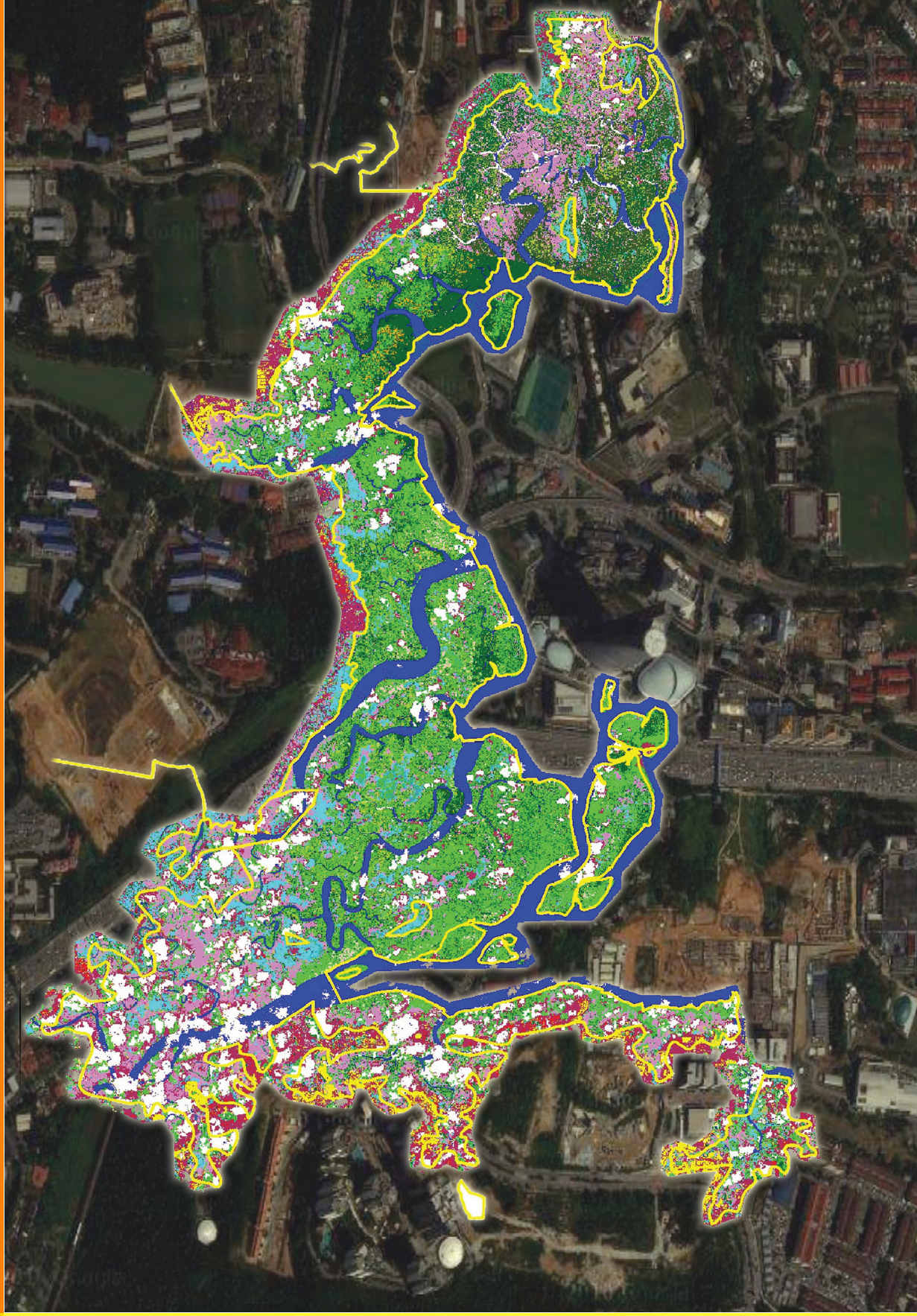
BULETIN GIS



JAWATANKUASA PEMETAAN DAN DATA SPATIAL NEGARA

BIL 1/2011

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Jemaah Menteri berasaskan Kertas Kabinet No.243/385/65 bertajuk *National Mapping Malaysia* telah meluluskan jawatan dan terma-terma rujukan *"Surveyor-General Malaya and Singapore"* sebagai Pengarah Pemetaan Negara Malaysia dan mengesahkan keanggotaan serta terma-terma rujukan Jawatankuasa Pemetaan Negara pada 31 Mac 1965.

Cabutan para-para 2(b), 2(c) dan 2(d) daripada kertas kabinet tersebut mengenai keanggotaan dan terma-terma rujukannya adalah seperti berikut:

"2(b) National Mapping Committee

That a National Mapping Committee be appointed to comprise the following:

i. Director of National Mapping
ii. Director of Lands & Surveys, Sabah;
iii. Director of Lands & Surveys Sarawak;
iv. Representative of the Ministry of Defence;
v. Representative of the Ministry of Rural Development (now substituted by the Ministry of Natural Resources and Environment);
vi. Assistant Director of Survey, FARELF

2(c) The terms of reference of the National Mapping Committee to be as follows:

i. to advise the Director of National Mapping on matters relating to mapping policy;
ii. to advise the Director of National Mapping on mapping priorities.

2(d) That the Committee be empowered to appoint a Secretary and to co-opt persons who would be required to assist the Committee,"

Seterusnya pada 22 Januari 1997, Jemaah Menteri telah meluluskan pindaan terhadap nama, keanggotaan dan bidang-bidang rujukan Jawatankuasa Pemetaan Negara kepada Jawatankuasa Pemetaan dan Data Spatial Negara (JPDSN), bagi mencerminkan peranannya yang diperluaskan ke bidang data pemetaan berdigit. Keanggotaan JPDSN pada masa kini adalah terdiri daripada agensi-agensi seperti berikut:

1. Jabatan Ukur dan Pemetaan Malaysia
2. Jabatan Tanah dan Ukur Sabah
3. Jabatan Tanah dan Survei Sarawak
4. Wakil Kementerian Pertahanan
5. Jabatan Mineral dan Geosains Malaysia
6. Jabatan Perhutanan Semenanjung Malaysia
7. Jabatan Pertanian Semenanjung Malaysia
8. Jabatan Perhutanan Sabah
9. Pusat Infrastruktur Data Geospatial Negara (MaCGDI) *(co-opted)*
10. Jabatan Pertanian Sabah
11. Jabatan Pertanian Sarawak
12. Pusat Remote Sensing Negara (MACRES)
13. Universiti Teknologi Malaysia
14. Universiti Teknologi MARA *(co-opted)*
15. Universiti Sains Malaysia *(co-opted)*
16. Jabatan Laut Sarawak *(co-opted)*
17. Jabatan Perhutanan Sarawak
18. Jabatan Perancangan Bandar dan Desa

Buletin GIS ini yang diterbitkan dua kali setahun adalah merupakan salah satu aktiviti oleh Jawatankuasa Pemetaan dan Data Spatial Negara, sebagai salah satu media pendidikan dan penyebaran maklumat dalam mendidik masyarakat memanfaatkan maklumat spatial dalam pembangunan negara. Walau bagaimanapun, sebarang kandungan artikel-artikel adalah tanggungjawab penulis sepenuhnya dan bukan melambangkan pandangan penerbit.

Kandungan

Laporan Bergambar:

Pencetak
Jabatan Ukur dan Pemetaan Malaysia,
Jalan Semarak,
50578 Kuala Lumpur

DARI MEJA KETUA EDITOR

Nama geografi merupakan bahasa pengantara dan komunikasi yang digunakan dalam peta dan carta bagi menunjukkan nama entiti geografi yang terdapat di dalamnya. Nama geografi disebut atau ditulis dalam bahasa yang boleh difahami oleh masyarakat setempat dalam merujuk kepada sesuatu lokasi, entiti atau kawasan sama ada di atas dan di bawah permukaan bumi termasuk lautan. Hakikatnya manusia menggunakan nama geografi ini setiap hari sepanjang hidup mereka.

Pada tahun 1959, *Economic and Social Council, United Nations* telah memberi peluang kepada sekumpulan pakar untuk bertemu dan memberi cadangan teknikal mengenai standardisasi nama geografi di peringkat kebangsaan dan antarabangsa. Berikutan cadangan itu, *United Nations Conference on the Standardisation of Geographical Names* atau ringkasnya *UNCSGN* dan *United Nations Group of Experts on Geographical Names* atau ringkasnya *UNGEGN* telah ditubuhkan oleh Pertubuhan Bangsa-bangsa Bersatu. Dalam hubungan ini, Malaysia merupakan ahli tetap *UNGEGN*.

Pada tarikh 11 September 2002, Kerajaan Malaysia telah meluluskan penubuhan Jawatankuasa Kebangsaan Nama Geografi atau ringkasnya JKNG yang dipengerusikan oleh Ketua Pengarah Ukur dan Pemetaan Malaysia. Salah satu usaha JKNG, adalah menyiapkan dokumen Garis Panduan Penentuan Nama Geografi yang kemudiannya dijadikan *Malaysian Standard* iaitu MS 2256: *Geographic Information – Guidelines for the Determination of Geographical Names* untuk diguna pakai oleh semua agensi kerajaan.

Selain itu, JKNG turut bertanggungjawab untuk membangunkan pangkalan data nama geografi dan gazetir kebangsaan. Pangkalan Data Nama Geografi merupakan bank data yang mengandungi nama-nama geografi, lokasi, sejarah dan notifikasi gazetir yang sah untuk kegunaan agensi kerajaan dan pengguna awam. Di samping itu, JKNG juga berperanan mengenal pasti pulau-pulau serta entiti geografi dan seterusnya membuat cadangan penamaan ke atas nama pulau-pulau serta entiti geografi tidak bernama yang berada di perairan Malaysia. Setakat ini terdapat sebanyak 1,388 buah pulau serta entiti geografi di luar pesisir pantai negara telah dikenal pasti. Maklumat pulau-pulau dan entiti geografi ini telah didokumenkan tetapi perlu mendapatkan pengesahan dari kerajaan negeri tentang nama dan identitinya.

Standardisasi nama geografi dalam bentuk bertulis serta aplikasinya di peringkat kebangsaan adalah penting kepada pentadbir dan saintis yang memerlukan rujukan geografi yang jelas dan tepat. Program standardisasi kebangsaan boleh menggelakkan konflik dan menghapuskan kerja berganda oleh agensi kerajaan yang berlainan, yang akhirnya akan menyebabkan penghasilan nama geografi yang berbeza bagi sesuatu tempat. Ia membantu Malaysia menghasilkan nama geografi yang diterima secara rasmi. Selain itu, ia dapat menyumbang kepada usaha untuk melindungi nilai-nilai negara yang tercatat dalam sejarah, budaya dan menjadi sebahagian warisan negara.

