space is used for sitting and relaxing. Open space can also be classified as land that has been aside for the protection and/or enhancement of the natural environment. The presence of these areas is very significant as it connects citizens to nature and provides opportunities for physical fitness.

The provision of open space in Malaysia must conform to the planning guidelines and standards on open space and recreation set out by the Department of Town and Country Planning, Peninsular Malaysia (JPBD, 1997). There is a long history to open space planning in the country with constant review of the planning guidelines and standards. Fundamentally, it reflects the task of local authorities to make provision for recreational areas. However it does not place sufficient emphasis on the quality of open space; it merely requires the provision of open space. There have been extremely few planners and staff trained in recreational planning. Nor is there any serious discussion of open space network planning principles. However, of late, many local authorities have indicated some changes in their approach to open space planning when several local authorities recommended that in planning for new open spaces, they have to seek opportunities to improve the local open space network, for example by creating green chains and green links, including along river and canal banks. Such suggestions are a consequence of efforts to improve the 'permeability' of urban and suburban areas, and allow opportunities for commercial, cultural and social activities to happen.

OPEN SPACE PLANNING AND BLUEWAYS INTEGRATION

Frederick Law Olmsted, an eminent landscape architect and America's founding father of parks system design, had seven principles for

planning and designing parks which include the water bodies (Simutis, 1972). The common objectives are for public use and to achieve better quality design, optimisation of land use, better site planning, and synchronising the availability of open space and the community needs arising from developments. The principles are:

- 1 **Build community**
This principle refers to the role of the park system in connecting citizens to each other as well as providing community identity. Most great cities are known for their great parks: New York has Central Park, Chicago has Lincoln Park, and San Francisco is known for Golden Gate Park.
- 2 **Respect the local landscape**
Respecting the local landscape means respecting the environment and responding to its cues. For example a coastal environment is beautiful and fragile, and the park system must enhance and respect the native flora and fauna.
- 3 **Enjoy scenery**
To be successful, parks must provide users the opportunity to experience and enjoy nature. Parks should be aesthetically pleasing and provide opportunities to enjoy views within and outside the parks. In particular, pathways and greenways can enhance travellers' experiences and views of the City.
- 4 **Integrate built elements into the park plan**
A comprehensive parks system includes facilities for active recreation and human comfort, as well as undeveloped open spaces. Built elements should respect the landscape and complement the natural environment.
- 5 **Define the city**
Parks, greenways, blueways, and open spaces can clearly define the boundaries between urban and undeveloped areas. In addition, as described earlier, an excellent parks and open space system will enhance the city's identity for citizens and visitors alike.
- 6 **Increase property values**
Numerous recent studies confirm that properties adjacent to parks have higher values because of

their proximity to this important urban amenity. Parks must be well designed and well maintained to enhance their surroundings.

- 7 **Elevate the lives of citizens**
Parks make citizens feel better about themselves and communities by providing opportunities for connections: citizens to each other, connecting citizens to nature, connecting citizens to important destinations like schools, open spaces, neighbourhoods, museums, libraries, and other urban amenities.

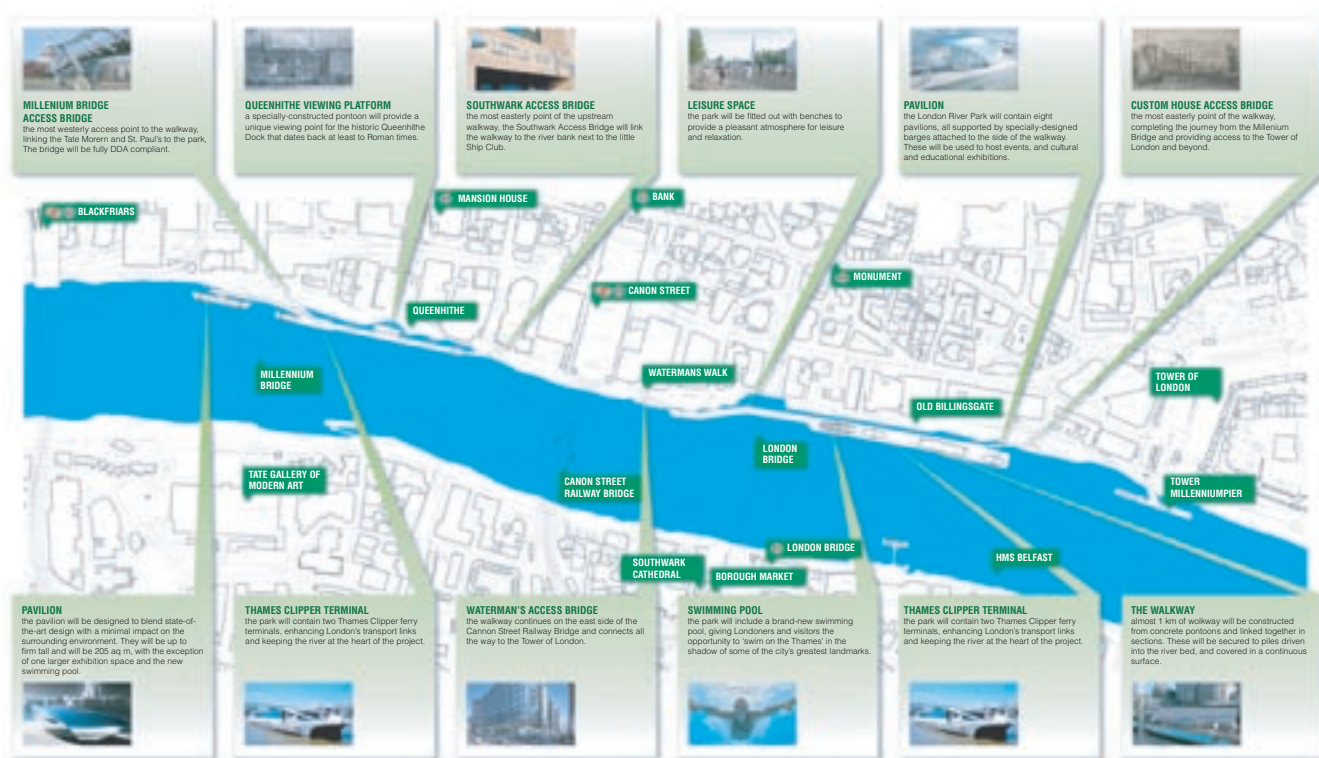
These principles express the potential and values that parks and open spaces have in building excellent urban communities. Yet the fundamental question posed by many is whether urban planners and related stakeholders in urban management can find common ground in their approach of integrating the blueways into the current city development? The solution is not simply to exclude humans from the river ecosystem, tempting as this may seem to scientific purists. Humans are, after all, the dominant species in urban ecosystems, so connectivity of all kinds must include a connection to us and from us to the system as a whole. If the values of ecological and hydrological connectivity do not fit into our established ideas of how cities engage with rivers, then what is needed is a new way of communicating and understanding those values. Many recent urban river restoration projects recognize this need, and they can serve as models for a new cognitive connectivity between cities and rivers.

Lets us consider a few examples of successful river projects that have been turned into open space areas based on their own scale and character around the world.

London River Park

The Thames Embankment project is indicative of the possibility for blueways open spaces, for it shows that riverfront design can increase people's symbolic connection to the river even as it separates them physically from the river. London River Park, maps out the first continuous river-walk between Blackfriars and the Tower of London in the heart of England's capital, in an attempt to activate the under-utilised expanse of river frontage. Managing

Figure 1: Map of London River Park Project



Principal of Gensler's London office, commented: "In heavily built cities the requirement for open space provision needs to be addressed seriously and why not creatively? As active players within the construction industry, it is our responsibility to show and drive the commitment to improve the quality of life in London" (Turner, 1992a).

Cheonggyecheon River

The river/stream once served as drainage for the city of Seoul until the 40's. During this time the stream was getting polluted and people began filling it in with concrete. This continued until there were parts of the stream left and in 1976 an elevated highway was formed on top of the filled-in corridor. Korea has implemented a brilliantly ambitious and life-enhancing river restoration project which, unfortunately, is no masterpiece for Korean landscape architecture or garden design. Seoul, formerly Hanyang became Korea's capital city in 1394 and a new city was built beside the lovely Cheonggyecheon River. Floods arrived from time to time but King Taejong (1400-1418) believed that nature should be allowed to run its course. A great stone bridge was built and the valley became a resort, a laundry,

a children's playground, a place for lantern festivals – and a sewer. During the Japanese occupation (1910-1945) the river was 'improved' in the sense of being dredged to protect the occupier's property. Korean engineers decided the river should be buried and by 1967 it had disappeared from view. Construction of the Cheonggye Elevated Highway began in 1967 and was completed in 1976. It was built above the buried river. An elevated highway was then built above the valley. It took 20 years to complete the project. The highway, 50-80m wide and 6km long, was opened in 1984. However, it received criticisms from the public for its awful looks and costly repaired work.

It was for this reason that the Cheonggyecheon Restoration Project was formulated. Engineers promised to transform Seoul's grey concrete image. Their professed goal was "a lush, green city where clear waters flow". Through this and other such projects, Seoul will be re-born as a human-oriented environmental city, greatly increasing Seoul's 'brand' value. Today, after a \$384 million recovery project, the stream, called Cheonggyecheon, is liberated from its dank sheath and bubbles between

reedy banks. Picnickers cool their bare feet in its filtered water, and carp swim in its tranquil pools.

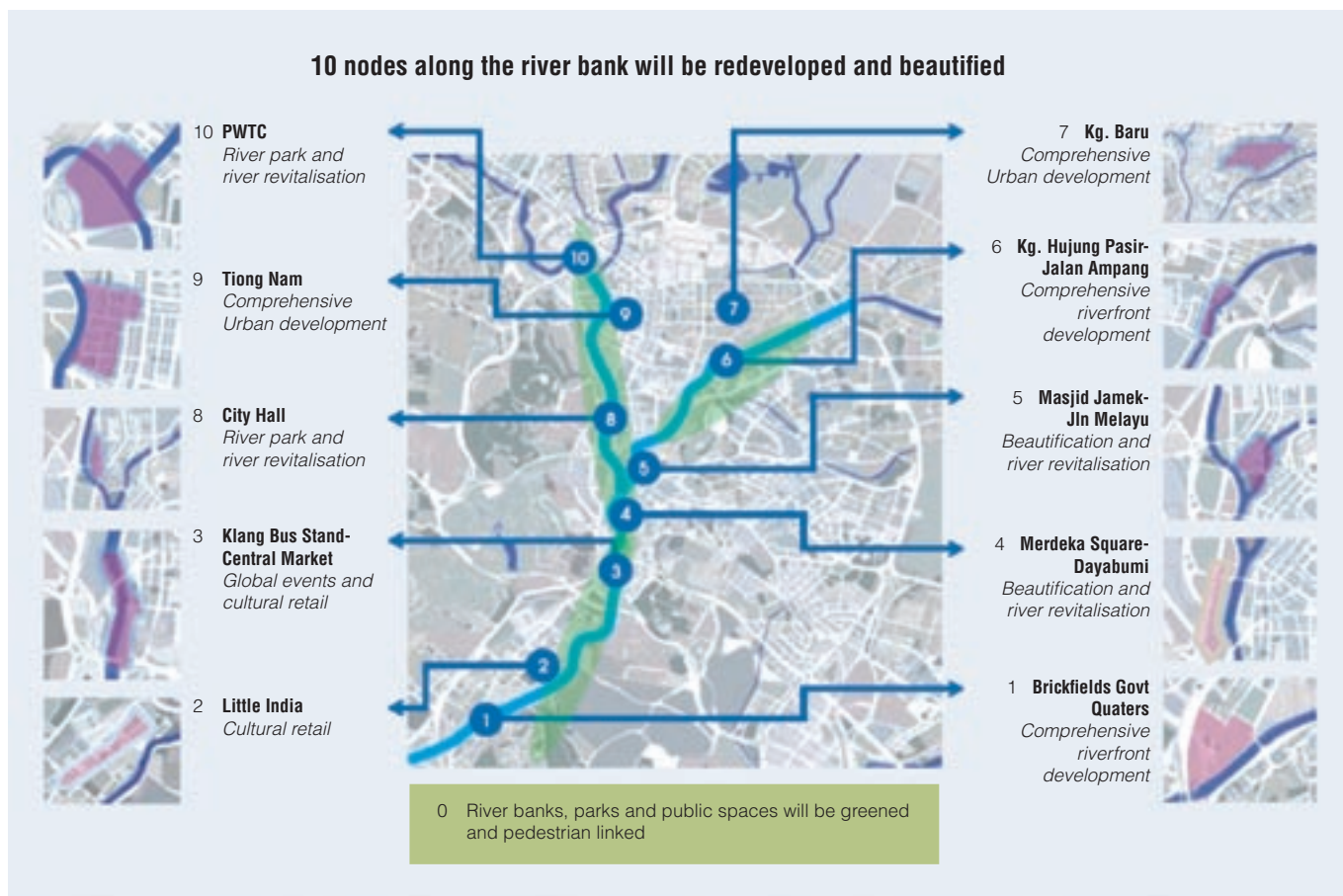
The restoration of the Cheonggyecheon is part of an expanding environmental effort in cities around the world to "daylight" rivers and streams by peeling back pavement that was built to bolster commerce and serve automobile traffic decades ago which removed three miles of elevated highway. What is more, a new analysis by researchers at the University of California, Berkeley, found that replacing a highway in Seoul with a walkable greenway caused nearby homes to sell at a premium after years of going for bargain prices by comparison with outlying properties. The highway once divided them but the new park bridges this gap and better connects the city. Efforts to recover urban waterways are nonetheless fraught with challenges, like convincing local business owners wedded to existing streetscapes that economic benefits can come from a green makeover.

This plan in Seoul is bound to be a model for the rest of Asia in the future. The park is not only looked at as being walkable in itself, but it serves to



The old engineered Cheonggyecheon Elevated Highway (left) and the new Cheonggyecheon River (right)

Figure 2: Rivers and riverbanks are connecting elements (or landscape corridors) between patches.



Source: Economic Transformation Programme: A Road Map for Malaysia (PEMANDU, 2010)

connect the north and south parts of the city together.

Klang River Project

Having seen how the ideas of river parks developed, let us turn now to our city to see the extent of adoption, adaptation and permutation of the blue planning concepts. The Klang riverfront project is perhaps Greater Kuala Lumpur/Klang Valley's most under-utilised natural asset. The Klang River has all the ingredients to become a vibrant waterfront, i.e. historical importance, heritage centre and location within the city centre, with enormous economic and liveability potential to be realised. We should praise the efforts made by City Hall of Kuala Lumpur for turning the historical Gombak and Klang rivers into more significant corridors. The suggested redevelopment of Klang River is very much similar to what has been done to cities like Paris and London. The river bank effort ranges from revitalisation of the river to the redevelopment project along the river stream.

Revitalising the river involves redevelopment of several locations along a 10 kilometre stretch of river, along with a thorough river clean-up programme. Ten nodes of economic activity have been identified along the Klang and Gombak Rivers as illustrated in Figure 2. For each of the nodes, in addition to beautifying the river bank and improving connectivity, mixed use developments were encouraged to increase retailing, residential options and places of leisure such as parks and green spaces.

The examples above have shown the long evolution of urban river park development and justification for its existence. Each of the examples discussed above represents a set of community expectations, with each new phase adapting to societal needs. The most important lesson in the evolution is that form always reflects immediate social goals, an ideology about order, and an underlying attitude towards the city. It is obvious that revitalisation of rivers is intended to benefit people. Functionalism of blueways, as discussed, lies partly in the conferring of benefit upon their surroundings. Thus the openness of a particular site may contribute to the safety, accessibility, liveability, or economic value of other property in

the vicinity. Urban waterways also have uses other than recreation, as noted above. In the broader interpretation other than recreation, this must include stimulation as well as relaxation, and might cover the experience of moving around and participating in the life of a city. Thus, at least part of the reason for integrating the city blueways lies in the fact that they represent a response to human values and emotions.

WHAT IS NEEDED FOR BLUEWAYS NETWORK INTEGRATION?