INTEGRATED GEOSPATIAL TECHNIQUES IN MANGROVE FOREST INVENTORY: CASE STUDY IN KUALA BONGGAYA AND KUALA LABUK MANGROVE FOREST RESERVE

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Abstract

This paper highlights the application of integrating geospatial techniques in mangrove forest inventory of Kuala Bonggaya and Kuala Labuk (KBKL) Mangrove Forest Reserve (56, 507 ha) in Sabah. This inventory was crucial in order to produce guidelines and support for the preparation of a mangrove forest management plan. Remote Sensing techniques using supervised classification were used in mapping mangrove vegetation classes based on 2 sub scenes of SPOT5 (301/337 and 301/338) acquired in June 2007. Using GIS techniques, this vegetation data was then used in the mapping and selection of sampling plots. The location of sampling plots was uploaded to a GPS cum mobile GIS. The mangrove inventory was carried out using two stages sampling with sampling intensity of 0.24%. Field sampling of 275 main plots and 1375 secondary plots was carried out between May 2009 and November 2009. The field data was then linked and mapped using GIS techniques. The inventory result found that the mangrove forest of KBKL comprised of 21 species and the stand volume per hectare varies from stratum to stratum from 7.91 cubic metres per hectare to 238.04 cubic metres per hectare. Stand volume per hectare for Rhizophora apiculata and Rhizophora mucronata ranges between 0 to 25.08 cubic metres per hectare and 0 to 27.13 cubic metres per hectare respectively. The high stand volume occurred in Bakau/Bangkita and Mixed mangrove species strata. The integration of geospatial technologies in mangrove forest inventory in Kuala Bonggaya and Kuala Labuk Mangrove Forest Reserve have been found to be highly effective in determining mangrove resources in Sabah.

Introduction

The first mangrove inventory in Sabah was conducted back in 1969-1970 (FORESTAL 1973). Due to the changing vegetation landscape in Sabah including mangroves for the last three decades, the information gathered from the first inventory is considered inadequate for the sustainable management and conservation of mangroves. Therefore, the second inventory of mangroves in Sabah was initiated under the auspices of the ninth Malaysian plan project namely: Sustainable Management and Conservation of Mangrove Ecosystem in Sabah. This inventory was crucial in order to produce guidelines and support for the preparation of a mangrove forest management plan (MFMP) of Beluran Mangrove Forest Management Plan. The aim of the mangrove inventory in KBKL is to determine the mangrove resources by an estimation of species composition, sizes, height and quality of mangrove stands according to assigned stratum and vegetation.

To date, the total area of mangrove forest reserves in Sabah is **326,487.12** ha. However this does not reflect the current status of standing growing stock for mangrove forests. Phillips (1984) reported that mangrove forests, inclusive of beach forests, *Nypa* and transitional forests, were **364,717** ha, about 4.9% of the total land area of Sabah. Based on Liew (1977), the mangrove forest areas can generally be divided into two categories, the true mangrove species and transitional mangrove species, whereby the family *Rhizophoraceae* dominates the mangrove forest in between 75% to 85% of the total forest area. The genera, *Rhizophora apiculata, R. mucronata,* and *Ceriops tagal* were the most abundant species recorded in the study (Liew, 1977). Other species, namely *Lumnitzera littorea (Combretaceae), Xylocarpus granatum (Meliaceae), Scyphiphora hydrophyllacae* (Rubiaceae) were also noted significantly contributing to the total number of the general population. Phillips (1984) had estimated the harvestable tree volume per hectare in the east coast of Sabah (Sandakan district) as follows: the species *Rhizophora mucronata* and *R. apiculata* contributed the most timber volume consuming 25-39% (20.8-26.2m^3/ha) and 28-34% (22.9-22.4m^3/ha) respectively. The results obtained are summarized in **Table 1**.

Table 1: Average Potential Production of Harvestable Mangrove Wood per Hectare

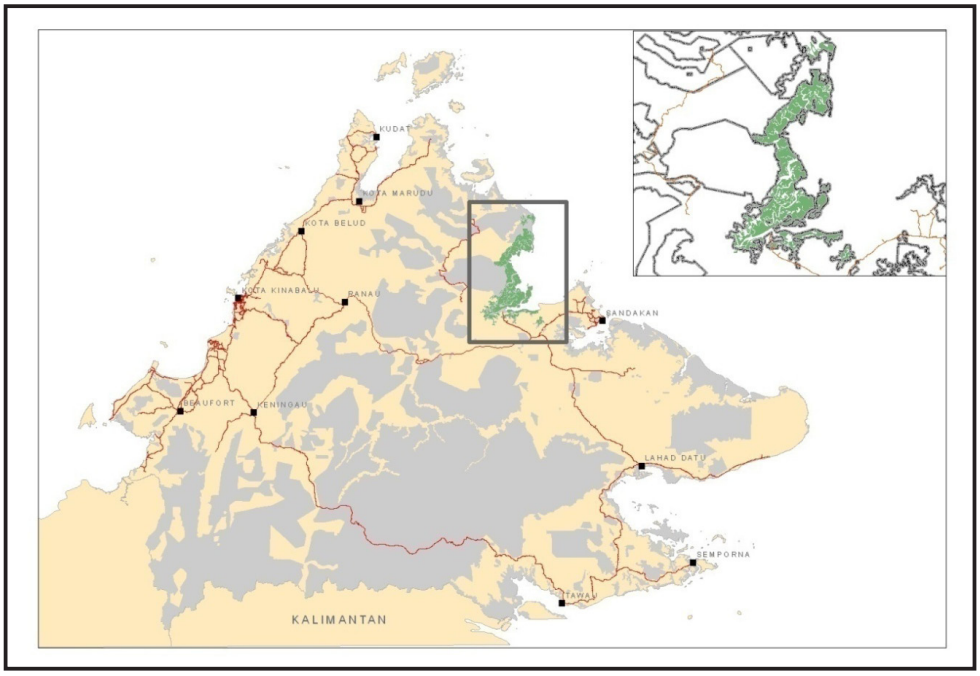
Species	Forest reserve	% of total	Stateland	% of total
Rhizophora mucronata	26.2	39.2	20.8	25.4
R. apiculata	22.4	33.6	22.9	27.9
Bruguiera spp.	1.4	2.0	3.3	4.0
Ceriops tagal	5.4	8.1	5.9	7.2
Avicennia spp.	1.1	1.6	5.6	6.8
Sonneratia spp.	0.2	0.2	5.6	6.8
Excoecaria agallocha	1.2	1.7	2.8	3.4
Lumnitzera spp.	1.6	2.4	6.3	7.5
Other species	7.4	11.2	9.1	11.0
Total	66.9	100%	82.2	100%

Source: Phillips, 1984.

Study Area

The Kuala Bonggaya and Kuala Labuk Forest Reserve (KBKL FR) covers an area of 56,507 ha and an estimated total perimeter of 1375.10 km. It is one of the largest contiguous areas of mangrove forests in Malaysia. It is located in the north eastern part of Sabah which is geographically situated between 117^O 25' - 117^O 45' and 5^O 50' - 6^O 22' 30" as shown in **Figure 1**. KBKL FR is situated within the Beluran Forestry District and Sandakan Forestry District. KBKL is adjacent to Sungai Sugut, Sungai Paitan & Jembongan Forest Reserve (Class V) and Sugut Forest Reserve (Class II) on the northern part, Bonggaya Forest Reserve (Class II) on the western part and Kuala Labuk at the southern part.

Figure 1: Location of Kuala Bonggaya and Kuala Labuk Forest Reserve



Based on vegetation type classification for tidal forest inventory, according to Liew (1980), which is derived from species composition, average maximum stand height and crown or canopy density, the vegetation type of KBKL FR can be classified into 10 classes as listed in **Table 2**.

Table 2: Vegetation Classification in Sabah According to Liew (1980).

No	Vegetation classification
T1	Nipah (pure stand of Nypa fruticans)
T2	Bakau/Bangkita (Rhizophora mucronata, Rhizophora apiculata)
T3	Buta-Buta (Excoecaria agallocha)
T4	Beus (Bruguiera cylindrica, B. parviflora, B. sexangula, B. gymnorrhiza)
T5	Tengar (Ceriops tagal, Ceriops decandra)
T6	Api-Api/Perepat (Avicennia spp, Sonneratia spp)
T7	Nipah mixed
T8	Other mixed species of mangrove plants
T9	Non-commercial mangrove plants
T10	Logged over/ open areas

Method

A supervised classification of 2 sub scenes 2.5 m SPOT 5 data acquired in 2007 was used to map the vegetation classes of KBKL FR based on vegetation classes as listed in **Table 2**. Vegetation classes were verified using GIS data of 1970's forest inventory and aerial surveys. As tabulated in **Table 3**, the most extensive occurrence is Nipah mixed with other forests with an area covering approximately 21,508.68 hectares which is classified under T7 followed by Mixed Mangrove Species forest, Nipah palm forest, Bakau/Bangkita forest, Api Api & Perapat forest and non-commercial size vegetation forest. The smaller occurrences are Tengar, Logged-Over, Buta Buta and Beus with areas covering 953.18 ha, 362.37 ha, 300.13 ha and 262.40 ha respectively. Meanwhile, grass land area covers about 343.46 hectares **(Table 3)**.

Table 3: Vegetation Classes by Area based on SPOT 5 2007 data.

CODE	VEGETATION CLASS	AREA (Ha)
T1	Nipah palm	9,426.90
T2	Bakau/Bangkita	3,749.42
T3	Buta Buta	300.13
T4	Beus	262.40
T5	Tengar	953.18
T6	Api Api & Perepat	2,123.67
T7	Nipah mixed with others	21,508.68
T8	Mixed Mangrove Species	16,247.74
T9	Non commercial size	1,229.04
T10	Logged-over	362.37
	Grass Land	343.46
	TOTAL	**56,506.99**

Figure 2: Vegetation classes of KBKL FR based on SPOT 5 2007 data.

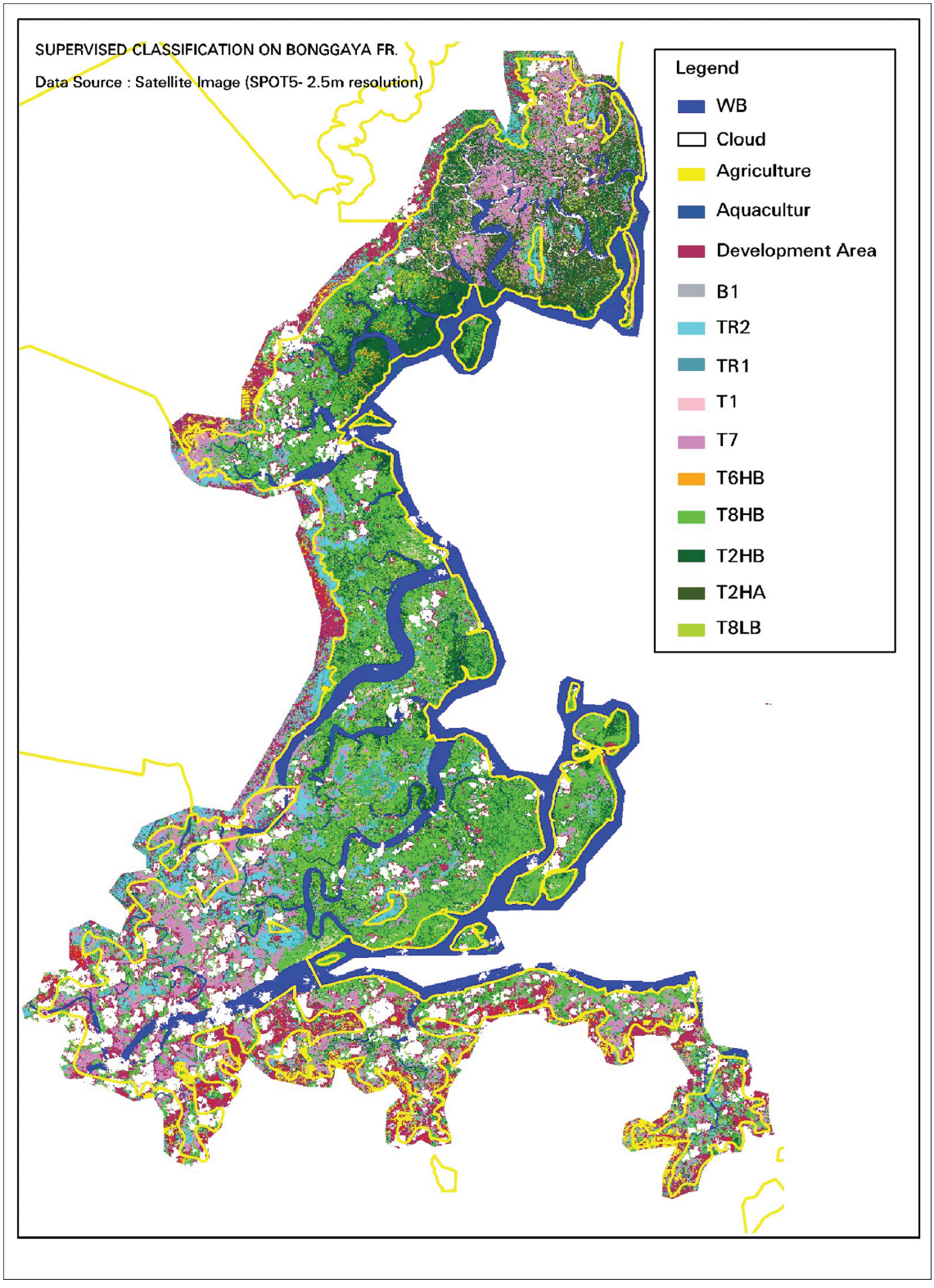
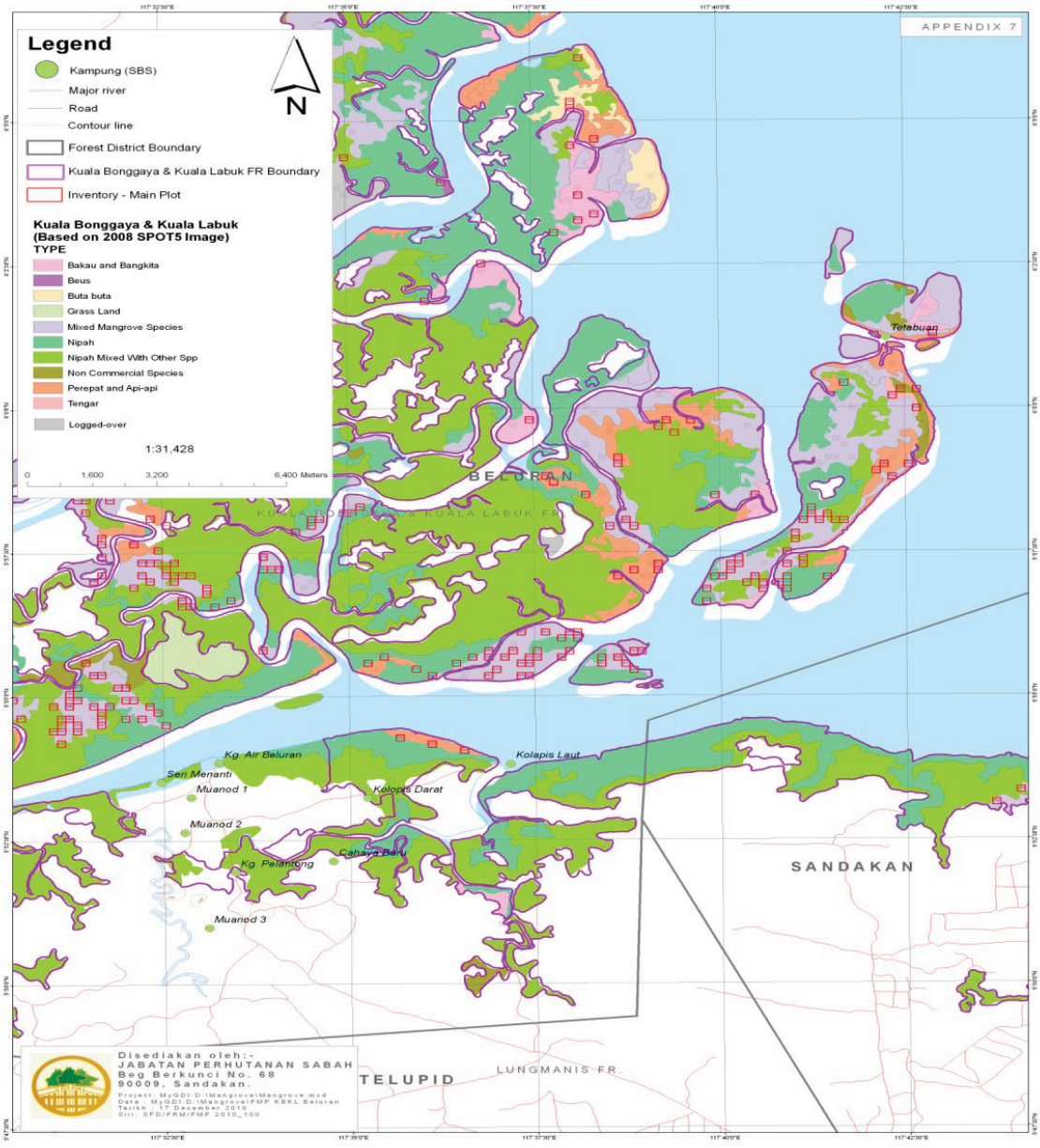


Figure 3: Location of sampling plots



The mangrove inventory was carried out using two phase sampling, or referred to as double sampling, in which the first phase primary plots of 200 m x 200 m (4 hectares plot) was selected randomly based on mangrove forest strata as shown in **Figure 2**. Random sampling was done using MS Excel Data Analysis Tools where sampling intensity obtained is given in **Table 4**.

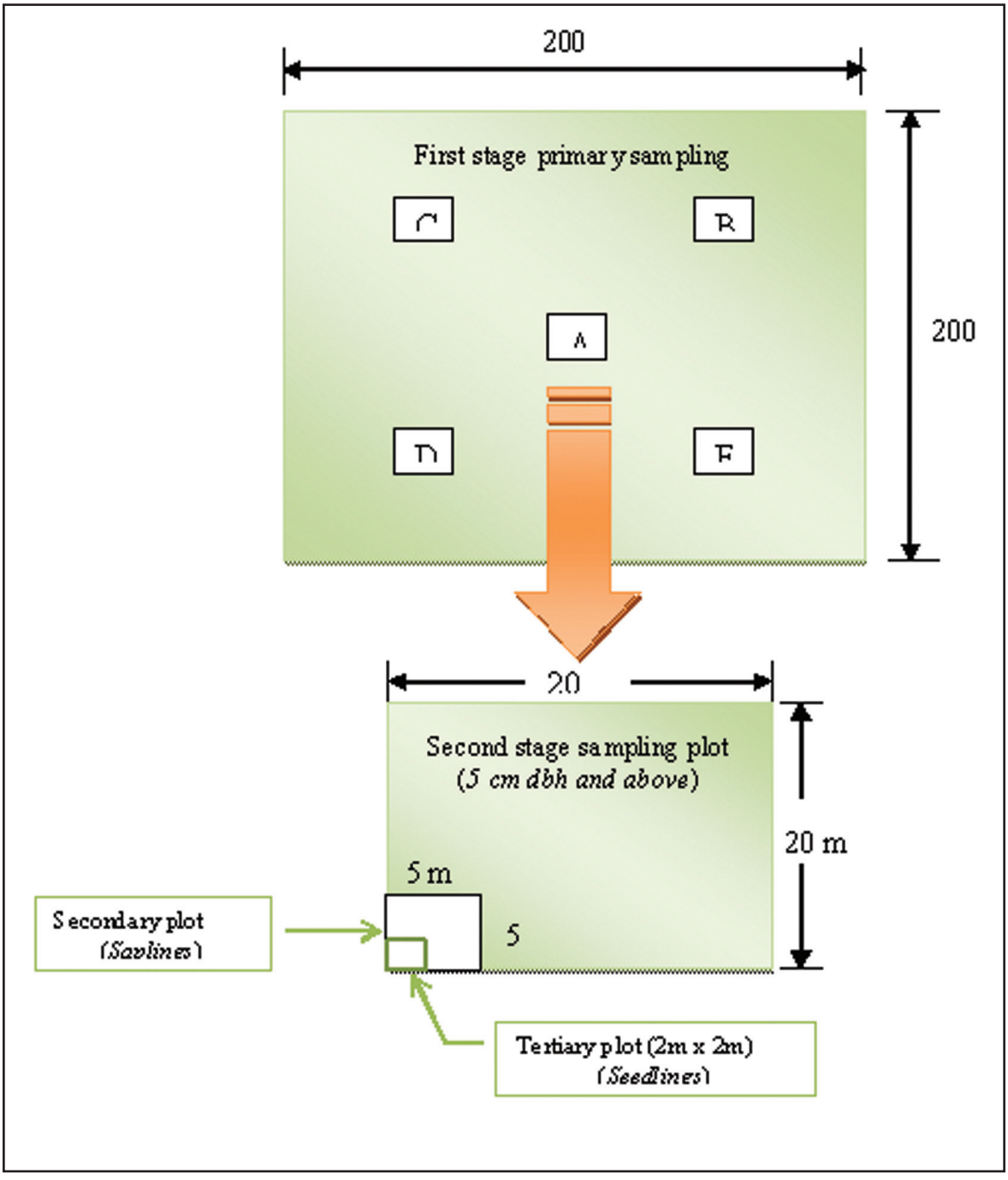
Table 4: No. of Sampling Plots by Vegetation Types.