In research on urban rivers, one of the terms that comes up most frequently is the term "connectivity". The term carries different meanings to different people. For example, the river is considered from ecological points of view by the Department of Drainage and Irrigation. The term "urban waterfront planning" is used frequently by the Department of Town and Country Planning for its beautification effort. However, this discussion intends to explore the possibilities of finding common ground between all related stakeholders through the consideration of blueways as a *recreational network system* component that allows urban dwellers to experience their place in the urban watershed in ways that differ from the traditional definition of recreational open spaces such as parks, play areas, and gardens.

The urban environment is often considered to be antithetical to nature, yet research increasingly shows that this is not necessarily the case. The ecological concern is related to the rise of the 'new' environmentalism (Berg and Medrich, 1980). This view emphasizes the biological externalities of human actions. The ecological notion that everything is connected to everything else means that protection and enhancement of natural systems is essential for human survival. A number of works have promoted the need for these connections, as well as methods intended to promote and protect natural systems in the design of urban areas. McHarg (1971) pioneered the ideas of environmentalism in the design of cities, describing the urban system as an ecological system in which humans play an important, but shared, part.

The human capacity for abstract understanding offers hope for more

ecologically sound relationships between cities and rivers. Instead of putting our engineering and aesthetic concern into controlling rivers and framing them as beautiful objects, as previous riverfront projects tended to do, we should work to integrate the complexity of river ecosystems into the public image of our cities. Cognitive connectivity, the acknowledgment that humans are integral components of ecosystems, has its basis in environmental understanding, basis for ecological understanding in general. Philosophical connectivity demands that we comprehend our place in the local and global ecosystems and acknowledge the distant consequences of our actions. Rose (2004) stated "the new ecology starts with this fundamental assertion: that the unit of survival is not the individual or the species, but is the organism-and-its-environment". The application of this idea to specific issues of urban rivers involves a strong educational component, design that allows people to see and understand ecological processes. It also draws connections between global and regional ecological concepts and the residents' understanding of and fondness for local places. There are many admirable examples of sensitive river restoration, incorporating both urban design connectivity and ecological connectivity. Most, however, incorporate cognitive connections only in the planning stage, through collaborative and participatory design procedures; the completed projects failed to engage the public in conscious interaction with ecological processes.

RECOMMENDED APPROACH TO BLUEWAYS NETWORK

There are many ideas and ways to enhance rivers as recreational open spaces and for the blueways network in our city to materialise. The approaches below are seen as significant to achieving that objective.

- 1 A holistic approach in urban open space management is required. From the discussion above, it is obviously important for those who are involved in transforming the urban river areas to have an ecological and environmental understanding of the river system. Realization of the river

interconnectedness is a must across all fields and professions. Holistic and top down approach is a requirement as the transformation of our urban river areas requires involvement of departments and agencies. River programs will involve city departments and state agencies. At the city level, most of the related units are directly under the mayor's control, while at state level it would be governed by separate boards related directly or indirectly. No department is concerned exclusively with quality of life and attractive public spaces. For that matter, there should be an authorized body directly responsible to keep them on the same page for the same vision. We probably need to put talented generalists in charge of the agencies that deal most directly with quality-of-life matters. We need people with ideas which reach beyond the confines of an organization as most of the time the professionals have roles that are peripheral to those spaces.

- 2 An appropriate regulatory framework would need to be created to support the plans created.
- 3 Local authorities that are involved need to enter into an inter-agency agreement which will that allow all parties to conduct the recreation programme along the riverbeds with mutual consent. This is highly needed as rivers usually flow over big areas. The issue of maintenance, management and programming should be clearly defined.
- 4 To ensure the success of the blueways project, it makes sense to get more people involved. Effort should be made to attract the private company, non-governmental agencies, or schools to be partners in the programs.

CONCLUSION

Those who are concerned with human institutions and the built environment place a high positive value on rivers as open spaces. Yet the value will based on how they define the term, and the emphasis they put on connecting humans to the river. For urban planners who are concerned with riverfronts, the main issues are making the river accessible to people from the most densely used or occupied parts of the city (pedestrian paths and bridges, transit linkages), linking the river visually and conceptually to the city (greenways, parks, attractive riverfront destinations, integrated design elements, vista points, identifiable images and logos), and providing social and cultural attractions along the riverfront. To incorporate the river as part of the open space components is not difficult - it just needs the water body areas to be accessible, adequate clean water, compelling landscape to successfully weave with the recreational components along with a comprehensive plan of action. One has to remember that urban planning by itself provides only a partial solution to the achievement of urban blueways. Human behavioural patterns, traditions, attitudes, beliefs and prejudice, government policy and vision may be beyond the control of urban planning despite the best efforts of the planners. In other words, planning by itself is necessary but not sufficient condition for the achievement of the integration of rivers as part of the open space development. Yet one has to start somewhere.

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KUALA LUMPUR RIVER OF LIFE: REVITALIZING THE URBAN HEART OF KLANG RIVER



ABSTRACT

The Klang Valley has reached a point in the evolution of Kuala Lumpur where dramatic intervention is required to bring back the tremendous opportunities that exist by reconnecting the community and river. Spanning a much larger area than Kuala Lumpur City Centre, the Klang River Valley presents an extraordinary opportunity for redevelopment in this historical and uniquely Asian city. This paper discusses the outputs of the master plan of the River of Life Entry Point Project (EPP) that aims to transform the confluence of the Klang and Gombak rivers into a vibrant and liveable waterfront with high economic value by 2020. The master plan will be used to maximise the social and economic potential of the 10.7 kilometre river by connecting, activating, regenerating and enlivening the social community of Kuala Lumpur through the waterfront. This paper describes the history and evolution of Klang River and highlights the opportunities from river development. The paper also outlines the framework and measures of the implementation of this project.

Keywords: River of Life, Revitalization of River, River Development



INTRODUCTION

The developing world is becoming increasingly urbanised and cities are where most of the future development growth will take place. Meanwhile, developed urban centres are experiencing rapid decay with high land costs, urban blight and disconnected uses requiring innovative regeneration schemes. Due to the emerging globalized economy, cities increasingly need to distinguish themselves by competing for creative capital, content and talent. There are many elements/indicators that define great cities such as the key factors that are examined to develop the Liveable Cities Index including Cultural Attributes, Environment, Cost of Living, Social Conditions and Economics.

A key factor to creating liveable cities is great places that become focal points that bring people together to live, work, celebrate, create, exchange while allowing nature to thrive and local economies to flourish. These places with intrinsic communal identities are often anchored to either green or blue open spaces and create the foundation for sustainable growth over generations. The Klang Valley has reached a point in the evolution of Kuala Lumpur (KL) where dramatic intervention is required to bring back the tremendous opportunities that exist by reconnecting the community with the waterfront. Larger in area than KL City Centre and located at the muddy estuary of the Klang and Gombak Rivers where KL emerged, the Klang River Valley presents an extraordinary opportunity for redevelopment in this storied and uniquely Asian city.

This transformation plan rivals the plans that transformed KL into a truly global city in the 1990s with the construction of KLCC, Putrajaya, the international airport and several other landmark projects. The River of Life is an Entry Point Project (EPP) that aims to transform the Klang and Gombak River, which runs through central KL, into a vibrant and liveable waterfront with high economic value by 2020.

The master plan will be used to create an iconic waterfront development for the city. The proposed plan for this project maximizes the social and economic potential of the 10.7 kilometre river by Connecting, Activating, Regenerating and Enlivening the people of KL through the waterfront. It does so primarily by interlinking ecology, landscapes, waterscapes and communities in ways that bring people together and helps them meaningfully reconnect with the river.

The River of Life project, which proposes to reorient the city back to its roots along the Klang and Gombak rivers by rehabilitating the water quality and revamping the river banks with a variety of social, residential and commercial developments, including the creation of 10 kilometres of pedestrian-oriented waterfront and streetscapes, bike lanes, urban beaches and the development of new eco-valleys that connect to existing neighbourhoods and increase habitat areas by 900 percent. The Plan also sets the structure for a 100-year forest that will transform an area of over 20 football fields in size over time. Renewable energy systems, including mini-hydro and solar lilies, are also

being proposed to provide power for the public space's energy demands.

THE SITE: THE GOMBAK AND KLANG RIVER

The River of Life project area benefits from a unique and valuable set of architectural, landscape, and infrastructure assets stretched along the 10.7 km of riverfront. Significant landmarks in the area include Dataran Merdeka, Bangunan Sultan Abdul Samad and Masjid Jamek.

In the future, approximately 35,500 workers, covering the spectrum of office, industrial, service, and research and development jobs, find their employment on the site in 1 million square feet of buildings. In addition, 39,000 additional residents (12,000 household) will make this place their home. The location provides expansive river views, views of the city skyline with the Petronas Towers and the KL Tower and proximity to the 347-hectares of park land. Direct connections exist to the highway system, public transit lines, and the national freight rail network. Existing conditions on the site vary from the north end of the river in Precinct One and the southern zone of Precinct Eleven.

District Context

KL is the economic, business and arts centre of Malaysia. This area is economically the fastest growing region in the country. It also acts as a hub for retail, fashion and culinary sectors and has a high concentration of educational institutions.

Site Context

The project area covers the confluences of the Batu, Gombak and Klang Rivers including a total area of 782 hectares and a water area of 38 hectares (Figure 1). The site has 19 hectares of river reserved for enhancement that is within the development control of the city. There is a dire demand to beautify the riverfront to connect the rivers to the surrounding developments and to re-exam the land use, infrastructure and open space plans to raise the standard of living for the people of KL. The centre of the site holds many cultural and historical destinations as the birthplace of the city. The project area is a varied mix of residential, cultural and business districts creating an interesting challenge and lots of potential for future development.

The master plan includes eleven (11) distinct precincts (Figure 2).

THE RIVER HISTORY: FROM RIVER TO GLOBAL CITY

The Klang River is a major part of the past glory of KL from which the city was born. KL, meaning the “muddy confluence”, became a frontier town and a mining area when the Malay chief of Klang, Raja Abdullah, hired Chinese labourers to open tin mines in 1850s in the surrounding forests. With the growth of the Tin mines commercial development was spurred along the banks of the river and used as a main transportation route. During the 1900s, the confluence of Klang and Gombak River was a centre of commercial activities when traders would dock and conducted business.

In 1907, early settlers built Masjid Jamek at the confluence of the two rivers to mark the importance to the community in everyday life. The area further developed into a melting pot of Chinese, Malay, Chettiar Indian, Muslim Indian and British cultures.

Globalization of KL has dramatically changed the riverfront over the past 100 years. Transportation systems, economic development and community evolution has been focused away from the river. The rivers primary function is for flood control and major infrastructure where the water is polluted and the river banks have no ecological value.

Figure 1: Site location in the greater KL context

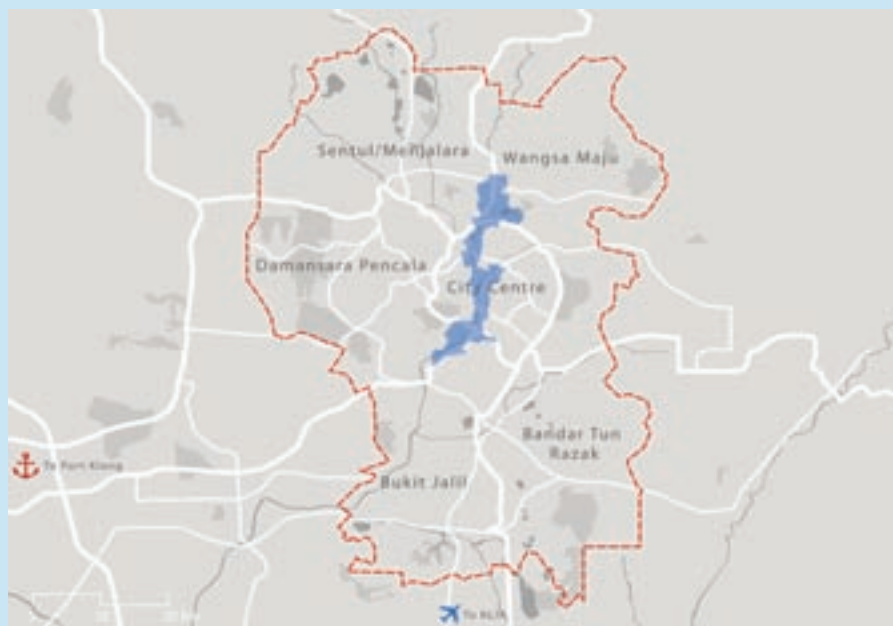
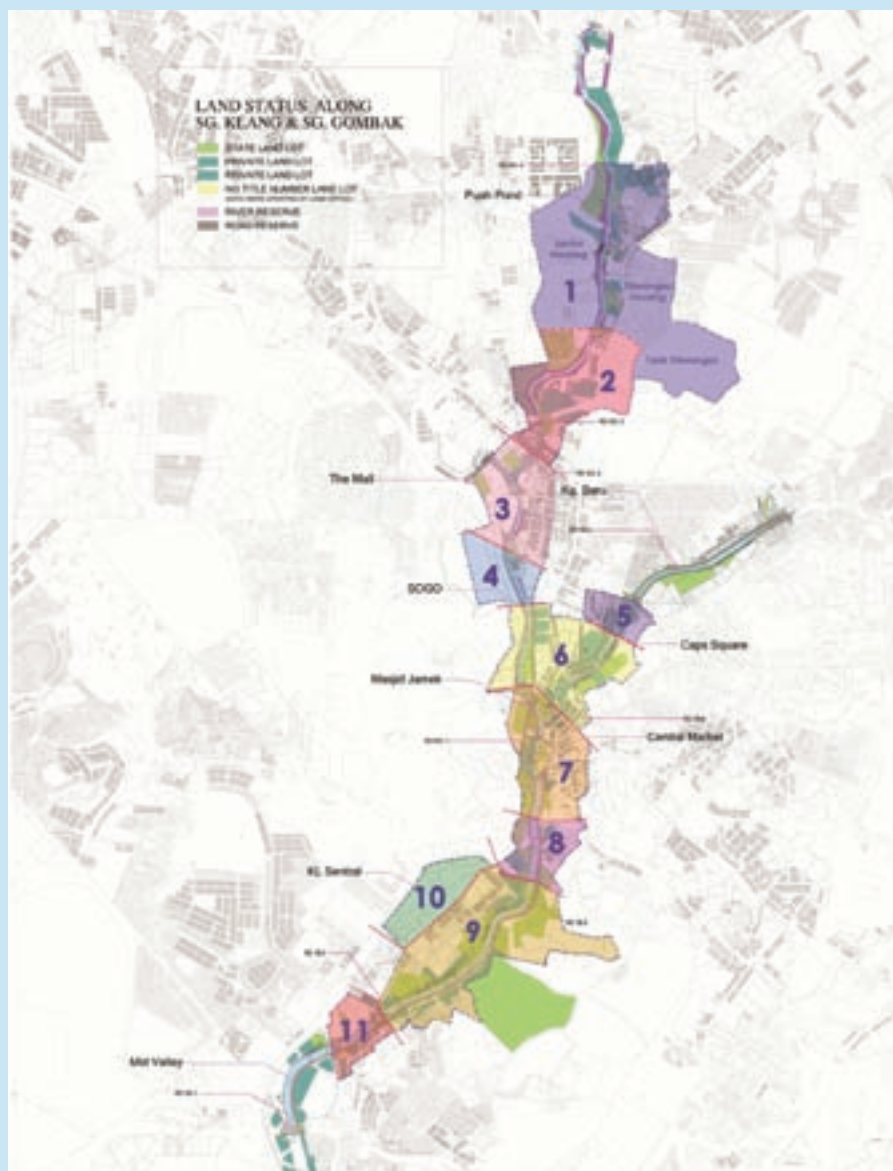


Figure 2: Development precincts of the Kuala Lumpur River of Life Project





The confluence of the Klang and Gombak Rivers where KL began and site of the central masjid

The River Evolution

1. 1857-1885 - Chinese Tin Miners & British Colonial Period

- a) Masjid India - Established in 1863, the masjid is known to be the oldest in KL
- b) General Hospital - The hospital was built in 1870 and Pahang St. is possibly the first road that connected the hospital to the colonial area.
- c) In 1885, there is a change in tin transportation mode from the river to a railway system.
- d) Sultan Abdul Samad Building - Established in 1897 as part of the British government department.