VEGETATION TYPE	NO. OF SAMPLING PLOTS	
	1st STAGE SAMPLING (200m x 200m)	2nd STAGE SAMPLING (20m x 20m)
Bakau/Bangkita	42	210
Beus	3	15
Buta Buta	2	10
Logged over	4	20
Mixed Mangrove Species	179	895
Perepat & Api Api	31	155
Tengar	14	70
TOTAL	**275**	1375

Sampling intensity, I = 1370 plot*0.04 ha per plot/22,709.44 ha*100%
= 0.24 %

In the second phase, 5 sub samples plots of 20 m x 20 m were taken systematically from the previous sample and on these sampling units, measurements were taken of the principle variables **(Figure 4)**. The secondary plot of 5 m x 5 m and tertiary plot of 2 m x 2 m is only carried out in Main Plot A as illustrated in Figure 4. The location of the sampling plots and vegetation classes were uploaded to a GPS cum mobile GIS using ArcPad software for the inventory field work. The inventory data was analysed and then linked to the GIS for further analysis and mapping.

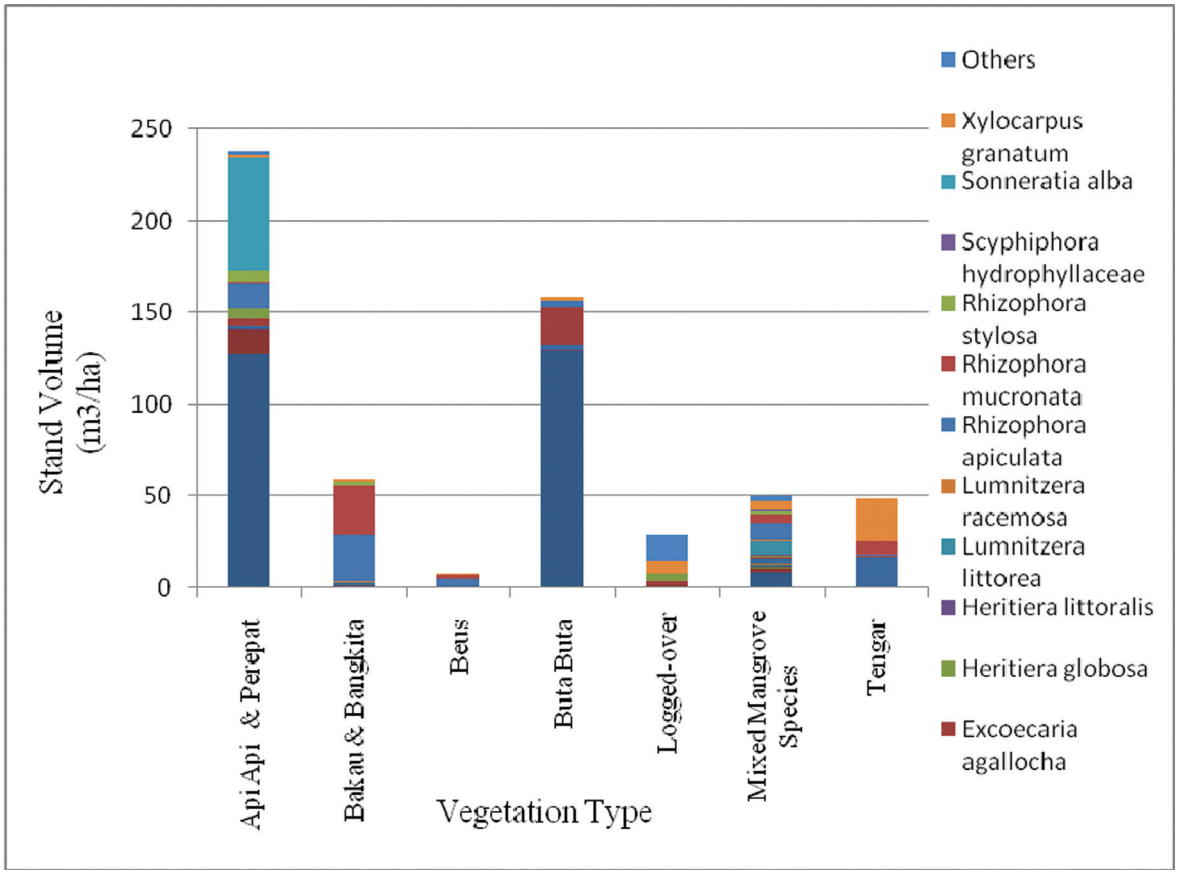
Figure 4: Inventory Plot Design



Results

The integration of geospatial technologies have been found to be highly effective management tools in determining the mangrove resources in Sabah. The inventory data was used in the preparation of a mangrove forest management plan (MFMP) for the proposed Beluran Mangrove Forest Management Project Area. From the inventory, the mangrove forest of KBKL is comprised of 21 species. Results of the inventory also showed that stand volume per hectare varies from stratum to stratum, from 7.91 cubic metres per hectare to 238.04 cubic metres per hectare **(Table 5)**. For the 2 species of interest, *Rhizophora apiculata* and *Rhizophora mucronata*, their stand volume per hectare ranges between 0 to 25.08 cubic metres per hectare and 0 to 27.13 cubic metres per hectare respectively.

Figure 5: Timber Stand Volume by Vegetation Type and Species.



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STUDY AND PREPARATION OF THE RISK AND CRISIS MANAGEMENT PLAN AIDED BY GIS TECHNIQUES NEISHABOUR IRAN

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Abstract

Iran is located in one of the most susceptible seismic belts in the world. Neishabour is one of the cities which fall within a seismic region in Iran. Previous earthquakes in the history of this city have created very heavy damages. Acquiring scientific knowledge and applying methods towards emphasizing management strategy seems to be the only logical way to mitigate human and property loss. A new branch of management, titled "crisis management", has evolved due to this phenomenon which concentrates on the studies of susceptibility, preparedness and the means by which human will be able to face and reduce the effects of natural disasters. This paper presents a sample of the kind of management study and design for Neishabour city. In addition to applying the Geography Information System (GIS) and the effective factors in risk evaluation, the zone planning of the city has been provided. While identifying the risk ratio for each section, evaluation of the existing crisis potential and life and property mitigation procedures have been studied. Finally, by establishing a "Specialized Database Crisis Management" for the city; the necessary information have been gathered, processed, organized and saved in GIS environment for proper crisis management.

Key words: *Mitigation, Crisis Management, Susceptibility, Geography Information System (GIS)*

Introduction

Urban growth and population density are factors to study the risk. In addition to this, we have irregular growth pattern in the city with lack of proper facilitation can been seen. This is a significant issue in Iran; where the non engineered structures without observance of building regulation are exist. The vast expansion of cities along the faults and flooding zones in the past has increased potentials of risk. The city of Neishabour is susceptible to earthquake [1, 2], close to Binalood fault with the characteristics shown in **Table 1**.

Table 1: Binalood fault characteristics

Direction	Length	Position	Type
NW towards SE	Approx. 92Km	Outskirt of Binalood mountains	NE gradient – thrust

This major fault passes through East of Neishabour. Due to the lack of knowledge about location finding or positioning of the domain for the city, it happened that our subject city is built close to the above mentioned fault [3, 4]. The proper set up of a disaster management requires a comprehensive information system with the following layers:

- Decision making ability
- Analysis and respond
- GIS with the ability of rapid analysis that provide for modeling.

When a disaster occurs, many activities such as sheltering, medical care, rescue routing etc. are immediately applied in order to reduce the caused damages. Of course, here the people's awareness is a major factor for the outcome. All of these will not be possible if the related information is not available in the disaster management center for quick access. This data should be organized. Here, GIS focuses on showing the actual happenings which provide live information for better action. This system allows for all organizations to integrate their data regarding risk and extract preventive plans. At this time the only enforced procedure in Neishabour regarding probable risk mitigation is reinforcement and rehabilitation of the buildings. It is obvious that this factor alone cannot satisfy the broad aspect of vulnerability. Against earthquake, many other factors should be considered and worked upon from architecture to land use, planning and processing.

This paper considers non-physical aspects of the city as well that is its spirit [10]. The concept of a city cannot be limited to its physical status; therefore, securing it against earthquake by rehabilitating its buildings and structures cannot be the sole attempt. Hence, based on the results of seismic studies on risky regions, the expansion of the city should be eliminated.

Methodology

This research will apply the functionality of GIS system and its analytical subordinates. After obtaining the necessary layers of location identification, they have been introduced to GIS environment through establishing an earth database for each layer. In the next step, different parameters such as active field, communicational channels, water, gas and power, building texture status, risky application (gas station and fuel centers) and military and police buildings are prepared and further converted to GIS format. **Table 2** shows the criteria of risky frontage designation in order to provide safe and secure stations for rescue and relief operations.

Table 2: Indicating criteria of the dangerous frontage in order to provide for the security of main rescue and relief stations

Source	Frontage	Information layer	elements
Tehran organization project	300~700 m	Fault	Natural dangers
Since the flood planes are planned their frontage has not been accounted for	15m	Flood plain	
In accordance with the approval urban frontage	50m	High pressure power facilities	Man made danger sources
Relating to explosion danger in case an accident occurs	300m	Gas facilities	
-	-	Water sources	
2002 census information of sites	-	Risky operations	
	Within the study boundaries (the fourteen region) is not outstanding	Production operations	
	300m	Fuel storage and sales	
	Within the study boundaries (the fourteen region) is not outstanding	Chemical and flammable material storages	

A sample of three maps such as the risky frontage of fuel stations, high voltage cable lines and rivers are presented in Figures 1, 2 and 3. For initial overlapping analysis, the format of the layers are changed from vector to raster and standardized according to phase-rational. The basic method for zoning is using multi criteria Analytical Hierarchical Process (AHP). At first, the evaluation matrix is formed and desired layers are applied. By using AHP standard weights, the relation to the importance of each factors in seismic zoning are extracted. Each parameter has been weighted / ranked base on the standard building characteristics [6]. Finally, after producing the GIS map of the city, we begin the studies on disaster management based on the existing situation and managerial potentials and comparing them against modeling to determine the safe regions for rescue and relief.

Figure 1: The frontage of fuel stations in the city of Neishabour

Figure 2: The frontage of high voltage cable lines in the city of Neishabour

Figure 3: The frontage of rivers in the city of Neishabour

Using GIS and AHP in positioning

One of the assessment and weighting methods is AHP, which was introduced by Saaty [8] in 1977. It is one of the best techniques for weighting in order to solve complex multi criterion problems, with powerful and flexible tools for qualitative and quantitative assessment based on double – double information layers comparison [5]. In order to calculate the weight factors with AHP, the eigenvalue and eigenvector are calculated by square matrix and the priority of criteria which includes the quantification of prioritized added value of a factor against another factor. The combination of AHP and GIS provide for a very powerful tool for analytical discussion and evaluation of the criterion dining the modeling process that includes the following steps:

1. producing the double comparison matrix
2. calculating the criterion weights
3. ratio approximation

The steps have been followed for specific application and the outcome is used in GIS environment by determining the proper and non proper specific application to produce the find maps for positioning.

Compiling and preparing the data

After extracting and editing the factors from the available digital maps, printed documents, field studies, statistics and different reports and necessary information in addition to the defined topologic relations, all data have been entered in the ArcGIS software. The essential maps are

converted into vector- ready and the raster format. The adaptation matrix of all of the information layers are graded in the following five categories:

1. Adaptable
2. Almost adaptable
3. Neutral
4. Almost inadaptable
5. Inadaptable

Determining the adaptability matrix and prioritized weight

During the determination of components adaptability matrix, the main diameter of matrix equals 1 and the components that constitute the lower triangle of the matrix are in contrast with the ones on top. That means (aij=1/aji), where, aij consists of the factor A priority ration over factor B [7]. After determining the priority matrix and double – double relation; then with the aid of ArcGIS software matrixes up to 5*5 could be calculated. Later by using the MATLAB7 software the eigenvector and eigenvalue of the above matrix have been extracted and it has the largest special value of number 7.

Analytical Hierarchical Process

Four levels have been attempted for the structure of AHP in this research as follows:

1. Objective: the positioning of settlement is temporary.
2. Criteria: accessibility, open space, earthquake danger, incompatible applications, distance from incompatible applications.
3. Sub criteria of level 1 consist of: gradient, height above mean sea level, accessibility to sub structures, road accessibility, accessibility to facilities, the size of the plot, its position in regards to the fault, fuel stations, urban gas sub stations, recycling center, power sub stations.
4. Sub criteria of level 2 consist of: water, power, gas, medical centers, fire stations, urban services centers, main infrastructures.

Clarification of the importance of criteria and sub criteria coefficient

In order to construct a positioning model for temporary settlement camps, the following information from stored data is extracted:

- open space, arid and prolific.
- the accessibility to sub structures, water, power, gas and roads.
- the danger of the earthquake.
- the accessibility to medical centers, fire stations, urban services, the position of the camping area in relation to the fault, incompatible uses, gas stations, high voltage power stations, waste depot.
- topographical gradient.

The research gets to the importance of criteria coefficient from the following matrix:

$$\begin{matrix} a & b & c & d & e \end{matrix}$$
$$\begin{bmatrix} 1 & \frac{1}{8} & \frac{1}{9} & \frac{1}{6} & \frac{1}{7} \\ 8 & 1 & \frac{1}{7} & 5 & 6 \\ 9 & 7 & 1 & 7 & 7 \\ 6 & \frac{1}{5} & \frac{1}{7} & 1 & 1 \\ 7 & \frac{1}{6} & \frac{1}{7} & 1 & 1 \end{bmatrix} = A$$

a =topographical gradient
b= accessibility
c= open space
d= danger of earthquake

Here, it is seen that the topographical gradient of land has the least importance while the open spaces have the more. The rest can be graded accordingly. The figures used in this matrix are provided from the experts in health and cure, Red Crescent departments and municipality. Every one of the experts has filled a questionnaire and expressed their own views regarding the issue of positioning based on their authorities in the city government. Since the emphasis in this process is on the open space, therefore, it is the most important factor and accessibility that allows for rapid accessing to the open space in rescue mission that might be considered as the second important factor.

Calculating the geometrical average of the arrays of matrix A:

(a) Topographical gradient = $\sqrt[5]{(1)\left(\frac{1}{8}\right)\left(\frac{1}{9}\right)\left(\frac{1}{6}\right)\left(\frac{1}{7}\right)} \approx 0.201$

(b) Accessibility= 2.028 (c) Open space= 4.988 (d) Danger of earthquake= 0.703

(e) Inadaptable application= 0.699

Summation of geometrical average of criteria= 8.559

Hence, by calculating the importance coefficient of criteria Wi; the importance coefficient of criteria equals to the outcome of the geometrical of each factor divide by the total means:

W_e=0.0819 W_d=0.082 W_c=0.583 W_b=0.237 W_a=0.024

Then, the attempt has been done on calculating the importance coefficient of sub criteria and the geometrical average of the factors in the matrix which is shown as follows:

W_g = 0.167 W_f = 0.833 W_h = 0.133 W_i = 0.747 W_j = 0.12

W_q = 0.747 W_r = 0.193 W_s = 0.06 W_u = 0.143 W_w = 0.715

W_m = 0.08 W_n = 0.243 W_o = 0.197 W_p = 0.48

The definition of criteria and sub criteria used in the study are presented in **Table 3**.

Table 3: The definition of criteria in selecting the safe open space

e: inadaptable application	t: main infrastructure	o: high voltage sub station	k: block size	f: gradient	a: topographical gradien
j: access to facilities	u: medical centers	p: waste recycling center	l: position in relation to big faults	g: mean sea level	b: accessibility
s: gas	v: fire station	q: water	m: fuel station	h: accessibility to sub structures	c: open space
	w: urban services center	r: power	n: gas station	i. road access	d: earthquake danger

After obtaining the importance of sub criteria and determining the weight for each parameter; it has been applied in ArcGIS software via the raster calculator instruction to each information layers. The combining manner of the layers is that the value of each cell in corresponding layers has been multiplied into the weight of the same layer and then all individual layers of one level have been added together. The final result is presented as a zoning map where the safe regions are identified by high points (8, 9). After conducting several field observations and applying a series of conditions such as the area of designated region; then the suitable area is selected for settlement and rescue mission.

The area is 61,518,192 m^2. After inspecting the open space and the land, the final sites are selected with an area of 477,600 m^2 which allows for the temporary settlement of 16,000 individuals. The open spaces and the selected regions for the purpose of rescue and settlement are presented in **Figures 4** and **5**.

Figure 4: Open spaces in the city of Neishabour

Figure 5: Showing the selected spaces for rescue and settlement

Results and Discussion

The increasing number of disasters in the world [7, 9, 10] is quite alarming and it is alerting us on how to manage them in order to reduce the loss of life and property. GIS is being used in disaster management for the past few years. This research has shown the usefulness of the GIS for disaster management in Neishabour city in Iran. This city does not have sizable higher educational centers to be used as rescue and relief center. Only one facility has over 10000 m^2 and about 80% of the whole city have an area of less than 1500 m^2 **(Figure 6)**.

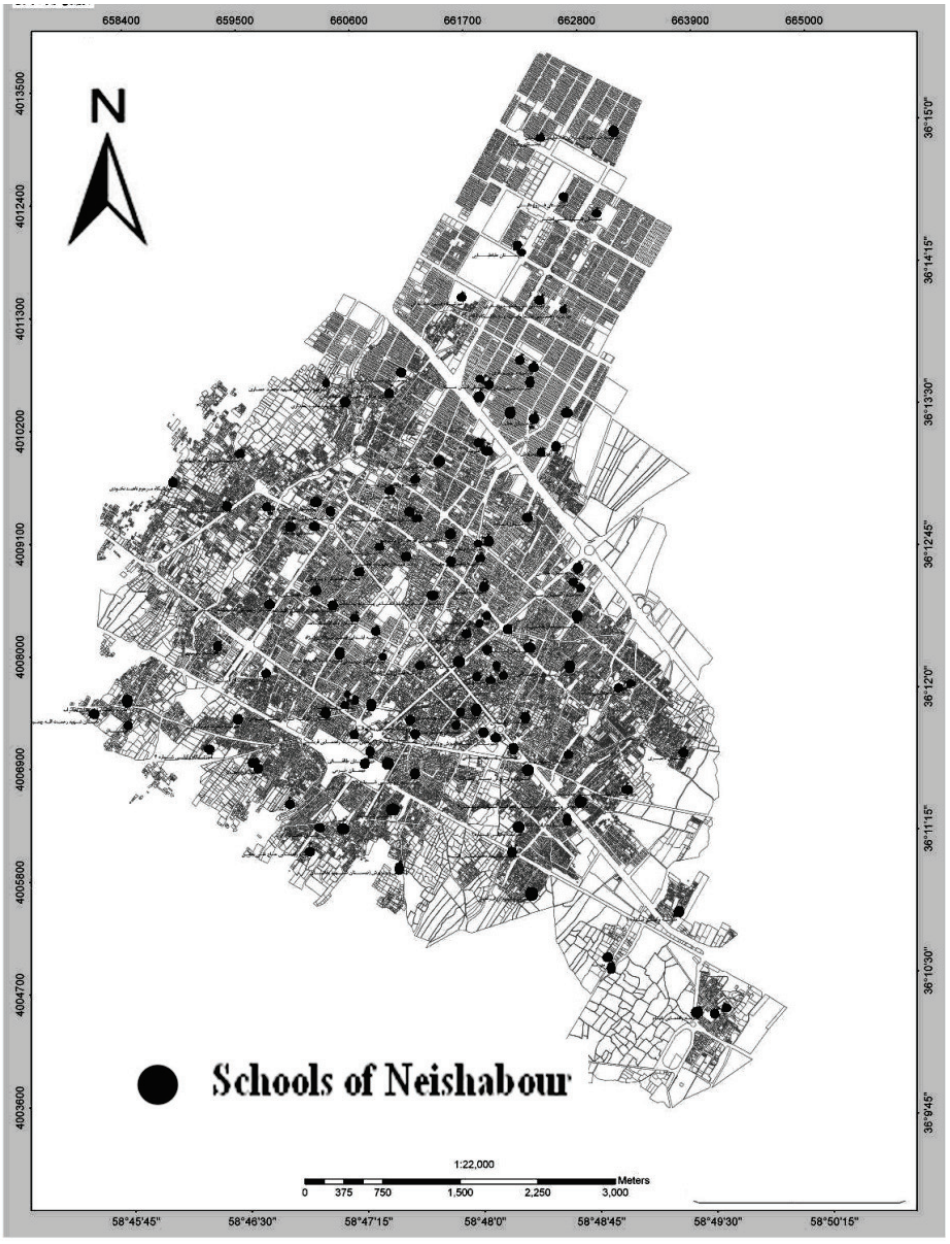

Figure 6: Schools of Neishabour

This research shows that the parks and green spaces have their importance for the management of disasters. The quantity and quality of urban green spaces and their distribution in the city are essential for protection against earthquake effects. They can be assigned to serve as temporary settlement centers, aid collection centers etc. The closeness of the unfenced open green space to the residential areas with no doubt will affect the rescue and relief operations **(Figure 7)**.