- e) Petaling Street - In 1889, the Chinese settlements moved from the river confluence to Petaling St. in reaction to the constant flooding.

2. 1885-1957 - Arrival of Travellers

- a) Brickfields - Established in the 1890s by Yap Kwan Seng. Tun Sambanthan Street shows a stretch of old colonial structures.
- b) Kampung Baru - Established in 1900 as a Malay agricultural settlement. It is still preserved to this day.
- c) Masjid Jamek - Built in 1908, the steps descending towards the river shows a hint of KL's old

attitude of a close relationship with the rivers.

- d) Istana Negara - Built in 1928 as a mansion for a Chinese millionaire.
- e) Chow Kit - Raja Laut Street, which is located in the heart of Chow Kit, was seen in the 1960s

3. 1957-1970 - Post-Independence

- a) Merdeka Square - In 1957 the Selangor cricket field became a national landmark as the location of the union flag lowering ceremony.
- b) Masjid Negara - Established in 1965
- c) Gated governmental institutions - The Malaysians built more developments for the new government near the colonial areas
- d) Bukit houses - Opened up possibility of more housing on the west side of the river

4. 1970-Present - Present Globalisation

- a) CBD - An expansion of the CBD
- b) PWTC & LRT - Opened in 1990
- c) KL Tower - Completed in 1995
- d) KLCC Twin Towers - Built in 1999
- e) Housing to the North and South of the CBD - More residential and mixed use developments outside the outer ring road
- f) KL Sentral - Established in 2001 as a public transportation hub

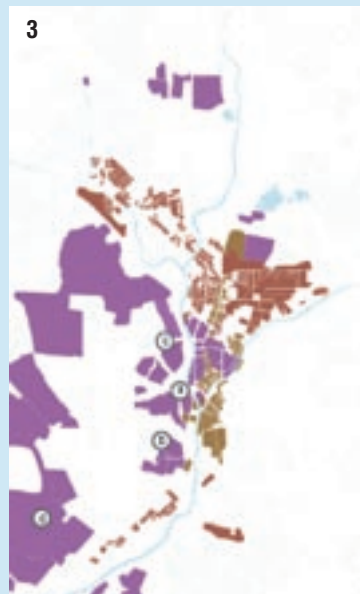
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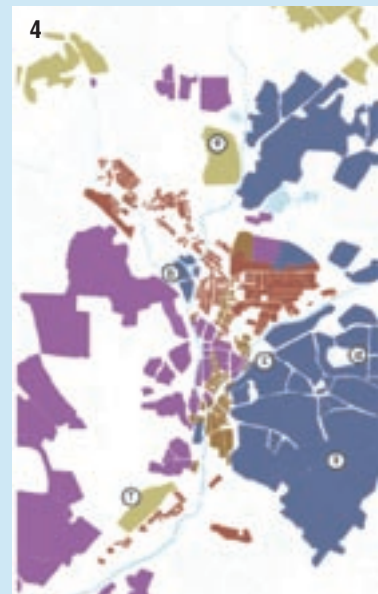
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THE OPPORTUNITY OF RIVER DEVELOPMENT

A master plan provides a coordinated approach for attracting positive new investments to a city. The plan creates the framework for transformation, regeneration and growth. It provides a vision that sets up a dialectic relationship between land, built form and the river. Within this comprehensive framework the River of Life will become the drama of KL where memories are created and communities are connected.

The ideas start from a single drop of water that gave life to the river and the forest and initial life on the river. That drop of water also gave life to business as water was integral to tin mining in KL in our historical past, and to the rubber and palm plantations. Later, when the river was connected, it was used to transport people and goods. Then the British arrived and colonial buildings sprang up around the confluence of the Klang and Gombak rivers. However, while KL blossoms into a global city, the river was forgotten and becomes the backdoor of development with back of buildings oriented to the water, a dumping ground, a river no longer part of daily life. Thus, it is becomes a duty of this plan to bring people back to that drop of water and demonstrate that the people of KL care about the city and the life lines of the community that they want to **Connect, Active, Regenerate** and **Enliven** the River of Life.

The River That Connect Us

Several different connections are introduced to link people to the river, open spaces, landmarks and their

heritage. Residents of River of Life will have unparalleled accessibility with priority given to pedestrians to reduce vehicle dependence. Barriers created by heavy infrastructure are minimised with enhanced East-West connections and a water taxi system to encourage engagement in riverside activities. River of Life is connected not only physically but also experientially by enforcing links between markers of the heritage sites.

The River That Activates Us

Activate and energize the project area by cultivating spaces that are a part of the rivers to enhance the communal bond among residents, the role of the rivers in the city and the quality of the landscape. This will ultimately establish a vibrant atmosphere within the rivers increasing demand among visitors who wish to comfortably enjoy the outdoors.



The River That Regenerate Us

Regeneration unlocks the value of the underdeveloped sites and repositions properties to enhance community value and connectivity. Multiple sites have been identified along the river for new land development. Where possible the sites are connected to create strategic nodes of mixed use development appropriate for urban densification and liveability. The new mix of uses has been planned to accommodate a range of user groups and economy levels allowing for everyone to live, work and play in the new community.

The River That Enliven Us

Looking to the past, the rich ecology of the riparian zone is reintroduced to the city through a series of larger contiguous open spaces. These larger habitat areas are then connected to and along the river allowing for re-establish plants and animals that humanize urban streets, taller buildings and greater city density. The plan creates both visual and physical connections between ecology and people.

DEVELOPING THE FRAMEWORK FOR FUTURE

The new framework re-establishes the lost connections of the urban fabric with the river as well as from one district to another. The plans set the foundation for the eleven precincts of River of Life through consolidation of urban design, landscape,

transportation, environmental and economic solutions taking into consideration the site's natural and cultural opportunities, the short and long term economic impact and implementation viability. The intention is to create a harmonious environment that raises the quality of life and heightens the integrity of the public realm both physically and mentally essential to the continued vitality of the city- this is the great new address of KL.

There are seven specific areas where our comprehensive framework responds to the key elements identified by the City of KL including:

- Potential Development in the River of Life Area
- Urban Design at the Riverfront
- Heritage, Conservation and Adaptive Reuse
- Access, Connection and Circulation
- Potential Public Activity and Landscaping
- River Beautification
- Environmentally Sustainable Developments

1. Potential Development in the River of Life Area

The project site is characterized by a long stretch of reserved riverfront that is underutilized. This prime area currently acts as a barrier, dividing the site in two halves. The eclectic mix of characters that make up the eleven precincts grants the injection of a variety of program not only along the river corridor, but also extending to the edges of the site. The river edge is

ideal for placing commercial program, ranging from office towers to cafes while the periphery of the site hosts large residential developments and mixed use buildings. These beads strung along all over the site thread together the strings of connections and open space corridors prompting pedestrian movement and social activity along the river.

The proposed master plan intends to realize the high potential of turning the river from a barrier to a connector that weaves itself back into the urban fabric of River of Life, sewing the east and west sides of the site back together as it was over a century ago. This is accomplished by protecting green and nature, identifying areas to build and not to build and classifying appropriate land use zones for each section of the river.

Vibrant and Quality Living in City

The size and offering of mixed uses suits and fulfils social, economic and functional requirements. For example, residential program is placed to support walking to transit stations and frequently visited retail/commercial areas. Similarly, there are enough commercial elements to withstand the population within the service area. The relationship between residential, commercial/retail and public transportation goes hand in hand as people rely on the transportation connection to residential and commercial areas while the public transit system relies on an adequate population to support its infrastructure.

Beyond the daily needs of living, working and shopping areas, public facilities fulfil much grander duties. New public facilities create jobs and bring in visitors, which improves a city's economy and desirability. The success of amenities like farmers markets, museums, and the eco centre not only boosts the city's reputation but also builds a sense of pride among its citizens inspiring further investment in communal amenities.

A Mixed Use Community will impact in:

- Unlocking property values for existing urban areas by providing a range of commercial and residential unit sizes and options.
- Allowing more people to live in the city and reduce significant commuting traffic.
- Increasing more pedestrian as various uses are brought closer.
- Potentially more efficient usage of resources (power, water) as more integration can be done at district level.

Maintaining Affordability

Throughout the development process, affordability is a key factor. Human diversity is maintained by enforcing affordability within the project. The aim is to provide the luxury of choice usually reserved for the upper-middle and upper class families to the lower and lower-middle class families in choosing their community for living and working. The affordable home program proposal is to create stratified home ownership that has ceiling income. The target for these homes is lower and middle income Malaysian households who are first time buyers. Government assistance would be a combination of land provision, facilitation funds for ownership, green initiative benefits and green lane approvals.

Eco-Transit Oriented Development

The master plan promotes a mixed-use development pattern that maximize access and usage to public transport while substantially increase the ecological footprint of the development by introducing high value ecological areas with rich bio-diversity elements such as habitat, waterways, wetland parkland, etc. A traditional TOD neighbourhood typically has a centre (or more) with a transit station with inter-related bus stop within 10 minutes walking distance (typically 400-500m radius) and surrounded by relatively high-density development





with progressively lower-density development spreading outward from the centre.

2. Urban Design at the Riverfront

The implementation of urban design at the riverfront is geared towards activating the river corridor. The following methods aim to bond the river closer to the city, increase visual and programmatic interest along the riverside and make river-based recreation more comfortable for the public. This pattern enhances not only the riverfront but also the street side and overall urban fabric by minding the city context and establishing its own identity all while improving the pedestrian experience.

From Drain to Spine

Currently the river is regarded as a storm drain that the city has turned its

back on. New program activities at the riverside will encourage buildings to align to the river to engage with the foot traffic in the river corridor.

Sun and Rain Protection/Shade and Cover

Building frontages will provide adequate transition space to sufficiently protect pedestrians from direct sunlight and rain. Effective protection from the elements will encourage increased pedestrian engagement, and in turn drive up the value of the land.

Diversity of Edges

- Urban Edges: Activate and increase proximity to the river's edge - create a series of gathering spaces at retail edges to accentuate fragments of facades.
- Green Edges: Maintain soft buffers to the river - unite pedestrians with

the landscape through riparian buffers that offer a natural transition from the urban fabric to the rivers.

Activate the Edge

Maximize frontage to the river:

- Allow 80% of the building facade for frontage.
- Design edges that enhance public spaces along the river corridor to provide sanctuary visual pleasure and range of recreation opportunities.

View Analysis & Corridor

Retain views into and out of the city riverfront and vistas to important civic landmarks:

- Orient buildings to amplify the views towards activity nodes and public spaces.
- Prevent building massing that obstructs visual relationships between public attractions.

3. Heritage, Conservation and Adaptive Reuse

The preservation and adaptive reuse of several existing sites are proposed within the downtown core including the adaptive reuse of the Central Market and Old Railway Station site. An adaptive reuse strategy will allow developers interested in historic sites to find alternative uses for the architecture while granting additional site densities that would create financially feasible projects.



The historic preservation and adaptive reuse within KL should ensure that:

- The significant elements of the Cities Register Conservation Sites are both preserved and used;
- Renovation or adaptive reuse projects respect the integrity of the existing historic elements within and adjacent to that project;
- New development projects are compatible with and respectful of the existing historic context; and
- Historic structures and landscapes are made widely visible to the public.

Enticing Investments and Preservation Incentives for Conservation Sites

To assist property owners and developers in the maintenance and restoration of landmark structures, it is recommended that national and local incentive programs be developed to support preservation. These incentives should include property and income tax programs, and other assistance intended to make the stewardship of historic landmarks a privilege, not a burden. Incentives could include programs such as Development Rights Transfer, Facade Easements, Grants-in-Aid, Historic Rehabilitation Tax Credit, Zoning Code Relief – Re-Programming and Special Tax Valuation for Historic Properties.

4. Access, Connection and Circulation

A fundamental element of cities is to facilitating ease of movement between people, goods and service. The current project area is extremely congested and disconnected between various modes of transport and has been well documented. The implementation of our transportation strategies for the ROL Study Area reinforces the vision for KL set out in the **KL City Plan 2020: “KL – A World Class City”** and prioritize infrastructure modification based on three fundamental ideas as follows:.

- **Pedestrian and Cycling Focus:** Prioritisation of a human scale pedestrian network that connects to the river, is narrated by a series of guiding lights and enhances safety and personal security.
- **Public Transportation:** Enhance and strengthen connections to public transit with 100% coverage across the project area.
- **Traffic Management:** Facilitate ease of traffic movement using both physical improvement strategies



and policy incentives to enhance connections to and with-in the area.

Pedestrian and Cycling Focus

A fully integrated pedestrian and public transit network will provide connectivity to all amenities including shopping areas scattered throughout the project area. Sheltered walkways ensure a comfortable pedestrian experience between destinations and increase the desire to utilize public transportation. Well-planned bicycle and pedestrian linkages along the riverfront and within the study area will connect to transit stations making public transport more attractive and will discourage the use of private vehicles for short trips, helping to reduce carbon emissions further.

Landmark Bridges

Prominent bridge structures offer opportunities to create new landmarks and to incorporate the cultural and historic values of the area into their design. They offer the opportunity to maintain visual connections, improve accessibility, and reduce severance created by the river or roads, and capture attractive views for pedestrians and cyclists. Proposed new pedestrian bridges reflect the sinuous fluvial patterns of moving water and river edges and create more connections along the river.

Public Transportation

The goal of the proposed public transport network is to provide at least one transit stop within 400m to 100% of the ROL area. Towards achieving this goal, a new MRT Station, shuttle buses/circulator routes and river taxi routes have been identified to provide the best transit coverage possible.

Water Taxi Service

Introducing a new mode of transportation to the river will open the opportunity to reorient people to the river. The water taxi is used to move between modes of transportation or as a new connector to transit hubs. The water taxi is divided into three sections and is separated by the water dams. Four electric water-taxi systems are proposed along the length of the river. While the Sungai Mas Line is purely a tourist experience, the Titivangsa Line, University Malaya Line and the Civic-Sentral Line will re-orient the daily lives of KL's residents to the river, allowing them to use water taxis to commute between work and home.

Traffic Management

Traffic management measures include road space allocation and network improvements, restraints on private vehicle use (motorcycles & automobiles), coordinated passenger transport, parking Management and road safety improvements.

5. Potential Public Activity and Landscaping

Quality open spaces and landscaping are fundamental to establishing the river as world class. The river forms the spine to a network of places and spaces of regional and local significance, with the surrounding areas creating the visual backdrop to the city and signalling different characters. The open space network includes hubs of specifically identified natural resources or open space and manmade features or destinations that influence the development of the network.



Open Spaces Network

The open spaces network provides for recreation uses and connections to improve north-south travel as well as east-west travel over the river, and further increase mobility and connectivity between important historical, cultural and heritage amenities that are popular among residents and tourists. The network aims to:

- Improve public facilities to make better use of existing open spaces;
- Improve connections between open spaces and community focal points including city and suburban retail centres and areas of work;
- Improve the safety of parks, reserves and linkages;
- Protect important natural, amenity, cultural and heritage features; and
- Plan for open space networks; improve existing linkages and create new networks in new areas of urban development.

River-Themed Activities

A comprehensive plan for activities at or close to the river will help to leverage the river as the engine for sustainable recreational, cultural, and economic development along the riverfront and reclaim the river as the source of regional identity, as one of the great rivers of the world, and establish KL as a leading river community for the 21st century.

Easy access is vital to draw people to the riverfront. Physical and visual connections to the river from nearby areas are important. Riverfronts can include many recreational uses, from bicycling to bird watching. People

should be able to touch and interact with the river in appropriate locations, whether through wading, fishing, launching a boat, or sitting on the riverbank. Economic revitalization along riverfronts, such as new mixed use development with housing, restaurants or cafes, and open space, is more successful when it includes visual and physical access to the water.

The planned activities should celebrate the river's environmental and cultural history. Interpretive and path-finding systems can describe the river, its environment, and how river and city history are intertwined. Educational and cultural programs, performances, and public art entice people to the riverfront. Ecological education is especially meaningful along the river because so much of the original ecosystem has been erased. As an active and visually rich environment the river can be powerful tool for science and nature education.

6. River Beautification and Water-Touching Experience

River edge character describes conditions for bringing the river to life. The edge characters add a variety of textures and experiences to the river corridor while responding to different slope and wall conditions along the banks of the river. The river edges should be articulated with layers of public and semi-public transition spaces that increase the number of activity settings and opportunities for people to occupy, use and enjoy the river's edges. In the details of river edges design, the local context and

identity is the key. Each waterfront will have its own story and community with varying needs.

The width of the river; the scale of surrounding buildings and their distance from the water's edge should guide the river edges. The sequential context of the river, the pattern of landscapes either side of the waterfront; the rhythm of built and open space and the views along and across the river set the frame for design. As a main component of the landscape framework the river edges and how they manifest as physical pieces of urban landscape is guided by river character zones.

The river edges shall be composed of an array of consistent elements that reoccur throughout the river's length. Organizing the elements in such a way will link together and maintain an aesthetic continuity that gives the whole an identity and distinguishes it as a special place. It establishes a sense of place by making a sequence of destinations linked by consistent river edges.

Education Gardens

Education Gardens centre on two themes including Habitat and Water Gardens. The gardens would be working demonstrations where people can see, feel and experience how new habitats are created and grow, how water management and cleansing systems work and benefit us. Habitat Gardens would create a vibrant, biodiverse environment and focus on specific habitats for amphibians, fish, insects, or birds. Native species and naturalized plantings should dominate.

Water Gardens would be functional as a sustainable water management systems that highlighting the various forms of rain water catchment, treatment and storage, including surfaces, swales, sedimentation basins, wetlands and cleansing biotopes. They provide a model for responsible water stewardship by careful use and reuse of water on-site for all non-potable purposes.

7. Environmentally Sustainable Development

Currently the water quality in the river is polluted with a heavy load of debris, suspended particles and solid waste that is flushed into the



river through storm water runoff. It is crucial to implement environmental strategies aimed at achieving integrated water resources management that helps with water level control, flood mitigation, water quality improvement and aquatic ecosystem restoration.

These aspirations would be realized in earth, plants and water. Water experiences will be most strongly affected by the type of relationships that are shared between the river and its neighbouring people and river edges. Only when the relationship is two-way and friendly will there be a balance, where the water has the ability to purify itself and plants and animals can establish diverse, and stable ecosystems.

The water system shares many techniques and solutions with the landscape for managing its flow and quality, from wetland edges, floating islands, and levee systems. Planting in the riparian zone between land and water has multiple roles and functions to fulfil in achieving balances controlling sediment, filtering nutrient, controlling erosion, providing habitat, and adding amenity value.

CONCLUSION

The River of Life presents unique and exciting opportunities for Kuala Lumpur to grow, infilling the urban core and the starting point of the city, enhancing the vitality of the city, preserving significant historic assets, encouraging new access to the waterfront, and establishing a regional asset that will attract and retain current and future generations to live, work, and play. This Plan gives direction to this potential by establishing a set of practical, yet imaginative, principles that will guide planning and investment decisions in the short- and long-term.



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STRATEGIC PLANNING TO PROMOTE PORT DICKSON AS THE NATIONAL BEACH RESORT AND WELLNESS ZONE



ABSTRACT

Natural coastal areas, with beautiful sandy beaches, dunes, coral reefs, estuaries and other unique elements have always been a natural recreation area for the young and old, and an attractive place for people to live. Coastal environments provide open spaces, the opportunity for leisure, relaxation, contemplation and physical activities. Coastal areas also provide economic and tourism opportunities and it is therefore vital that effective strategies are planned to capitalize on this important natural resource that can be used to generate business and wealth. However, coastal developments must be carried out in a sustainable manner to ensure that the coastal ecosystems are protected and preserved. Port Dickson a.k.a. PD is a popular tourist spot in Malaysia that was gazetted as a National Beach Resort and Wellness Zone on 29th September 2009. Following the announcement, the state of Negeri Sembilan has prepared an action plan to develop the area in line with that recognition. The plan contains planning strategies to develop the location's unique potential - featuring beach areas for beach resorts and some inland areas as wellness zones. The potential of the plan is viable, given the high numbers of tourists arriving at PD all year-round and to achieve this aim, it is imperative that the best strategic planning and action plans to bring up PD to international levels must be achieved. This paper will discuss the planning strategies, which include physical development and policy directions in developing the National Beach Resort and Wellness Zone of the country with PD as the prime focus.

Keywords: Coastal Planning, National Beach Resort, Wellness Zone

INTRODUCTION

The definition of “coastal” relates to the interface between land and sea, with unique geological, ecological and biological features, making it an attractive area for people to converge. The aesthetic and scenic elements of coastal zones make it invaluable as a source of inspiration and peace. Most people make coastal areas a popular place to relax and enjoy recreation activities such as boating, fishing, swimming, walking, jogging, beach-combing and sun-bathing.

The beaches in Port Dickson (PD) facing the Straits of Malacca are a popular weekend retreat within the Klang Valley, Negeri Sembilan and Melaka. The sandy beaches are fringed by casuarinas, coconut palms and the spreading branches of age-old Banyan trees. There are ten (10) beaches stretching 58 km long, covering an area of 6.643 km² of coastal land. The beaches are Tanjung Gemuk Beach, Bagan Pinang Beach, Saujana Beach, Cahaya Negeri Beach, Teluk Kemang Beach, Tg. Biru Beach, Cermin Beach, Telok Pelandok Beach, Dickson Beach and the 5th Mile Beach.

THE SIGNIFICANCE OF COASTAL PRESERVATION

The boundary between land and sea is one of the most fragile environments on land and is being constantly reshaped by the forces of nature. Looking at the growing numbers of development in coastal areas, the need to protect the coast from the threat of flooding and erosion is increasing. With the added threat of sea levels rise, the challenge is to find ways of protecting coastal areas without damaging the environments.

Different methods are used to protect coastal areas from the effects of flooding and erosion. These methods are usually divided into what are known as ‘hard engineering’ and ‘soft engineering’. Hard engineering refers to control and managing the forces of the sea by building barriers between the sea and the land, often in the form of sea walls. Concrete or wooden groynes are also used to reduce beach loss. On the other hand, soft engineering attempts to work with the natural environment. There are two main methods of soft engineering



– first is beach replenishment and recycling, which helps to preserve a wide, gently sloping beach that can absorb energy from storm waves; and the second is managed realignment, which allows the sea to flood inland until it reaches a natural barrier of higher land. In many coastal areas, a mix of both hard and soft engineering methods is used. Hard engineering methods are used where there is a need to protect built-up areas, while soft engineering methods are used in less built-up areas or more environmentally sensitive areas.

NATIONAL AND STATE POLICIES IN PRESERVING COASTAL AREAS

There are several policies and plans formulated in relation to preserving coastal areas at national and state levels.

National Physical Plan (NPP)

The National Physical Plan (NPP) sets out the national strategic spatial planning policies and measures taken to implement them with respect to the general direction and broad pattern of the land use and physical development and conservation in Peninsular Malaysia. NPP has identified PD District as a part of the Kuala Lumpur Conurbation and Western Planning Zone. NPP has also recognized PD as the Coastal Resort Town based on several special features.

National Coastal Zone Physical Plan (NPP-CZ)

The National Coastal Zone Physical Plan (NPP-CZ) is a Strategic Plan

which outlines land use direction for the use, conservation and management of coastal resources in a sustainable manner in Peninsular Malaysia. However, the NPP-CZ does not cover coastal areas in PD because the area was covered by another study, namely the Integrated Shoreline Management Plan (ISMP) conducted by the Department of Drainage and Irrigation (DID).

Integrated Shoreline Management Plan (ISMP)

The coastal areas study in PD was covered in a report under the Integrated Shoreline Management Plan (ISMP), which addresses major issues and problems facing shorelines. The ISMP has outlined four management strategies, i.e. development permitted with standard conditions; development permitted with restrictions; protected area; and prohibited area.

Negeri Sembilan State Structure Plan 2001-2020 (RSNNS)

The Negeri Sembilan State Structure Plan 2001-2020 (RSNNS) translates the national policies and then formulates policies according to outlined directions and project development strategies in line with the State's vision and mission. PD District is zoned as a National Beach Resort (NBR), Wellness Zone (WZ) and Military Town at the international level. The coastal areas of PD are zoned as four development zones, (i) eco-tourism, fisheries and aquaculture zone; development zone; tourism resort zone; and rural tourism, fisheries and aquaculture zone.

Port Dickson District Local Plan 2020 (RTDPD)

Planning at the local level is guided by the Port Dickson District Local Plan 2020 (RTDPD). The plan encapsulates detailed land use planning and translates policies from RSNNS into physical development. The tourism sector is given greater emphasis by taking advantage of existing coastal resources. These natural assets will be the main attraction to raise the reputation of PD District at the global level, through the development strategies to establish it as an international tourism centre by the year 2020.

DEFINITION AND CHARACTERISTICS OF NATIONAL BEACH RESORT AND WELNESS TOURISM

National Beach Resort

There are many definitions related to beach and coastal areas. Tom Garrison (2009) has defined such areas as the place where ocean meets land, and this is usually called the shore, while the term "coast" refers to the larger zone affected by the processes occurring at this boundary. A sandy beach might form the shore in an area, but the coast (or coastal zone) includes the marshes, sand dunes, and cliff just inland of the

beach as well as the sandbars and troughs immediately offshore. Beaches comprise the zone of unconsolidated (loose) particles that cover part or all of a shore. The landward limit of a beach may be vegetation, a sea cliff, relatively permanent sand dunes, or construction such as a seawall.

With reference to the WWF (1998), coastal zone is an area that includes part of the land and sea areas, which have impact on its long term sustainability and is strongly influenced by both the mass of seawater and freshwater. It is an area where a sudden transition from the influence of the land to the marine influence is controlled by the tides. Its ground boundaries vary depending on the area that includes all areas that have an influence on the coast.

This means that the coastal area is a sensitive area, which needs special attention with strategic planning and management to make sure the natural habitat will be sustainable. The coastal zone can be a very attractive area for people to conduct many activities. This is why nowadays many developments have been carried out along coastal areas, creating resorts to attract more people or tourists for holidays with beach activities. This scenario further enhances the tourism sector.



Characteristics of the National Beach Resort include the following elements:

Characteristics	Element
Quality of sea water and clean beaches	Must have an accreditation for sea water and coastal quality standards that meet the criteria of international Eco-Label Blue Flag by the Foundation for Environmental Education (FEE).
Interesting coastal zone and marine area	Special planning and control for coastal zone.
Marine and coastal areas are equipped with various interesting active and passive recreational activities	Offers a variety of marine and coastal activities such as swimming, beach football, horse riding, jogging, scuba diving, snorkeling, sunset viewing and fishing etc.
Serve as a resort city	Includes facilities related to three (3) main activities: culture, recreation and entertainment.
Provide high quality of facilities and infrastructure	Provide comfort for tourists, especially transportation (water, rail and road) and support facilities such as toilets and money changers.
Development of health and wellness tourism products along coastal areas	Diversify and increase tourism products based on health and wellness as a spa destination.
Conserving natural coastal areas	Prevents the development of conflicting land use and activities that will affect the image of beaches and natural attractions.
Attractive urban and landscape design	Architectural and landscape design quality that can enhance attractions.
Attractive coastal scenic drive areas	As a major tourist attraction for using the main road along the coast.

Source: Adapted from Port Dickson Municipal Council (2010).

Wellness Tourism

According to Dunn (1961), wellness is generally used to mean a healthy balance of the mind, body and spirit that results in an overall feeling of well-being. It has been used in the context of alternative medicine. It is different from the statement of Kaspar, who relates wellness tourism to a relationship with phenomenal results due to changes in location and lifestyles by a person who develops and balances mental health and adopts appropriate use of health services. This is where people choose to stay, temporarily or even permanently, for residence or for work. (Mueller and Kaufmann, 2000) Next, Goeldner (1989) describes health tourism as a living away from home, whereby health care is the most important objective and is implemented within a relaxed atmosphere.

This means that wellness tourism is not only about the healing service and disease prevention, but also includes wellness and fitness aspects. Today, wellness tourism has become more popular and attracts more attention as one of the tourism products.



The characteristics of the Wellness Zone include the following elements:

Character	Elements
Urban and rural	Involving the urban and rural areas and offer services and agro-based products.
Beach and marine	Offers recreational, tourism and water-based activities including accommodation within 1 km from coastline.
Ecology	Aquatic and ecologically-based nucleus such as mangrove and herbal plants.
Health	Involving health care, wellness and fitness.
Agriculture	Plant herbs that can treat patients within a panoramic setting which can give peace of mind to patients.
Cultural and History	Culture and history as an attraction in providing health spa services such as traditional Thai and Balinese treatments.
Vista	Beautiful scenery to calm patients and provision of spa treatments.

Source: Adapted from Port Dickson Municipal Council (2010).

BACKGROUND OF PORT DICKSON

Negeri Sembilan means 'Land of Nine States'. The state of Negeri Sembilan is divided into seven (7) districts, i.e. Seremban, Port Dickson, Tampin, Kuala Pilah, Rembau, Jelebu and Jempol. The state encompasses an area of 665,374.77 hectares and coastline length of 58 km. The total population of Negeri Sembilan in 2010 was 997,000 and is estimated to increase to 1.22 million by the year 2020. PD is the only coastal district in the state, which covers an area of 57,341.20 hectares with total population of 111,910 persons in 2010. In terms of Gross Domestic Product (GDP), the annual percentage

change in 2009 has shown a positive growth in agriculture, construction and services sectors of 1.5 per cent. One of the main sectors that have been contributing to the positive GDP is the tourism sector. Statistics show that the number of tourist arrivals in Negeri Sembilan in 2009 was 2.1 million and increased to 2.2 million in year 2010. From these statistics, 69 per cent (2009) of tourists spend their time in PD and the numbers increased to 70 per cent in year 2010. This situation shows that PD is absolutely an attractive area and has its own potential to expand further.

The district's coastline spans a variety of near shore and coastal ecosystems

including coral reefs, sea grass, seaweeds, sandy beaches, mudflats and mangrove swamps. These coastal areas are unique and different from others because there are few areas in the country where sea grasses are found. Based on this consideration, and the special features of PD, the federal government has announced PD to be part of the NBR and WZ. The local impact is that, more than a third of the coastlines in PD are heavily built up with a mix of commercial, housing, resort, hotels and tourism uses, including numerous structures such as jetties, power station with cooling water intake and discharge channels, reclamation and marinas built into the sea.

At the state level, various planning activities were made to enhance the quality of beaches to achieve the national mission and to bring PD to international levels. Among the plans are nourishment projects, designing the hard and soft landscape, building landmarks with special identities and motifs, improving water chalets and spa services, police support for safety reasons as well as building billboards with worldwide publicity and promotional support.

PLANNING TO STRENGTHEN PORT DICKSON AS THE NATIONAL BEACH RESORT AND WELLNESS ZONE

Various plans have been formulated to help PD achieve world-class beach status as the NBR and WZ. Figure 1 shows the areas gazetted as NBR, and this covers an area of over 18 km long from Kuala Lukut to Pasir Panjang while the WZ is located in an area 61.38 km² and 61 km long from Lukut to Pasir Panjang.



National Beach Resort

The NBR areas are located along the coast extending from the town center of PD up to the southern part of Tanjung Biru Beach. It also includes the corridor-drive tourism area and resort city. Planning strategies in the NBR have been formulated based on an integrated approach, which covers the various sectors of tourism, environment, economics, services and recreation. It is in line with the proposals of RTDPD 2020, which identified seven sectors to strengthen coastal and marine tourism in PD as in Figure 1.