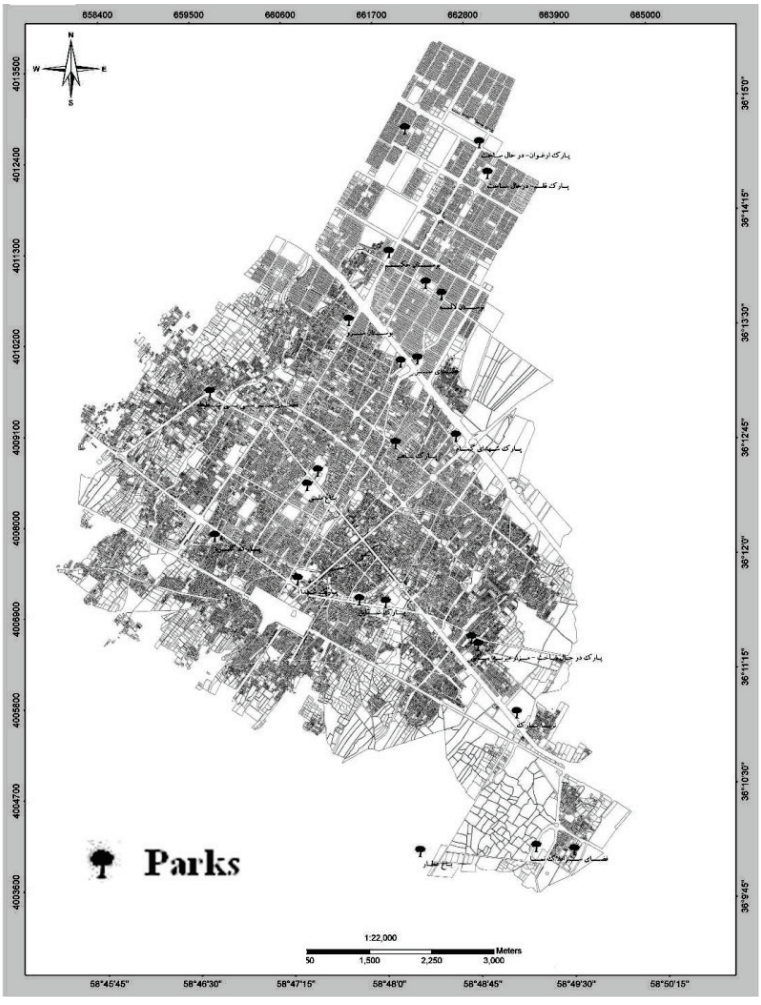

Figure 7: Parks and open green spaces of the city

The study reveals that the existence of big medical centers is a factor for relief of injured during accidents caused by disasters. The more space provided for this purpose, the better. In the city of Neishabour, there are two medical centers, the Hakim and 22nd of Bahman which are equipped with very advanced facilities and enough open space as a safe area. Other medical centers are limited in these aspects **(Figure 8)**.

Figure 8: Medical centers of the city

Mosques and religion centers also can be used for this purpose although they do not have vast area. They can act as temporary regional headquarters for lateral activities during crises. For example the biggest mosque in Neishabour has a historical texture and will not be a good choice for temporary settlement and rescue or relief center **(Figure 9).**

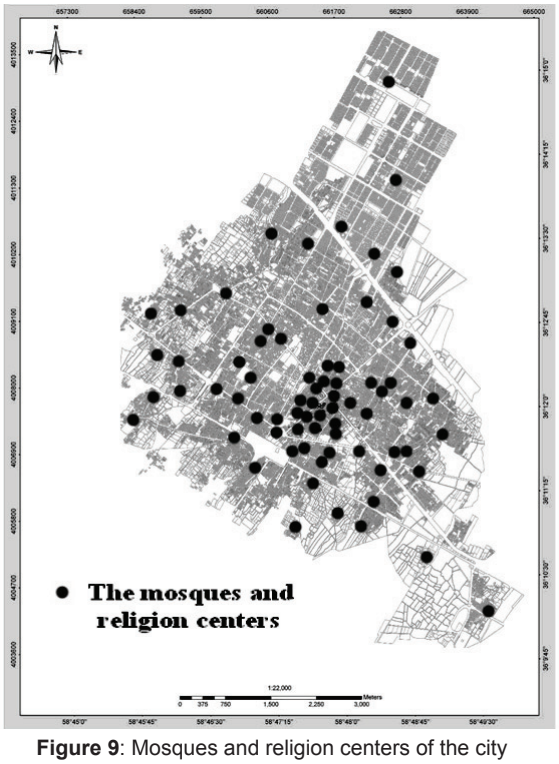

Figure 9: Mosques and religion centers of the city

This research shows that sport facilities and stadiums are another good and proper choice. They can serve our intended purpose during a disaster. In the city of Neishabour, the Takhti, Enghelab, Abedi and Shardari can be utilized in the comprehensive plan of the crisis management. It should be mentioned that these locations have both indoor and outdoor facilities.

Conclusion and Suggestions

It is vital to establish regional crisis management units all over the 14 districts of the Neishabour city. And this procedure is in accordance with the provisions of health department and they are identified as the regions of fourteen. Every one of these regions acts as different poles regarding the crisis management in a manner where the control and the support of each region is determined by the main and auxiliary command bases. The strategic objective of developing such bases is to provide operational and tactical grounds in order to materialize the preventive, preparedness and comforting measures in different crises especially the big natural ones like earthquake or flooding, in other words, the practicality of the disaster management system. Each main stations has different regional sub stations such as multipurpose disaster management, police, helicopter emergency landing spot, field emergency, statistics and information, news broadcasting etc. These sub stations are subject to the city or provincial command center. The voluntary mobilization and preparedness action by local people directed from mosque are considered as the marginal rescue and relief operations. It is worth mentioning that such activities are practiced on regular basis and are not necessarily limited to actual disaster management activities and their role is accounted for in the whole system.

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MULTIPURPOSE CADASTRE IMPLEMENTATION IN MALAYSIA

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Abstract

Cadastre information can be expanded beyond describing just about the metes and bounds of a property or treated just as a base data for mapping purposes. With the advancement in computer and software technology, cadastral data when incorporated with auxiliary data from GIS layers as an example can provide a wide range of information for better land management and development.

Thus multipurpose cadastre is no longer about the issuance of land title but is more related to acquiring information gathered from multiple sources of spatial digital data. These data usually belong to different agencies. As the term implies, the practice of multipurpose cadastre will involve inter-agency data transaction from one database to another.

This paper reviews the issues in bringing about the implementation of multipurpose cadastre system and how these may affect the development and applications of the system in Malaysia.

Key words*: Multipurpose Cadastre, Cadastre*

1.0 Introduction

The earliest development and practice of cadastre system can be traced back during the Egyption civilisation around 3000 BC. In this case, its main function was to support property valuation and land taxation systems [Dale and McLaughlin, 1988]. This type of cadastre system is termed as fiscal cadastre. Another type of cadastre system is the judicial cadastre which in principal refers to the legally bounded parcel-based description of interests or rights in real property; typically supported by titles or deeds, and registry. In Peninsular Malaysia and Labuan, the main law pertaining to land administration and management is the National Land Code 1965 (KTN 1965), while the land law used in Sabah and Sarawak, is the Sabah Land Ordinance (Cap 68) and Sarawak Land Code (Cap 81) respectively.

Certified Plan (Pelan Akui) is a type of cadastral plan depicting the location as well as the spatial information of land parcels. Updating of this plan is a perpetual process whenever there are changes to the existing information which may be affected by any latest survey works. Excerpt from the Registered Plan incorporated in the Final Title document serves as an undisputable legal binding evidence of the lot parcel's boundaries, location and acreage [KTN, 1965]. Furthermore the Registered Plan is also being recognised as an infrastructure component for sustainable development by members of the the United Nation as stated in The Bathurst Declaration [UN-FIG, 1999]. Thus besides being one of the important parts in land registration, cadastral plan can also be a vital tool in land management. The objectives of this essay is to discuss the meaning of multipurpose cadastre, its significants and implementation issues in relation to land management in Malaysia.

2.0 Multipurpose Cadastre

The multipurpose cadastre (MC) concept acquires popularity around mid-70's in line with the development of software and computer technology [McLaughlin, 1988]. According to NRC [1980], MC is defined as follows:

"An integrated land information system containing legal (e.g., property ownership or cadastre), physical (e.g., topography, man-made features), and cultural (e.g., land use, demographics) information in a common and accurate reference framework. The reference framework typically is established with rigorous geodetic and survey control standards and coordinate systems."

Figure 1 shows the relationship between various data users in cadastral system. MC, judicial cadastre and fiscal cadastre form the basis of the system which caters the needs for the environment (land), land ownership, law enforcement, government administration, public enquiries and land economy. Meanwhile, the cadastral data are used mainly for land development, land use strategy, land administration and financial planning.