The coastal area is divided into five development zones as follows:

Development Zone	Area of Coverage
Industry and Entertainment	Lukut Town
Water Recreation and Camping	Bagan Pinang Beach
Picnic, Relaxing and Water Sport	Saujana Beach and Tanjung Biru Beach
Family Day and Fishing	Cahaya Negeri Beach
Picnic, Relaxing, Water Sport, Government Programmes and Food Centre	Teluk Kemang Beach

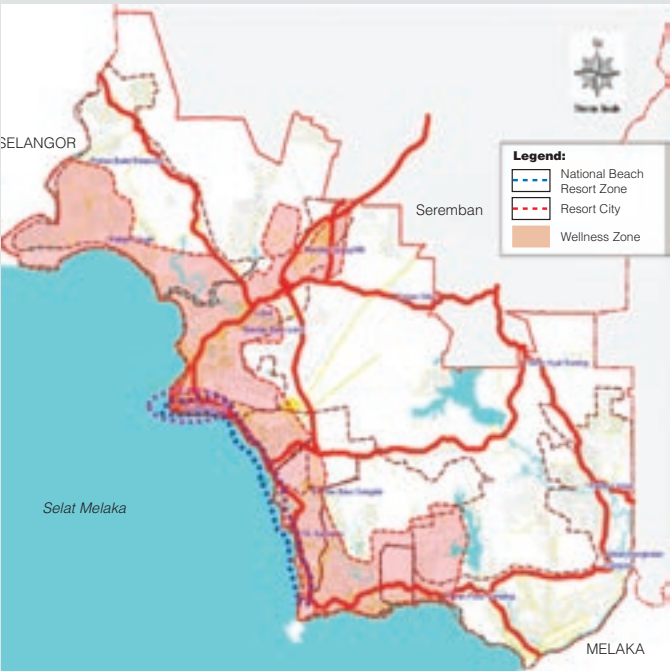
Source: Adapted from Port Dickson Municipal Council (2010).

According to RTDPD 2020, there are seven sectors to strengthen coastal and marine tourism in Port Dickson as in Figure 2. While, the rehabilitation programme for quality of sea water and beaches is made in four (4) phases:

Phase	Coastal Area
2007 – 2009	Teluk Kemang Beach and Admiral & Marina Leisure Club
2010 - 2012	Tanjung Biru Beach dan Bagan Pinang Beach (Avillion Resort)
2013 - 2015	Saujana Beach, Cahaya Negeri Beach (all hotels with 4-star rating and above)
2016 - 2020	Teluk Pelanduk Beach and Purnama Beach (all new hotels)

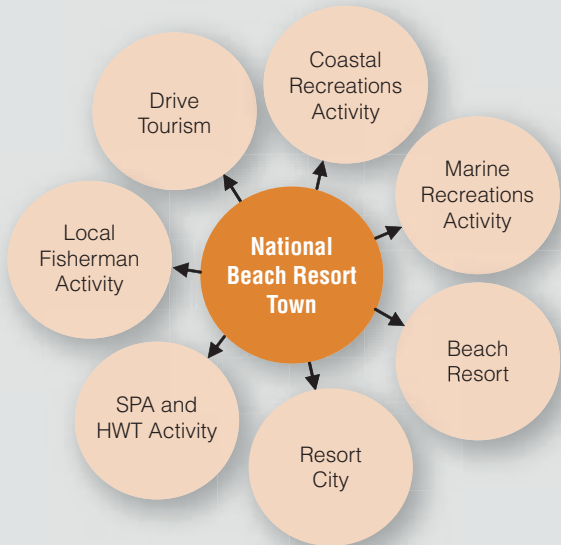
Source: Adapted from Port Dickson Municipal Council (2010).

Figure 1: National Beach Resort and Wellness Zone in Port Dickson



Source: Adapted from Port Dickson Municipal Council (2010)

Figure 2: Sectors for Strengthening Coastal and Marine Tourism in Port Dickson



Source: Adapted from Port Dickson Municipal Council (2010).

Planning strategy to recognize PD as a Resort City, covering three (3) elements as follows:

Main Element	Extra Element	Secondary Element
Cultural Facilities: <ul style="list-style-type: none"> MICE for state State Art Gallery State Theater Hall (Concert and Theater) Cinema Museum (archeology, maritime and army) Recreation and Relaxing Facilities: <ul style="list-style-type: none"> Town Square Esplanade (<i>seafrosts</i>)/ walkway Gymnasium Entertainment Facilities: <ul style="list-style-type: none"> Theme Park Entertainment Club Amusement arcade & Bowling alley Seasonal Event 	<ul style="list-style-type: none"> District Transportation Hub Jetty Port Dickson Tourist Information Center Tourist police Attractive Urban Design 	<ul style="list-style-type: none"> Internationally-rated hotels International Shopping (Free Duty Zone) Exclusive boutiques Craft Market - gifts Exotic restaurants

Source: Adapted from Port Dickson Municipal Council (2010).

Wellness Zone

The development of the WZ is closely related to the development of the NBR because both are in the same areas. At the initial stages, a pilot project covering 176 hectares (435 acres) has been developed as WZ in Palm Spring Resort. The proposed development is Wellness Village, Water Theme Park, Retirement Village and others. It focuses on tourism activities that involve the concept of health care treatments and wellness spas. The potential sectors for developing Health and Wellness Tourism (HWT) are as shown in Figure 3.

The formation of nucleus for the Health and Wellness Zone is:

Health And Wellness Zone	
Current Nucleus (Main Hub)	PD Palm Springs Resort
Extended Current Nucleus	Tiara Beach Resort and surrounding agriculture areas.
Future Nucleus	Agriculture areas in Mukim Linggi
Inviolele Belt	Along coastal PD District with tourism facilities and accommodation.

The main element of the Wellness Zone is spa activities. At present, PD has some spa activities and is expected to grow to several potential types of spa activities as follows:

Figure 3: Potential Sectors for Development of HTW in Port Dickson



Source: Adapted from Port Dickson Municipal Council (2010)

Current And Potential Spa			
Current spa	Location	Potential spa	Location
Day /Club Spa	Existing Commercial Premises in PD and Lukut Town	Cruise Ship Spa	Admiral Marina & Leisure Club
Destination Spa	Pilot Project - PD Palm Springs Resort	Medical Spa	All areas
Resort/ Hotel Spa	Existing Resort/ Hotel activities	Sea Water Spa	Coastal area
		Academic Spa (Spa Training Center)	All areas

Source: Adapted from Port Dickson Municipal Council (2010).

In addition, as underlined in the RTDPD 2020, there are several measures proposed to develop the WZ such as:

Development For Wellness Zone
Wellness Walk in Teluk Kemang, Batu 8
Eco-tourism Park in the forest of Menyala River, Batu 5
Cultivation of herbal plants in the landscape design development
Commercial development along the coastal area in PD town
Malaysia My Second Home in Springhill Town
Development of Universiti College Sedaya International (UCSI) in Springhill Town
Development of International Maritime Gateway in PD Town
Development of premises for alternative and tradisional medication in Springhill Town

Source: Adapted from Port Dickson Municipal Council (2010).

CONCLUSION

The state of Negeri Sembilan has undertaken proactive action to realize the vision of Port Dickson as a National Beach Resort and Wellness Zone through comprehensive planning strategies. The action plan requires the involvement and participation of various stakeholders, especially technical departments during the implementation stage. The characteristics of NBR and WZ were identified so as to facilitate the formulation of appropriate strategies. These planning strategies take into consideration local conditions while preserving the coastal ecosystem. This will enhance the unique features of Port Dickson to attract more people and to ensure a sustainable future.

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CONSERVING THE ENVIRONMENT AND BIODIVERSITY OF BALAMBANGAN ISLAND, SABAH



ABSTRACT

This paper outlines a carrying capacity study conducted on Balambangan Island, Sabah, which is rich in natural resources, biodiversity and historical heritage. In determining the carrying capacity of the island, the study measured the availability of land for new development, the capacity of infrastructure and utilities to provide service and the capacity of beaches to accommodate users against population and tourist size. The finding shows that the island's carrying capacity is able to sustain it beyond 2015. This paper recommends that carrying capacity study becomes part of the development plan formulation process in developing and conserving island or marine sites.

Keywords: Carrying Capacity, Marine Park, Development Plan.



INTRODUCTION

Plants, animals, micro-organisms, and other different ecosystems on the planet such as rainforests, deserts and coral reefs are all part of a biologically diverse earth. A healthy biodiversity provides for the protection of water resources, soil formation, pollution breakdown and absorption. It also contributes to climate stability, maintenance of ecosystem, food and medicinal resources, diversity, research, education tourism and historical preservation.

A way to describe carrying capacity is that it determines how much use or activity a given setting can absorb before unacceptable impact occurs.

World views differ on the concept of carrying capacity according to discipline or focus. To enable carrying capacity to be measured effectively for the purpose of planning and management, it should be integrated in the formation stage of the management plan.

This paper briefly explains the significance of environment and biodiversity conservation and the current profile of Balambangan Island, Sabah focusing on the environment and biodiversity conservation efforts. This paper also discusses the method of measuring carrying capacity and the findings of the carrying capacity analysis.

THE SIGNIFICANCE OF ENVIRONMENT AND BIODIVERSITY CONSERVATION

The variety of life on earth and its biological diversity is commonly referred to as biodiversity. Many people may support environmental causes to help preserve the beauty of nature. For many decades, various environmentalists, biologists and other scientists have viewed the entire earth as a massive living organism due to the interdependent nature of all species within it. Ecological balance and biodiversity are crucial for all of earth not just humans. Environmental and biodiversity conservation provides huge benefit in a wide aspect. Nature and biodiversity provide services to humans - clean water to drink, clean air





Views of Balambangan Island

to breathe, soil for agriculture and also the pollinating effect of many insects. These services are largely invisible to us and difficult to give monetary values when compared to development and policy decisions.

Nature also provides huge direct and indirect economic benefits from ecotourism, agriculture and fisheries activities. In terms of medicine, most of the pharmaceuticals being used are derived from natural products such as tree species which help prevent malaria, treat heart conditions and fight cancer. A forest with high diversity will prevent erosion, protect water resources, prevent heavy rains from turning into floods, nutrient storage and recycling, pollution absorption, and contribute to climate stability and the maintenance of ecosystems. Nature and biodiversity also has an aesthetic quality. It contributes to the economy in various ways and also enriches people's lives. People experience nature in a way that goes beyond economics and also beyond nature's beauty.

PROFILE OF BALAMBANGAN ISLAND, SABAH

Balambangan Island is located about 30km to the north of Kudat City, Sabah. The island is 11,746.19 hectares and can only be reached by sea. The topography is hilly and rocky, with limestone hills in the south and flat land and silica sands in the north. The existing population is 510 people. The main settlements are Kampung Selamat, Kampung Batu Sirih and Kampung Kok Simpul, which are fisherman villages accessible by trails and sea transportation. Currently

Balambangan Island has no water and electricity supply.

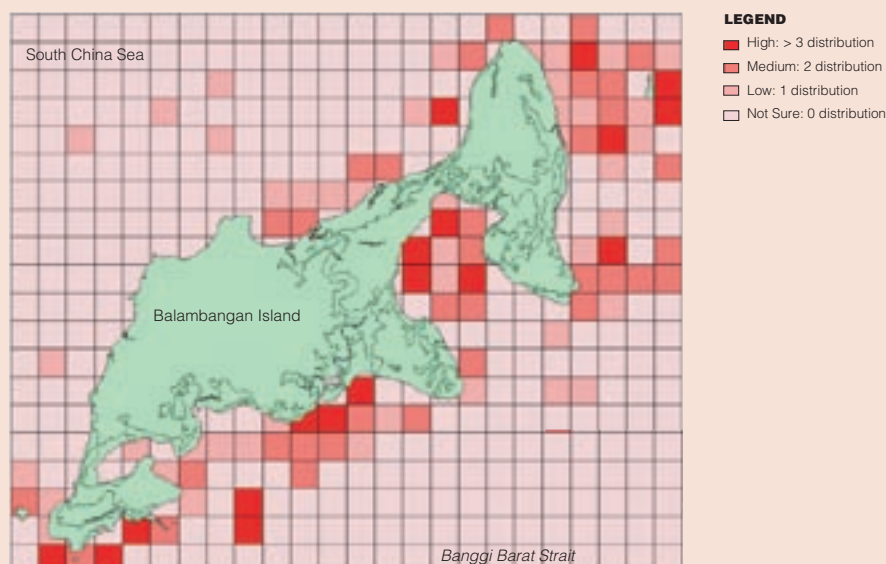
Balambangan Island is rich in biodiversity and natural resources. The island is important for aquatic habitats of marine life such as coral, sea grass, seaweed, dugong, turtle, dolphin, whale and sea snake. The island is also famous for its saltwater crocodiles (*Crocodylus porosus*) which are not found in any other place in Malaysia. The analysis of marine life distribution in Balambangan Island within 1 sq. km is as showed in Figure 1. This analysis is based on a marine life study conducted by WWF Malaysia and Sabah Parks in 2007.

Apart from being rich with marine life, the study also revealed Balambangan Island is unique with various species of flora, such as *Seraya* (*Shorea*

Faguetiana) which is rarely found, orchid species (*Paphiopedilhon Philipinense*) which is only found in limestone areas and *Occultus Pandanus* species which is found only in two places in the world, that is Philippines and Balambangan Island. Similarly, a species of limestone snail (*Arinia Boreoborneosis*), which was categorized as a 'Red List' species (critically endangered species) by the International Union for the Conservation of Nature (IUCN), is found on Balambangan Island.

The island also has a high historical value with two archaeological sites - Batu Sirih Cave (from Paleolithic era with ancient drawings) and 'British East India Company' site in Tanjung Periuk (50 acres) where old pottery and plates were found (Sabah Museum Department, 2007).

Figure 1: Analysis of Marine life Distribution



Source: Adapted from WWF Malaysia, 2007.

Figure 2: The Various Natural and Historical Resources of Balambangan Island



The latest study by the Ministry of Natural Resources and Environment (NRE) (2011) also shows that the island is rich in physico-chemical sources, such as rocks, fossils and structures, sea caves and sea cliffs rocks, and coral reefs that play an important role in marine fish breeding (Figure 2).

Considering the uniqueness of Balambangan island, it has been included under the international agreement of **Coral Triangle Initiative (CTI)** which plays an important role in conserving biodiversity and marine life. Through CTI, marine resources around the island can be preserved for scientific research, education, recreation and tourism purposes (Figure 3).

MEASUREMENT OF CARRYING CAPACITY

The carrying capacity concept can be generally understood as a planning and management process to identify how much change is acceptable (threshold) for an environment, and recommends actions to be taken to reduce or limit the negative effects (Lim,1997). There are various definitions of carrying capacity. Getz (1982) divides it into two criteria, i.e. physical and ecological as explained below:

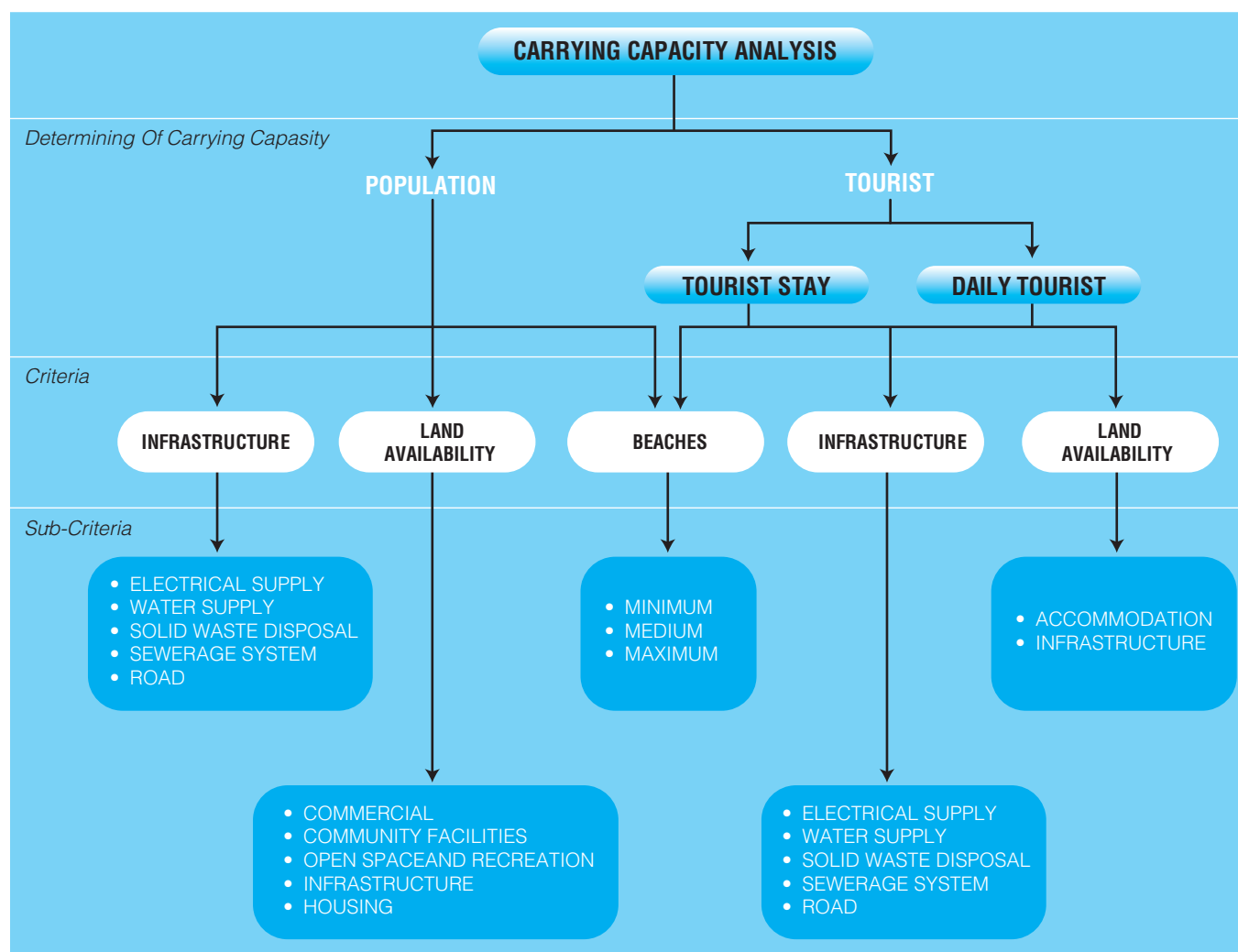
- i. **Physical** - the threshold limit for space. This becomes the basic definition pertaining to limits on tangible resources, such as land, investment, labour, accommodation or transport services.
- ii. **Ecological** - 'the threshold limit of natural environment, beyond which an unacceptable or irreversible decline in ecological values occurs.

The important element in defining carrying capacity is the assumption of limits or thresholds, beyond which additional growth or change cannot be supported or is considered undesirable. Therefore, the function of carrying capacity is very important in preserving and conserving natural resources and biodiversity through the identification of potential area for development and the maximum carrying capacity of the area.

Figure 3: The Coral Triangle Boundary



Figure 4: The Measurement Factors and Criteria for Carrying Capacity Study



Source: Federal Department of Town and Country Planning (2007).

For Balambangan island carrying capacity study, it is divided into two components, i.e. (i) determining factors of carrying capacity, and (ii) the criteria of measuring the carrying capacity (Figure 4).

Determining Factors of Carrying Capacity

Population size and number of tourists were selected as the main determining factors of carrying capacity. It is assumed that through the study of carrying capacity, the natural and marine ecosystems can be protected for the benefit of residents and tourists.

In brief, the total population of Balambangan Island has decreased by 38 people (from 512 people in 1991 to 474 people in 2000) due to out-migration to main land. For the number of tourist, data recorded by

Sabah Tourism Department shows that only 672 people visiting Balambangan Island in 2007. The tourist number to this island is expected to increase in the future considering there are diversified natural resources on the island which may attract tourists to come.

The Criteria of Carrying Capacity

Three (3) main criteria have been applied to measure the carrying capacity of Balambangan Island. It includes:

- Capacity of land - in terms of suitability and availability of land to accommodate future development.
- Capacity of infrastructure and utility to provide services, and
- Capacity of beaches to accommodate users (especially tourists).

RESULTS OF CARRYING CAPACITY ANALYSIS

The general results from carrying capacity analysis are as follows:

- i. There is plenty of land for future development on Balambangan Island, where 6,491.43 hectares (55.26 % of the total area) is recorded as undeveloped. The analysis shows that only 21.06 hectares of land is required to meet the needs of residents and tourists up to 2015.
- ii. The study found that demand for water supply by 2015 is 68,597 gallons of water/day, electricity is 14018.5 kw/day, solid waste will be generated at 885.9 kg/day,

and sanitation waste at 994 PE (population equivalent). Currently, Balambangan Island is not provided with proper infrastructure and utilities.

- iii. In terms of beach capacity, the number of tourists that can be accommodated by existing beaches in Balambangan Island at one time is between 1,000 to 2,000 people.

These results show that based on the total population of the current settlement and the number of tourists, the carrying capacity of Balambang Island for tourism activities is still in a good situation with regard to conserving the environment and biodiversity of the island.

CONCLUSION

Conserving the environment and biodiversity of islands are crucial since the islands always become the destination for tourism activities. To maintain a balance between economic benefits and environmental conservation so as to ensure sustainable development of the island, certain natural resource planning and management techniques are required. The carrying capacity method as applied in the Balambangan Island study is seen as a significant tool to conserve the island without neglecting the importance of development for the benefit of the economy. Through carrying capacity analysis, the minimum and maximum capacities of each island to accommodate future physical development, such as settlements and facilities, as well as human activities of residents and tourists can be determined.

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MSMA: ITS RELEVANCE TO URBAN PLANNERS



ABSTRACT

Urbanisation results in increased runoff and the consequential degradation of water quality, leaving significant impact on the urban environment. To better manage urban stormwater management, the Department of Irrigation and Drainage (DID), Malaysia introduced a guideline called Manual Saliran Mesra Alam or MSMA in January 2001. Its control-at-source concept to guarantee zero development impact in both quantity and quality of runoff. It has been said to have revolutionised urban stormwater management in this country. Successful implementation of its principles and techniques however calls for an interdisciplinary approach by professionals of the built environment, including urban planners. Although it is understood that urban planners need to at least appreciate the manual to communicate with their engineering counterparts on stormwater matters, not much is known as to the degree of their understanding and their perception on the importance of the manual. This paper argues that when it comes to urban planning, there is more to MSMA than just a detention or retention pond. The paper first examines the principles of MSMA and their relevance to the urban planning profession before discussing the findings of a survey carried out to assess the level of awareness, understanding and involvement of urban planning professionals in the implementation of MSMA. A total of 150 questionnaire sets were distributed to randomly-selected urban planning professionals of which 92 were returned, giving a response rate of about 61%. Results revealed that majority of the respondents were aware of MSMA. However, many of those who claimed to understand MSMA failed to correctly answer basic questions about the manual. While some respondents admitted that they used MSMA in their works, the level of their involvement however varied. Overall, majority of the respondents agreed that there was a general lack of awareness and understanding of MSMA among planning professionals, which they attributed to a variety of reasons.

Keywords: MSMA, Stormwater Management, Environmental Planning



INTRODUCTION

Water environments are highly valued in urban areas as environmental, aesthetic and recreational resources, making them an important community asset. Rapid urban development however poses serious threat to urban ecosystem stability. Recent projection indicated that by the year 2020 seventy five percents of Malaysian are urban dwellers. Land alteration associated with urbanisation such as loss of vegetation, replacement of pervious with impervious surfaces and drainage channel modifications have significantly contributed to the deterioration of water quality, degradation of stream habitats, increase in flooding, etc. The effects of urbanisation on the water cycle itself are discussed in details elsewhere by Chocat et al. (2007). In an effort to implement a comprehensive approach to urban stormwater management, the Department of Irrigation and Drainage (DID) Malaysia introduced Urban Stormwater Management Manual for Malaysia (Manual Saliran Mesra Alam Malaysia or MSMA) in January 2001. Although the manual has been well received by all the development stakeholders and the relevant professionals, the extent of its relevance and adoption by urban planning professionals remains unclear. This article begins with a brief review on urban stormwater management and the MSMA

principles before discussing the level of awareness, understanding and involvement of urban planning professionals in implementing MSMA.

APPROACHES TO URBAN STORMWATER MANAGEMENT

Although urban drainage systems have been developed over the past 5000 years, their effective use still poses many challenges. The conventional engineering methods to overcome stormwater issues include conveyance and detention ponds as well as larger and deeper drains to accommodate ever increasing stormwater. These structural techniques were however seen as less efficient in reducing peak flow rate, as the water still flows into the main river with high speed and in brief periods (Ferguson, 1998). The weakness of this approach is evident in the increase of river flow velocity, as well as the promotion of the river bank's erosion process which make rivers shallower as a consequence of precipitation-eroded materials (Debo and Reese, 2003).

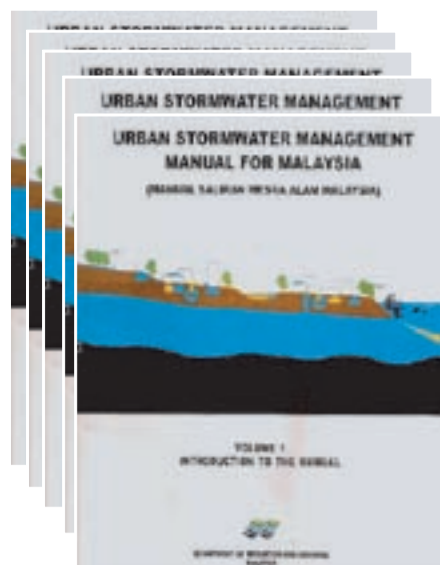
In the course of climate change and population growth particularly in developing countries, there are growing concerns with respect to runoff quantity and quality, visual amenity (landscape aesthetics), protection of ecology and beneficial water uses and interaction with the

operation of existing wastewater systems (Chocat et al., 2007). Therefore a shift to an approach that comprises both structural and non-structural responses especially those that maximises multifunctional opportunities for urban land use is needed. Many studies have been performed to improve the sustainability of urban water systems in the context of the Integrated Water Resources Management (IWRM), which is a systematic and participatory process to comprehensively take into account social, economic, and environmental aspects for sustainable water development and management (Petit and Baron, 2009). An integrated system would incorporate all the water infrastructures related to water supply, storm drainage, and wastewater systems into a system for efficient and effective water management (Anderson and Iyaduri, 2003). The challenge for the scientific community is that, it should engage all the key stakeholders to guide the development of urban water management into a future that is sustainable for future generation and the environment.

MSMA AND URBAN PLANNING

The underlying principle of MSMA is the control-at-source concept to guarantee zero downstream development impact on the quantity and quality of runoff (Sidek et al., 2004a; Zakaria et al., 2004). The manual provides guidance to all regulators, planners and designers on the management of urban stormwater in Malaysia. It outlines six main objectives which are to (i) ensure the safety of the public; (ii) control flooding nuisance and provide for the safe passage of less frequent and larger flood events; (iii) stabilise the landform and control erosion; (iv) optimise the land available for urban development; (v) minimise the environmental impact of urban runoff on water quality; and (vi) enhance the urban landscape (DID, 2001). Overall, MSMA contains forty eight chapters which are divided into nine parts of different main topics and published in twenty volumes (Figure 1). The first three parts contain background information on environmental processes and stormwater management, administration aspects and planning processes. The remaining parts contain detailed information on

Figure 1: MSMA Volumes



hydrology and hydraulic, runoff quality control and conveyance, source and treatment runoff quality controls, runoff quality controls during construction and special stormwater applications. There are seven principles of MSMA comprising of: (1) accepting shared responsibility; (2) integrated land use planning; (3) water-sensitive urban design; (4) multipurpose use of stormwater infrastructures; (5) promoting ecologically sustainable development (ESD); (6) developing the best mix of strategies; and (7) encouraging innovation (DID, 2001). Of these, Principles 1 to 5 should be of concern and related to urban planners when they are designing/reviewing layouts or preparing local plans. In pursuance of these principles, MSMA has recommended various innovative methods to be implemented (Sidek *et al.*, 2004b) which require attention by urban planners during the planning stage.

It has been ten years since MSMA was first introduced in 2001. The DID expected this manual to be accepted among Malaysian urban development professionals such as engineers and urban planners within 15 years time. Hence, various MSMA-related programs were conducted to introduce MSMA and train those professionals dealing with urban stormwater management. There were seminars, workshops and conferences conducted by both government departments and private sectors. However, these efforts seem to be were targeted to one particular professional, i.e civil engineers. Not much is known about how much other relevant professionals appreciate or at least are aware of MSMA since the spirit of integrated land use as embedded in MSMA calls for their contribution. To facilitate the application of MSMA by all targeted stakeholders, the DID categorised the manual's content into areas which require understanding and areas which require only appreciation by them (Table 1).

Questions are raised as to why urban planners need to understand certain aspects of Part 1 to 3 but they need to only appreciate areas highly relevant to them contained in Volumes 7 and 8 which deal with detention and retention ponds as well as Volumes 17 which addresses landscaping and watercourse management. The 2nd National Physical Plan also calls for

traditional flood mitigation approaches to be integrated with source control measures based on MSMA as well as the need for surface and ground water resources to be managed sustainably (JPBD, 2010). There is no denying that urban planners can play a major role in ensuring successful implementation of MSMA as they are at the forefront in designing the land use for new development and in deciding the land uses in development plans. Decisions to incorporate stormwater management plan at the early stage of land use planning leads to more water-sensitive urban design and an environment-sensitive stormwater drainage layout. A comprehensive study of correlating water quality to urban form has also underlined the need to move beyond the dependency on customary structural measures and end-of-pipe solutions and the key role that urban planning can play in safeguarding urban water environments (Goonetilleke *et al.*, 2005).

MSMA AMONG URBAN PLANNERS

To what extent MSMA is relevant to urban planners can be glimpsed from the findings of a survey research carried out by the authors, eight years after the introduction of the manual. The survey then had the following objectives: (1) to assess the awareness level of planning professionals about MSMA; (2) to determine how much they understand MSMA; (3) to investigate the use of MSMA in their work; and finally (4) to survey their opinions and views on MSMA. A total of 150 potential respondents were randomly selected from a sampling population made up of planning professionals from the Malaysian Institute of Planners' database on planning consultants, local authorities and the Department of Town and Country Planning. For the purpose of the research, planning professionals were defined to include those who graduated with a diploma in urban/town planning since they too were likely to deal with MSMA in their works. A total of 92 questionnaires were returned, giving a response rate of about 61% comprising of 50 (54%) respondents from the government sectors (17 planners, 33 technical assistants) and 42 (46%) respondents from the private sectors (35 planners, 7 technical assistants). Following are the findings of the survey.

Table 1: Relevance of each chapter to different authorities and users

Parts (A - I) and Chapters (1 - 48)	Administration, operations & maintenance				Planning & Design				Construction		Education			
	Federal Authorities (DTCP, DID, DOE)	State level			Urban Planners	Civil Engineer/ Designer	Environmental Designers/ Environmental Scientist	Landscape Architects	Developers	Contractors	Urban Planning	Hydrology and Hydraulics	Water Quality/ Environment	Landscape Architecture
		DTCP	DID	DOE										
Part A: Introduction														
1. Malaysian Perspective														
2. Environmental Process														
3. Stormwater Management														
Part B Administration														
4. Design Acceptance Criteria														
5. Institutional and Legal Framework														
6. Authority Requirements and Documentation														
Part C: Planning														
7. Planning Framework														
8. Strategic Planning														
9. Master Planning														
10. Choice of Management Options														
Part D: Hydrology and Hydraulics														
11. Hydrologic Design and Concepts														
12. Hydraulics Fundamentals														
13. Design Rainfall														
14. Flow Estimation and Routing														
15. Pollution Estimation, Transport and Retention														
16. Stormwater System Design														
17. Computer Model & Software														
Part E: Runoff Quality Control														
18. Principle of Quantity Control														
19. On-site Detention														
20. Community and Regional Detention														
21. On-site Community Retention														
22. Regional Retention														
Part F: Runoff Conveyance														
23. Roof and Property Drainage														
24. Stormwater Inlets														
25. Pipe Drains														
26. Open Drains														
27. Culverts														
28. Engineered Waterways														
29. Hydraulics Structures														
Part G: Post Construction Runoff Quality Control														
30. Stormwater Quality Monitoring														
31. Filtration														
32. Infiltration														
33. Oil Separator														
34. Gross Pollutant Trap														
35. Constructed Pollutants and Wetlands														
36. Housekeeping Activities														
37. Community Education														
Part H: Construction Runoff Quality Control														
38. Actions to Control Pollution and Sediment														
39. Erosions and Sediments Control Measures														
40. Contractor Activity Control Measure														
41. Erosion and Sediment Control Plan														
Part I: Special Application														
42. Landscaping														
43. Riparian Vegetation and Watercourse Management														
44. Subsoil Drainage														
45. Pumped Drainage														
46. Lowland, Tidal and Small Island Drainage														
47. Hillside Drainage														
48. Wet Weather Wastewater Overflow														

Understanding of the issue/activity is necessaryInvolving Urban PlanningAppreciation of the issue/activity is advantageous

Source: DID (2001)

Awareness and Understanding of MSMA

Almost three quarters (73%) of the respondents claimed to be aware of the existence of MSMA and the level of awareness was higher among planners compared to technical assistants. Probably because of the nature of their work or the dissemination of information or publicity, planning officials from the government sector seem to be more aware of the existence of MSMA than their private counterparts. All of the government planners who responded claimed that they were aware of MSMA while only 80% of the private planners who responded claimed the same (Figure 2). The level was even worse for the private technical assistants.