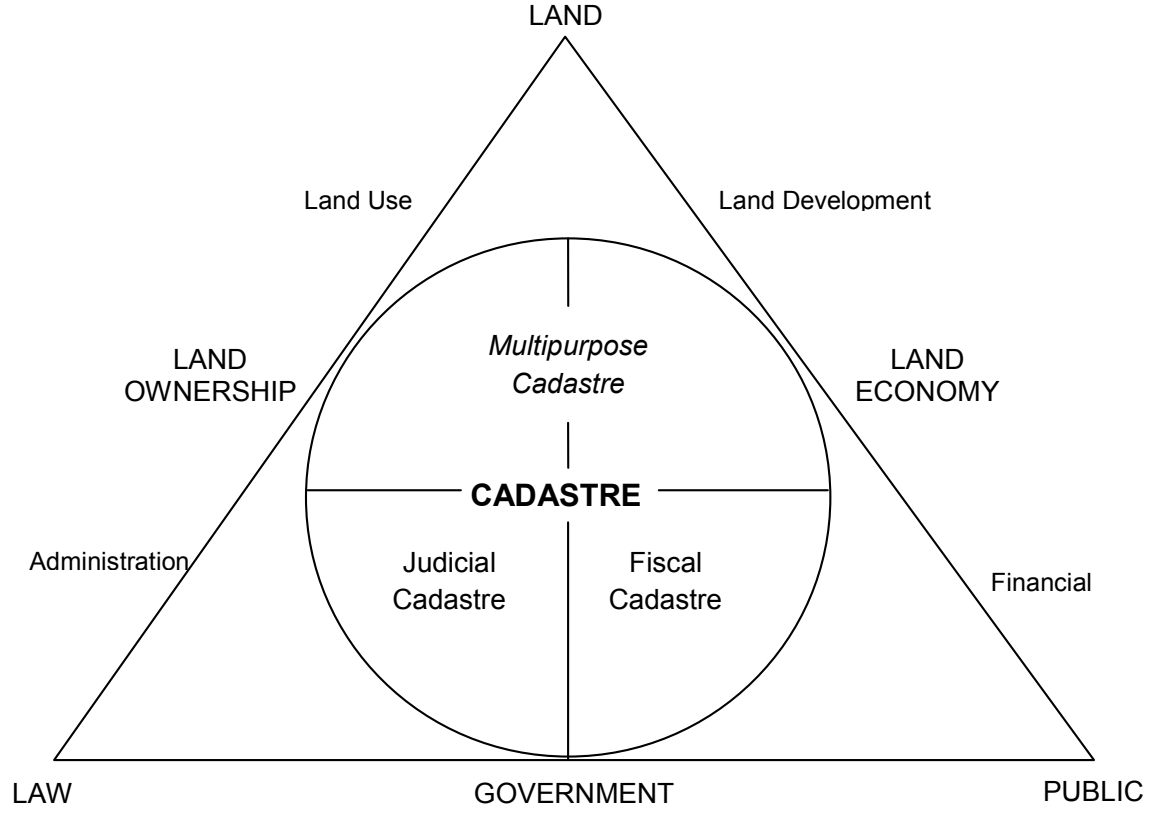

Figure 1: Cadastral System Concept, Dale [1979]

It is clear from the definition above that MC is an integral part of the land information system (LIS). Thus it is necessary to have an efficient LIS in order to implement MC satisfactorily. An important element in a LIS is the data model. Data model is the function designed to integrate various data sources, be it the spatial or attribute data, that allows for effective and fast data retrieval. Another vital consideration of the data model design relates to the ability of the LIS to deliver a comprehensive and accurate information. Currently, the centralised computer system and the modern networking technology are two types of information system integration technology being widely adopted by many organisations. Thus, in order to achieve an effective MC implementation, the functional concept of the data model and the type of information system technology must fit in accordantly. Some of the fundamental information/ data that should be taken into account in LIS development is shown in **Figure 2**.

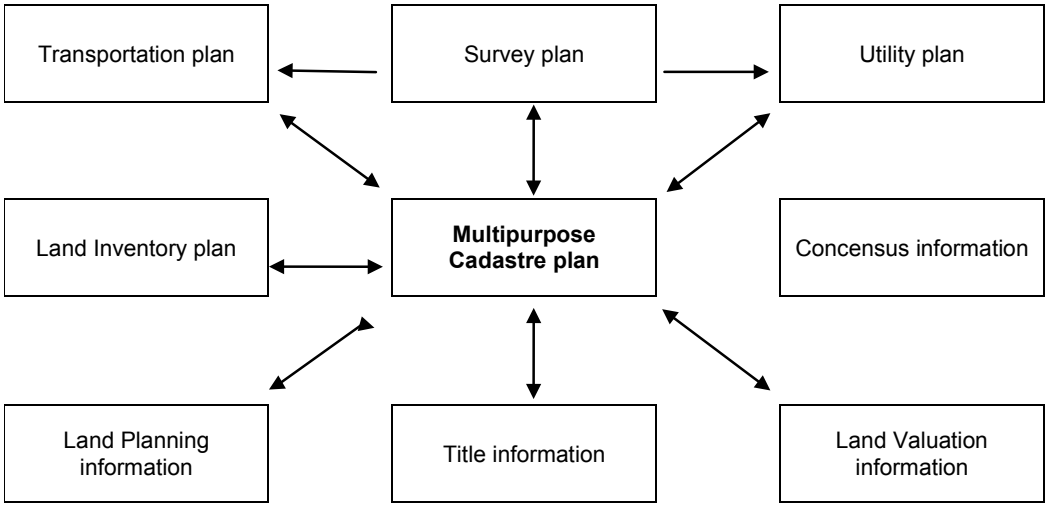

Figure 2: The integration concept of spatial cadastral data for the implementation of multipurpose cadastral

There are 2 requirements to be considered in the implementation of MC. They are the technical and organisational requirements. According to NRC [1980], the elements involve in meeting the technical requirement include:

i. Coordinate frame based on geodetic reference network
ii. Accurate and up to date large scale map series
iii. Cadastral map showing parcel boundaries
iv. Identifier number to each parcel
v. Storage of the parcel inventory and boundary information

The technical elements above can be related to the integration concept shown in **Figure 2** to form the conceptual model of MC development. This model is shown below in **Figure 3**. Note that by adhering to such model concept ensures an MC development based on topography map, cadastral and and geodetic reference frame infrastrukture [NRC, 1980].

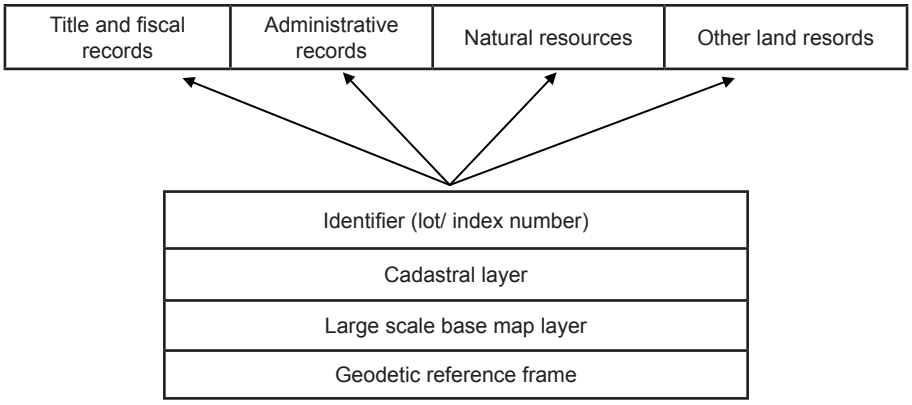

Figure 3: Multipurpose Conceptual Model Components

In respect of geodetic reference frame, Department of Survey and Mapping Malaysia (JUPEM) has established a well defined set of stations network covering the entire country that can be utilised in MC implementation. The network is also connected to the International Terrestrial Reference Framework realised at epoch 2000 (ITRF2000). As stations coordinates conform with the global network, users can use the Global Positioning System (GPS) to determine position coordinates directly from the observations. Furthermore, with the Malaysia Real Time Kenematic Network (MyRTKnet) which is established in 2003 employing the Virtual Reference System (VRS) technology, GPS users can assess coordinates solution in real time. This simplify fieldwork procedures in terms of cost, time and subsequently improve delivery service to the clients.

Base maps provide the general surface information including the contour of the land. It was found that planimetric or topographic maps with scale between 1:500 to 1:25000 are suitable for meeting MC requirements [NRC, 1980]. On the other hand, the cadastral layer which may consists of several cadastral maps provide the existing location of all land parcels. Each parcel must have been surveyed according to the prescribed standard and a unique identifier assigned in order to maintain discrete and exclusive reference to the information contained in other records. In addition to the 5 technical elements, another equally important requirement that can be included is a computerised land or cadastre management system. This requirement is in line with the advanced computer technology available today. On the other hand, building plan can be added in **Figure 2** as one of the relevant spatial cadastral data for MC implementation.

Building is a common structure on most land parcels. Other structures can be associated with building includes swimming pool, electric transmission lines, drainage system and main water pipelines. In strata title scheme, the buildings must be proved by survey measurements that it is entirely within the allocated lot boundary before titles can be issued. Furthermore, boundaries are demarcated to avoid dispute between the neighbouring land owners over the limit of their building structures. Hence, there is a significant relationship of the land and the building structures upon it. Therefore it is appropriate to include the building plan as an important spatial cadastral data for the implementation of multipurpose cadastral given in **Figure 2**.

In Malaysia, the concept of MC has been discussed since 1990's [Abdul Majid Mohamad, 1997] but its implementation only become possible in 2010. Apparently the practice in MC began in 1970s following the breakthrough in computer technology in early 1960s [McLaughlin J.D., 1975]. However, only when the advent of Geographic Information System (GIS) been refined and widely used in 1990s, its realisation started to gain momentum especially among the developing countries. Recently JUPEM has started using a fully computerise management system called eKadaster in performing almost every aspect of works related to cadastre survey. This system contains a number of web-based applications running GIS and LIS programs. Through the development of e-Cadastre, the opportunity to realise the MC concept in Malaysia is now wide open. Plans are being thought at the moment, on how to set up the base map given the capabilities which is now in hand.

The implementation of MC does not require additional cadastral activities. Instead the present activities may be reorganised without disrupting the delivery efficiency achieved to accommodate for the implementation [NRC, 1980]. However contribution and cooperation from the Federal, State and private sectors especially in term of financial support are very important. Since MC is a new program, the statutory set up and government budget endorsement would take up some time to get through. Thus an implementation progressing in stages is inevitable.

It is important the Federal government to become the lead agency in the implementation of MC. This designation seems appropriate since Federal agencies have the administrative grip to lay out the fundamental operating procedures, financial allocation and conduct relevant analysis for MC implementation progress and development. With the eKadaster project, the Federal government, through DSMM has assumed the responsibility in providing the primary infrastructure such as the geodetic reference control stations all over the country, cadastre base map layer and the poject itself produced a web-based cadastre data management system for integrated operation. At the same time the State government can play its role by encouraging the local council, statutory boards and private sectors to get involve in land development projects and participate in preparing or bringing the information on the maps up-to-date for integration with the cadastral layer.

3.0 The Need Of A Multipurpose Cadastral System To The Country

3.1 Sustainable Development Program Through Integrated Information Sharing

Many developed countries that have implemented MC practice the system in 2 approaches [NRC, 1980]. Firstly, to gather information related to land parcels in a comprehensive and continuous manner. A comprehensive Information goes beyond merely about the ownership and fiscal data which ordinarily related to a land parcel. Additional information such as the location and status of underground utility infrastructure, buildings, fences, drains, electric cables should also be related to the boundary data of a lot parcel. General data like household headcount and number of vehicles owned by the landowner can also be integrated into the information databank. Through the web-based network ICT system, these information then can be updated continuously and shared in a systematic

and secured platform. Secondly, to ensure that the spatial and attribute data are efficiently managed with clear reference or connection with the parcels of interest. An important aspect for the success of this approach is to have accurate and comtemporary data. Data with this standard is essential in generating quality map, GIS layer and many other geographic products that can be used for efficient planning and development of land projects.