How they came to know about MSMA also varied widely. Twenty percents of the respondents obtained information about MSMA from conferences, workshops and seminars. This is followed by 16% who said they referred to guidelines issued by DID and 12% who learned about MSMA either through colleagues or the internet or daily works. Other sources of information included journals (9%), mass media (8%), books (7%) and from college (4%). It is indeed surprising to know that only 4% of the respondents knew about MSMA through their tertiary education.

However, claiming to be aware of MSMA is not the same as being aware of MSMA. Basic questions concerning MSMA were therefore asked and the answers given were less encouraging. Of those who claimed to be aware of MSMA, only 46% answered correctly the year MSMA was first implemented while 24% chose 'not sure' as their answers, the rest either got it wrong or did not attempt. The responses were even less encouraging when asked about which volumes of MSMA they thought were relevant to urban planning profession. Seventy nine percents of the respondents responded they did not know while only six (9%) respondents answered Volume 1, 2, and 3. None of them thought other volumes such as Volumes 7 and 8 that deal with detention and retention ponds as well as Volumes 17 that concerns landscaping and watercourse management are relevant.

Almost all (91%) of the respondents understood the basic concept being promoted by MSMA by correctly indicating that MSMA advocates the control-at-source concept. However, although 70% of the respondents claimed to know the principles of MSMA, only 39% claimed they knew the various techniques or methods promoted by the manual. Evidence from the survey showed that the difficulty in understanding the principles and methods of MSMA is shared by all. An alarming

81% of the respondents indicated having difficulties in understanding MSMA. Twenty five percents of the respondents gave lack of exposure as the main reason for their difficulties. Almost equal number of respondents attributed their difficulties to MSMA being too engineering and to MSMA being too technical. While 17% blamed lack of exposure during their tertiary education, a surprising 12% attributed their difficulties to MSMA being irrelevant to urban planning (Figure 3).

Figure 2: Awareness about MSMA

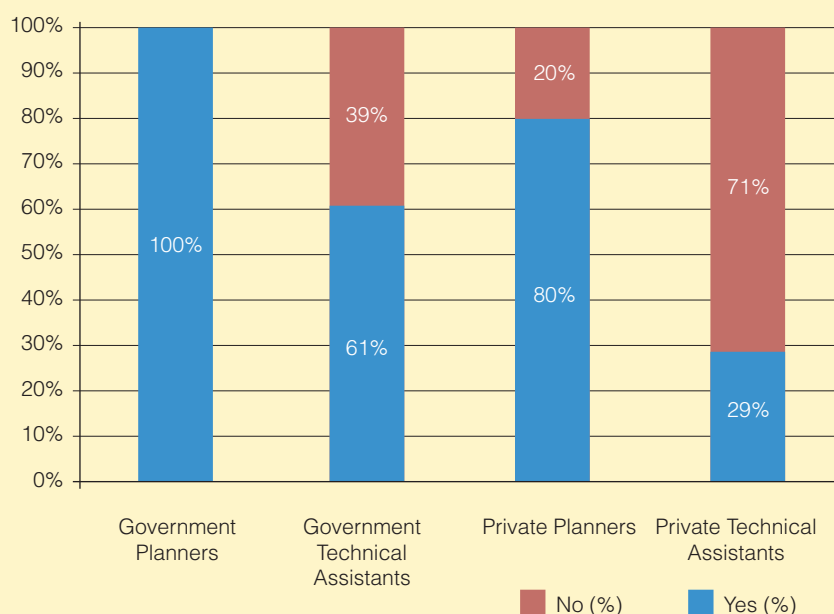
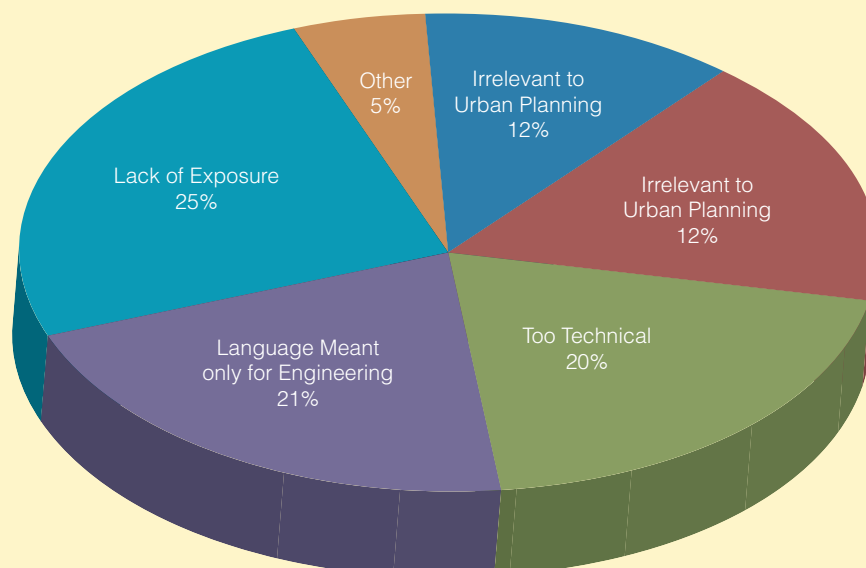


Figure 3: Reasons given for difficulty in understanding MSMA contents



Involvement with MSMA

Of the total respondents, 48% indicated having had some experience using/referring to MSMA in their works. While planners in the private sector use MSMA during design of layout plans or preparation of local plans, planners in the government sectors refer to MSMA during their review of these plans. The survey also revealed that about 61% of the respondents interacted with civil engineers on MSMA to discuss about general site planning, drainage system, flood control and use of open space for drainage purposes. Figure 4 shows the drainage methods and the percentage of respondents claiming they were involved in the planning and design of these methods. A big percentage (63%) of the responses concern stormwater detention/retention facilities (detention ponds, retention ponds, on-site detention storage).

When asked to give their opinions, more than two thirds (70%) of the respondents thought there was lack of awareness, understanding and active involvement in MSMA among planning professionals. Majority of them (85%) also agreed on the need for urban planners to know and master the aspect of MSMA related to their profession in order to implement an integrated urban stormwater management system set out in MSMA. Asked to rank the pre-determined factors hindering them from embracing MSMA, majority of them ticked 'Lack of Exposure' as the number one reason, followed by 'Lack of Information' and so on (Figure 5). When asked if they were keen to learn more about MSMA, almost 100% of the respondents answered in the affirmative and many (30%) indicated conferences/workshops/seminars as their learning method of choice. Other methods of choice included website and journals (17% respectively), educational institution (14%), books (12%) and mass media (10%).

Figure 4: MSMA's stormwater management methods the respondents worked on

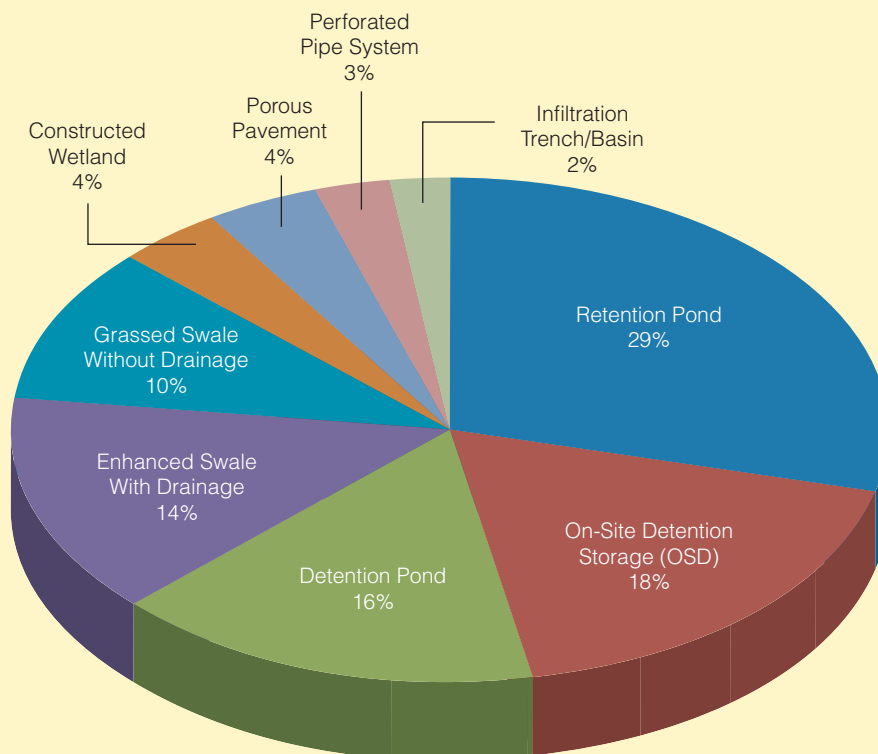
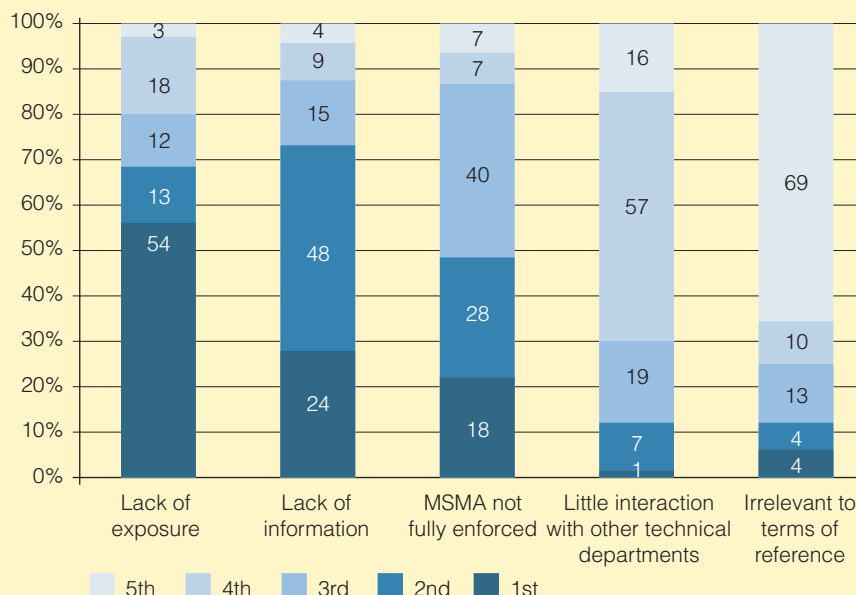


Figure 5: Factors hindering planners from embracing MSMA





MSMA encourages a scenic meandering natural stream (left) rather than a straightened fast-flowing eroding stream (right) in our housing areas. (Photos: Google Earth)

CONCLUSION

MSMA has a central role to play in "planning in blue". In the midst of severe impact we are seeing every so often from the ever changing weather on top of poor management of our stormwater, MSMA can still offer us some hope provided that its spirit and principles are understood and duly observed by all the professionals concerned. All the professionals concerned include not only civil/drainage engineers but also urban planners, landscape architects, etc. In order for MSMA to fulfil its functions, every professional involved needs first to understand the spirit and principles of MSMA before understanding what his/her role is. The role of urban planners in MSMA is actually more important than what was thought or allowed by the manual. More than just appreciating the design of detention/retention ponds, urban planners should play an active role in deciding the location and function of the ponds and the integration of land use activities surrounding the ponds.

Armed with the principles of conserving the natural watercourse advocated in Chapter 43 of the manual, urban planners should use their expertise on how to conserve the natural watercourse through assigning appropriate land uses along it. This would be much better than the common practice of delineating a straight drainage reserve of a certain fixed width along a meandering stream, colour it blue and then leave it to the engineers to decide what to do with the reserve. Thus, the current challenges of managing urban

stormwater call for the urban planners to work together with the engineers to design an integrated stormwater management facility that serves other purposes too while functioning as an environmental-friendly drainage system. Environmental-friendly and sustainable stormwater management as advocated in MSMA will be more likely achievable if the urban planners know and play their roles well as inspired by the spirit of MSMA. This, of course, requires substantial understanding of the manual by all parties involved, not the very least urban planners.

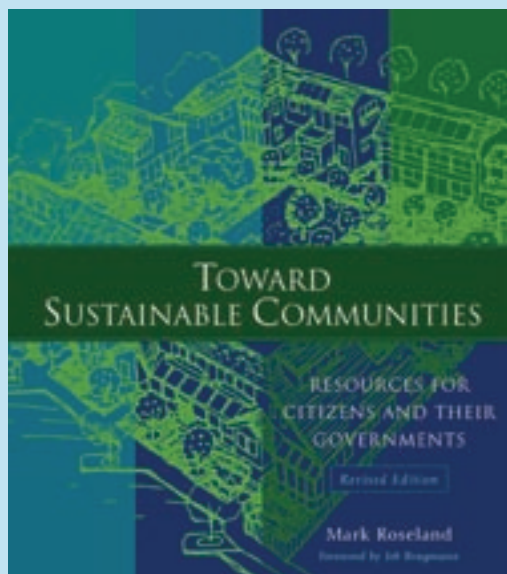
If the results of the survey are an indication of the level of awareness, understanding and involvement of urban planners in the implementation of MSMA, they have yet a long way to go to maximise their role in an integrated urban stormwater management system. While it is comforting to know that majority of them are aware of the existence of MSMA, it is quite disappointing to learn how little they understand the principles and the requirements of MSMA that are related to their profession. Educational campaigns should therefore be carried out to inform the planners that they also have important roles to play in MSMA. This can be done through a series of seminars, workshops, etc. involving the Department of Irrigation and Drainage, the Department of Town and Country Planning, professional bodies, and planning educational institutions. As for future urban planners, the urban planning curricula need to include MSMA or at least the concept and principles it adheres to.

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BOOKS: Editor's Choice

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TOWARD SUSTAINABLE COMMUNITIES: RESOURCES FOR CITIZENS AND THEIR GOVERNMENTS

Mark Roseland

Publisher: New Society Publishers

Place of Publication: Canada

Year of Publication: 2005 (Third Edition)

Pages: 239

ISBN: 978-0-86571-535-6

Many of our most critical global environmental issues are rooted in local, day-to-day problems. Atmospheric and potential climate change, for example, can be altered by local communities and government officials making enlightened decisions about local traffic congestion and inefficient land-use patterns. Local decisions about such issues benefit all of us globally.

While global environmental change is accelerating, there is a wealth of important and exciting information that can help us set the planet on a sustainable course. Unfortunately, most of this information is not readily available through the mainstream media. This book, *Toward Sustainable Communities: Resources for Citizens and Their Governments*, has endeavored to make these ideas, tools and resources accessible. It offers practical suggestions and innovative solutions to a range of common community problems on energy efficiency, transportation, land use, housing, waste reduction, recycling, air quality and governance.

The book, which is divided into 3 parts and 15 chapters, applies a new framework based on the concept of 'community capital' to understand city development as a process of developing and managing natural, social and economic capital. It opens up new horizons for practice and offers readers a compendium of practical cases, models and tools to indicate the way. Part 1 explores the meaning of sustainable development and its implications for communities, explains comprehensively the concept of 'community capital' and develops a framework for sustainable community development. It concludes with a chapter on thinking strategically, which explores the use of policy instruments in sustainable community planning and development, and reviews the different types of instruments that are available to community decision-makers.

Part 2 is a set of sustainable community "building blocks". Each chapter provides an overview explaining the topic and its relevance to sustainable communities, followed by a set of "Tools and Initiatives" and "Resources." These building blocks are a set of planning tools, practical initiatives, and associated resources that have helped citizens and their governments move toward sustainable communities. In detail, this part underlines the tools and initiatives for greening the city; saving and maximizing the use of water; reducing and recycling solid waste; reducing the consumption of energy; reducing the atmospheric change and air pollution;

making transportation and traffic efficient; achieving sustainable land use; improving livability and fostering community connection and neighborliness; and implementing the concept of sustainable community economic development.

Part 3 focuses on mobilizing citizens and their governments toward sustainable communities. It discusses the aspects of governing sustainable communities by listing the ways to enhance the participation of the public (local community) and the roles of local government in the planning and development process. Tools for managing community sustainability from planning stage to assessment stage are also highlighted in this part. The final chapter shares some lessons for designing effective sustainable community development policies and explores the challenges ahead. In this chapter, the author states that the communities are coming to recognize their responsibility to develop sustainably. The author also highlights that the 'community capital' approach to sustainable community development requires some relatively new thinking about broad questions of community sustainability and self-reliance.

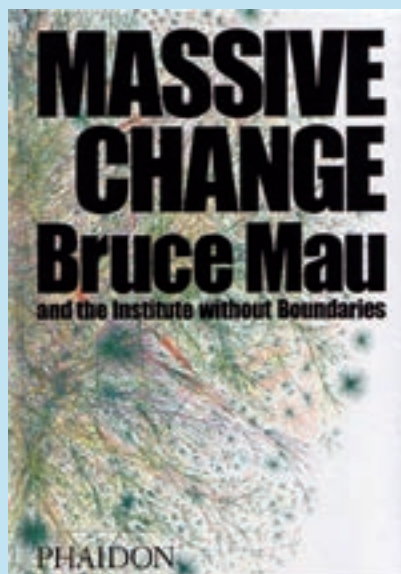
The book ends with addressing the key features, within the context of sustainable community, which should be recognized in formulating any sustainable development policy framework:

- Sustainable development requires sustainable communities;
- Rules can and must be changed;
- Sustainability can mean 'less' as well as 'more';
- Where the market works, use it;
- Where the market fails, don't be afraid to mandate changes;
- Polluters should pay for the costs of remediation, but it is even more important to prevent pollution and the waste of resources in the first place;
- Social equity is not only desirable but essential; and
- Public participation is itself a sustainable development strategy.

This book can be considered as a comprehensive resource on creating sustainable communities. Though this book focuses on situations, experience and development frameworks in North America, the arguments and examples as well as the policy, initiatives and solutions suggested are seen suitable to be applied everywhere including in Malaysia. This book is an absolutely essential read for private and government town planners, local authority managers and administrators as well as citizens in helping to inspire us to do more in the journey toward sustainable communities and a livable future.

BOOKS: Editor's Choice

DR. CHUA RHAN SEE
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MASSIVE CHANGE
Bruce Mau and the Institute Without Boundaries
Publisher: Phaidon Press Limited
Place of Publication: London
Year of Publication: 2004
Pages: 240
ISBN: 978-0714844015

This is a book that challenges conventional views and understanding on the concept of design. The book aims to educate on the difference between the 'world of design' and the 'design of the world', which is thought to be more important and critical, such as the design of system, movement, organization or organism. The book sets to find answers to a question posted at the beginning of the page that asked 'Now that we can do anything, what will we do?'

The authors suggest that focus should be given to exploring design economies, tapping into the global commons, distributing capacity, embracing paradox and reshaping the future.

The book contents are arranged into 11 chapters with the following topics:-

- Urban economy
- Movement economy
- Information economy
- Energy economy
- Image economy
- Market economy
- Materials economy
- Military economy
- Manufacturing economy
- Living economy
- Wealth and politics

Amongst the highlights are Chapter One on urban economies which discusses manufactured housing, density, sustainable architecture, the entrepreneurial Third World, redesigning property law and the notion that 'everywhere is city'; Chapter Two on movement economies that touches on personal freedom and global movement; and Chapter Three on energy economies that deals with clean green power, solar power, the worldwide grid and our energy challenge.

The book also contains interview excerpts of over 30 experts, who share their views on economy, science, transportation, energy, agriculture, health, technology, image and politics.

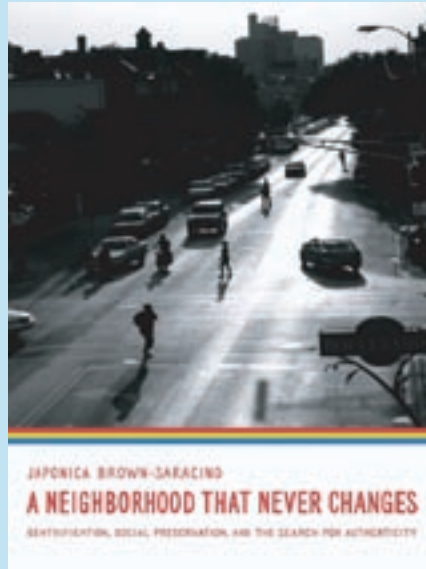
These experts include Jaime Lerner, the three-time mayor of Curitiba, Brazil, whose urban revolution put the city on the world map; Hernando de Soto, the President of the Institute of Liberty and Democracy, regarded by the *Economist* as the second most important think-tank in the world; Richard E. Smalley, the recipient of the 1996 Nobel Prize in Chemistry; Stewart Brand, the founder of the original *Whole Earth Catalog* and also Hazel Henderson, a futurist and international consultant on sustainable development, whose editorials appear in 27 languages in more than 400 newspapers.

This book is written in an easy-to-understand manner and illustrated by a wide range of vivid graphics and photos. Such arrangement makes the book easy to read and digest even though it covers a wide range of complex topics.

Bruce Mau is the principal of Bruce Mau Design, a world renowned design company based in Toronto, Canada. Together with him is the Institute without Boundaries, which is a privately initiated institute aimed at producing designers who are a 'synthesis of artist, inventor, mechanic, objective economist and evolutionary strategist'.

BOOKS: Editor's Choice

DR. AZMIZAM ABDUL RASHID
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A NEIGHBORHOOD THAT NEVER CHANGES: GENTRIFICATION, SOCIAL PRESERVATION, AND THE SEARCH FOR AUTHENTICITY

Author: Japonica Brown-Saracino

Publisher: University of Chicago Press

Place of Publication: Chicago, USA

Year of Publication: February 2010

Pages: 352

ISBN: 9780226076638

Over the past several decades, numerous books and articles have appeared on the topic of gentrification. *A Neighborhood That Never Changes*, however, breaks new ground by questioning the methods and assumptions of prior work in two important and refreshing ways. This book starts with the story of Mary, a Portuguese-American resident of Provincetown, Massachusetts who feels she is being forced out of her job, home and social network by a wave of urban regeneration. This book paints a colorful portrait of how residents, new and old, from wealthy people to Portuguese fishermen, think about gentrification. This book looks at four different neighborhoods, both urban and suburban, and argues for three types of gentrifiers: the pioneer, the social preservationist, and the social homesteader.

As page 99 reveals, the book primarily addresses the term *social preservationist* - gentrifiers who move to live near long-timers with whom they associate "authentic" community, and who work to preserve the local social ecology. For social preservationists, who like most gentrifiers tend to be affluent, a place's value is contingent on the presence of certain long-timers. Page 99 details preservationists' criticism of their own participation in gentrification and affluence - a central claim of the book. This self-criticism borrows from longstanding and widespread concern about the threat affluent people pose to "authentic" people and places as well as from heightened public awareness of gentrification's consequences. Beyond page 99 the book explores long-timers' reactions to social preservation and why preservationists work to preserve some - but not all - long-timers.

Based on the gentrifiers' accounts of their beliefs and behaviours, she reveals that many such individuals "deviate from the frontier and salvation ideology long held to be the sine qua non of gentrification" (p. 250). All of this is accomplished through a richly descriptive prose - "Gripping a cup of tea, Leslie fought tears as she described..." (p. 100) - that is the hallmark of good ethnography, yielding a text that is both insightful and engaging. Brown-Saracino distinguishes herself from other works on gentrification in several important ways, specifically her approach and analytical focus. Furthermore, urban and cultural sociology thrive on comparative approaches, and this beautiful book will serve as an example of this perspective for years to come. Newcomers to older neighborhoods are usually perceived as destructive, tearing down everything that made the place special and attractive.

In an era of rapid change, this book provides an absorbing study which reveals the unexpected ways beliefs about authenticity, place, and change play out in the social, political, and economic lives of very different neighborhoods. The last chapter of this book demonstrates how distinct ways of thinking about place and change play out in gentrifying neighborhoods and towns. It also offers a sophisticated reinvention of the classic community study by emphasizing how local residents interpret contemporary economic and political forces through the lens of culture and the imagination of authenticity. Brown-Saracino examined what the varied residents think about gentrification and in the process counters common stereotypes about the motivations of gentrifiers. This book challenges conventional wisdom which holds gentrification to be the simple outcome of new middle-class tastes and a demand for urban living.

PLANNING EVENTS

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Research and Development Division
Federal Department of
Town and Country Planning
Peninsular Malaysia

FEBRUARY 2011

1 5th Annual City Development

Date : **24 – 25 February 2011**
Venue : **New World Hotel Saigon, Ho Chi Minh City, Vietnam**
Organisers : **United Nations Economic and Social Commission for Asia and the Pacific (UN ESCAP)**
Websites : **<http://www.unescap.org/apuf-5/home.htm>**

2 Low Carbon Township Summit 2011

Date : **28 February – 1 March 2011**
Venue : **Corus Hotel, Kuala Lumpur**
Organisers : **Asian Strategy & Leadership Institute**
Websites : **<http://www.asli.com.my>**
Theme : **Creating Wealth That Is Worth Having**

MARCH 2011

3 Greater KL : Smart City of the Future Conference

Date : **7 March 2011**
Venue : **Prince Hotel and Residence, Kuala Lumpur**
Organisers : **Asian Strategy & Leadership Institute**
Websites : **<http://www.asli.com.my>**
Theme : **Smart City of the Future Conference**

JUNE 2011

4 The Fifth Asia Pacific Urban Forum (APUF-5)

Date : **20 – 25 June 2011**
Venue : **Bangkok, Thailand**
Organisers : **United Nations Economic and Social Commission for Asia and the Pacific (UN ESCAP)**
Websites : **<http://www.unescap.org/apuf-5/home.htm>**

JULY 2011

5 2011 Asia Pacific City Summit

Date : **6 – 8 July 2011**
Venue : **Brisbane, Australia**
Organisers : **Brisbane City Council, Australia**
Websites : **<http://www.apcsummit.org/>**
Theme : **The Business of Cities**

6 Fifth International Conference on Sustainable Development and Planning 2011

Date : **12 – 14 July 2011**
Venue : **New Forest, United Kingdom**
Organisers : **Wessex Institute of Technology, UK**
Websites : **<http://www.wessex.ac.uk/11-conferences/sdp-2011.html>**

AUGUST 2011

7 Ecocity World Summit 2011

Date : **22 – 26 August 2011**
 Venue : **Palais des congrès de Montréal, Canada**
 Organisers : **Opus Inc.**
 Websites : **http://www.ecocity2011.com/accueil/default_e.asp**
 Theme : **People. Ecology. Urbanity. Moving Towards Ecocities**

8 Sustainable Energy Forum 2011

Date : **25 August 2011**
 Venue : **The Royale Chulan, Kuala Lumpur**
 Organisers : **Asian Strategy & Leadership Institute**
 Websites : **<http://www.asli.com.my>**
 Theme : **Harnessing the Fifth Fuel for Sustainable Energy Growth**

SEPTEMBER 2011

9 The 4th International Urban Design Conference 2011

Date : **21 – 23 Sept 2011**
 Venue : **Marriot Resort and Spa, Gold Coast, Queensland**
 Organisers : **Gold Coast City Council**
 Websites : **<http://www.urbandesignaustralia.com.au/>**
 Theme : **Resilience in Urban Design**

10 National Conference On Urban Development & Transformation

Date : **29 September 2011**
 Venue : **Melaka International Trade Centre, Melaka**
 Organisers : **Institut Sultan Iskandar of Urban Habitat and Highrise, UTM & Melaka State Government**
 Websites : **<http://www.utm.my/institute-sultan-iskandar/seminar/147-melaka.html>**
 Theme : **Towards Municipalities Reforms & Sustainable Management**

11 ISKANDAR MALAYSIA –SINGAPORE 2011

Date : **28 – 29 September 2011**
 Venue : **Pulai Spring Resort, Johor Bahru, Johor**
 Organisers : **Malaysian Institute of Planners, Iskandar Malaysia and Singapore Institute of Planners**
 Websites : **<http://www.mip.org.my/>**
 Theme : **Integration and Development Potentials**

OCTOBER 2011

12 Asian Conference On Real Estate (ACRE 2011)

Date : **3 – 5 October 2011**
 Venue : **Thistle Hotel, Johor Bahru, Johor**
 Organisers : **Faculty of Technology Management and Business, UTHM**
 Websites : **<http://acre2011.uthm.edu.my/>**
 Theme : **Sustainable Growth : Managing Challenges**

13 Green Solutions For Property Development 2011

Date : **4 October 2011**
 Venue : **SIME DARBY Convention Centre (SDCC), Kuala Lumpur**
 Organisers : **REHDA Institute & EAROPH Malaysia**
 Websites : **<http://acre2011.uthm.edu.my/>**
 Theme : **Sustainable Growth : Managing Challenges**

14 47th ISOCARP Congress

Date : **24 – 28 October 2011**
 Venue : **Wuhan, China**
 Organisers : **The People's Government of Wuhan Municipality**
 Websites : **<http://www.isocarp.org/subsites/isocarp-congress-2011/home/>**
 Theme : **Liveable Cities : Urbanising World Meeting The Challenge**

15 Seminar Kebangsaan Konsep Smart Growth

Date : **27 October 2011**
 Venue : **Hotel Impiana, Ipoh, Perak**
 Organisers : **Jabatan Perancangan Bandar dan Desa Negeri Perak**
 Websites : **<http://202.188.163.169/webv3/index.php/ms/news/3/205>**
 Theme : **Smart Growth for Liveable Cities**

NOVEMBER 2011

16 44th EAROPH Regional Planning Conference 2011

Date : **8 – 10 November 2011**
 Venue : **Brunei Darussalam**
 Organisers : **Ministry of Development, Brunei Darussalam**
 Websites : **<http://www.tcp.gov.bn/EAROPH2011/welcome.htm>**
 Theme : **Managing Urban Growth : Challenges for Small Cities**

THE VIEW OF TERENGGANU RIVER, IN THE LATE 1970S AND TODAY, WITH THE BACKDROP OF DATARAN SHAHBANDAR (SHAHBANDAR SQUARE), BUKIT PUTERI AND PASAR BESAR KEDAI PAYANG (CENTRAL MARKET).

Source: Arkib Negara Malaysia 2007/0039225

THOUGH THE BLUE AND THE FACADE OF ITS BACKGROUND HAS CHANGED, THE IMAGE AND ITS DAILY ROLE AS A SOURCE OF LIVELIHOOD FOR FISHERMEN; A MODE TO CONNECT PEOPLE FROM SURROUNDING SETTLEMENTS; A PLACE FOR LEISURE AND TO RELAX DURING THE EVENING; AND A PLACE TO BREATHE FRESH AIR IN THE MORNING, REMAINS UNCHANGED. IT IS THE LIFEBLOOD OF KUALA TERENGGANU. THE SPLENDOUR OF THE PANORAMA AND AESTHETICS OF THIS RIVER AND ITS WATERFRONT HAS BECOME A PART OF THE URBAN IDENTITY OF KUALA TERENGGANU, WHICH IS NOW KNOWN AS 'HERITAGE WATERFRONT CITY'. TODAY (SINCE 2005), THE TERENGGANU RIVER IS RECOGNISED INTERNATIONALLY AS THE VENUE FOR MONSOON CUP, ONE OF THE WORLD'S PRESTIGIOUS YACHT SAILING CHAMPIONSHIPS.





ISBN 978-983-2839-22-4



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