Other than JUPEM, information related to land parcels can also be found in the Land Office, City Council, Department of Land and Mines, Transportation Department, Civil Engineering Department and Agricultural Department. In the private sectors, the surveying, architecture and construction are a few of many other companies that can offer information related to a land parcel. Information from these various custodians include to name a few about the ownership, caveat, land use condition, layout of utility infrastructure, building type or position and also quit rent rate. They complement the spatial data provided in the cadastral base map layer. Data integration is made posible with the use of suitable GIS and ICT network systems. As a result of this information enrichment and ease of accessibility through electronic networking, the map which contain not only spatial location of land parcels, but also other related attribute data are now readily available to assist in decision making strategy. With such level of efficiency in obtaining various types of information which can be specifically related to a particular land parcels or even areas, would very much facilitate the country's effort to manage the land in a sustainable manner.

3.2 Meeting The Increasingly Challenging and Complex Public Demands

MC system can resolve public demands/ enquiries professionally in many ways through a systematic and scholarly approach. Public perception and awareness have improved over the last two decades due to better education system and exposure to the electronic multimedia of internet. Subsequently the public realise of their lawful rights and this trigger the tendency to come up with different sorts of complex yet founded demands. For example, cries for better environmental protection against pollution and man-made erosion is one of the popular demands related to spatial orientation. To fulfill these demands needs a system that enable the operators to access all relevant information as instantly as posible with a guarantee that they are intact, reliable and up to date.

Most geographical or mapping software like ESRI, Intergraph, MapInfo and AutoCAD support different format GIS-based data integration and manipulation. Thus the same data in the database can be extracted by various authorities for different applications or investigations. Before the extraction process, data relevant to the enquiries or demands are specifically identified. Then data are extracted from the database of the responsible authorities and integrated using the in-built format conversion facility. Through the filtering process, the processors have more insight of the data required in solving the subject matter and also at the same time could envisage the methods of obtaining reliable results associated with spatial location of the cadastral parcels. Subsequently, public demands/ equiries are tended smartly and effectively in a minimum time period with marginal cost.

3.3 Improving The Land Information Delivery System For the Public

Advanced information technology is one of the main factors that allows the implementation of MC system. The technology have boosted delivery systems to the public and professionals alike to a better standard. Nowadays, customers with internet line have the convenient way to acquire information or data on-line. Well structured data model and sophisticated search engine are the important considerations for having a smooth and efficient on-line delivery services. There are 3 information delivery methods called GIS, real property and Danish concept [Stig and Hans, 1999] that can be applied in the implementation of MC system. The GIS concept is suitable for land parcel based information while the real property concept is a good tool in distributing the judiciary, fiscal and land use information. The Danish method however is suitable in catering information that have been categorised according to the land use management.

3.4 A Better Tool For Tax Evaluation Purposes

Currently, land taxation is evaluated base on the use, size and title of the land. With MC system, the evaluation strategy can be more practical, consistent and appropriate compared to the conventional method. This is because the wealth of information contained within the system as well as the ability to integrate different data for analysis allow property value to be evaluated regularly based on socio economy, basic infrastructure facility and gross income of the area.

4.0 Issues Related To MC Implementation In Malaysia

4.1. Data Custodian and Security

Party responsible of the data must be clearly defined. Once this is established, the party should be given clearinghouse authority and manage the safekeeping of the data. Resource access and security policy should be set up and published for public reference. Furthermore the Data Custodian must be familiar with the data and the transaction flow so that appropriate decisions for controlling data definitions can be taken and also ensuring that the data conforms to the consistent definitions while they are active in the database. In general, the main responsibilities as data custodian are as follows:

1. Controlling data definitions to ensure data conform to consistent definitions over the life of the data.
2. Approving requests for access submitted by authorised personnel.
3. Reviewing accesses and transaction groups ensuring the accesses and groups are appropriate and valid.
4. Monitoring the data to ensure current data processing procedures are effective.

Data must be protected to prevent irresponsible use intended for personal benefit and illegal dissemination. Furhermore, protection ensures database is safe from viruses, hackers and privilege abuse. Despite the fact that for a successful implementation of MC,

various users should be allowed to share information, a security screening system is required to evaluate every application. As digital threats can harm data in many ways data proprietors have no choice but to equip their database with the best, which usually is expensive, security system available in the market.

4.2. Database Integration

As mentioned earlier, use of information from spatial databases of different agencies is inevitable in order to implement the MC system. Thus cooperation between agencies is important for smooth coordination and data transaction control. Again ICT has the tool to make this cooperation possible through an information system development based on integrated network of spatial databases [Ivan, 2003]. By means of integrated network, data custodian agencies should participate in the implementation of MC and see that data sharing works effectively. Generally the success in formulating an information and communication network largely depends on 2 factors [NRC, 1980]. First is the degree of determination exerted by the local, state and federal authorities to participate in the implementation and second, the perceptions among the parties involved regarding the benefits of the system even when the data are available free of charge.

There are 3 issues must be looked into when integrating a number of spatial databases into a networking system. These collateral issues are the connection between agencies, establishment of the related rules and regulation and the characteristics of data.

4.2.1. Connection Between Agencies

As stated earlier, the federal and states authorities maintain seperate jurisdiction or power over land matters. Fundamentally all lands in the states belong to the state ruler (the Sultan) under the purview of the District and Land Office while lands in the federal district are entrusted to the Department of Land and Mineral management. Survey works are carried out by the DSMM which is a federal body. Unfortunately, there aren't a single mechanism to date that underlays the basis for digital data sharing policy. A number of systems such as the Computerise Land Registration System, Computerise Land Revenue Collection Management System, e-Cadastre and Malaysian Geospatial Data Infrastructure (MyGDI) have been set up to facilitate operating services. In this instance, the first two systems are used in the departments run by the state authority and the other two systems cater the federal departments. These systems work independently and the prospect of extending their functions so a link between land registration and survey information is desirable seems bleak because they operate on different platforms.

Ideally, these departments that assume the role as spatial data custodians, should favour an MC database network system based on or conform to the world wide web protocol system. This network conformation promotes inter-departmental cooperations as well as facilitates users via its on-line application/ transaction. For example, the Relational Database Management System (RDBMS) is a widely used practical means of building a network of web-based compatible database system. It is important however, the participating agencies

to agree on using a common operating system in running the network system. Windows, UNIX and Linux are the established operating systems proven to have the capability in handling spatial data.

4.2.2. Rules and Regulations Establishment

A set of rules and regulations pertaining to the MC system must be established. Areas needing such provision are those related to data security and database management procedures. As an example, required database infrastructure, information technology and communication protocol between databases, data custodianship and coordination between agencies and the legality of data in the database. Furthermore, data characterictics such as standard format, data quality and authenticity could also be included generally in setting up the rules and regulations.

In 2009, JUPEM has caused some clauses in the KTN 1965 to be revised to recognise the digital data in the department's cadastral database legally. Subsequently, among the provisions now included in KTN 1965 related to the digital data in JUPEM are copyrights issue, liabilities due to blunders, data secrecy, limits to data procurement, access rights and data ownership. Nevertheless many custodian departments have not taken such action which is important in realising the concept of MC system. Without legal recognition the information in the data are not binding and thus can be easily disputed in the court of law.

4.2.3. Characteristics Of Data

Characteristics of the data must meet the required standard level to ensure smooth integration with data from other databases. More importantly are the data format, authenticity and key identifier. Furthermore, this also facilitate information extraction and manipulation processes during technical works. Key identifier distinguishes every data type in a database using unique coding but if the same data type is being stored in the database of other agency, identical key identifier can be assigned to that data. Meanwhile, data quality dan integrity can be verified from metadata statements which consist information related to ownership, revenue, data accuracy and many more.

A good system can be expanded to meet various types of enquiries or demands as well as to cater the increasing amount of data which evolve as time goes. This criterion refers not only for the MC system but most if not all other database management systems. Thus the data model should be structured in a flexible fashion which permit adjustment in accordance with current needs and trends. Other advantages with flexible data model are;

i. The database applications and operating system can be set up based on required standard.
ii. Data from different database management applications can be integrated for analysis, modelling and presentation.
iii. Anomalous data can be re-structured to improve the system.

5.0 Summary

Cadastre is divided into 3 categories; judicial cadastre, fiscal cadastre and multipurpose cadastre. In MC, cadastral data are incorporated with auxilliary information such as the topography data to map the real conditions of various environmental or development situations (land erosion, utility infrastructure etc.). This practice is possible because MC system allows the integration of multiple data utilising the advancement in ICT, GIS, web-base application and network system. Land management become more effective wth MC since data from different sources are brought together for detail analysis. Note that this is the prerequisite in achieving a sustainable development planing Planning for land and sosio-economic development can benefit much from the implementation of MC. With MC, spatial data availability is not restricted. Users can gather relevant data from different custodian agencies to perform analysis and obtain the most reliable and realistic results. There are several (GIS) software can be used for spatial data manipulation. The most common are ESRI, Intergraph, MapInfo and AutoCAD. These software support each other in terms of format interchangeability.

The implementation of MC system involves technical and organisational requirements. There are 5 technical requirements to be considered. They are coordinate frame based on geodetic reference network, accurate and up to date large scale map series, cadastral map showing parcel boundaries, identifier number to each parcel and storage of the parcel inventory and boundary information. In respect of the organisational requirement, the federal government must spearhead the implementation process and provide the financial support as necessary. On the other hand, the local government should also participate in the move and encourage the private sectors to use the infrastructure and facilities that have been built. In fact, in the end, the local council and the individual professionals is actually the party that is going the gain most of the benefit generated through the MC system.

There are 2 main issues that pose a challenge in the implementation of MC. Firstly data custodian and security. As custodian agency, there are tasks to be adhered as guidelines in ensuring data security. Secondly database integration as stated in 4.2.1, 4.2.2 and 4.2.3. The issue can be resolved if the political and administrative division between the federal and state government of land matters are minimised if not obliterated, set up a set of rules and regulations pertaining to the digital data/ database for legal recognition and set clear guidelines pertaining to data characteristics for all custodian agencies to apply to their data and databases.

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LAPORAN BERGAMBAR

SEMINAR ON GEOGRAPHICAL NAMES DAN 18TH DIVISIONAL MEETING UNITED NATIONS GROUP OF EXPERTS ON GEOGRAPHICAL NAMES, ASIA SOUTH EAST AND PACIFIC SOUTH WEST (UNGEGN ASEPSW)

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YB Tan Sri Datuk Seri Panglima Joseph Kurup, Timbalan Menteri Sumber Asli dan Alam Sekitar menyampaikan ucapan pembukaan beliau.

Seminar on Geographical Names dan 18th Divisional Meeting United Nations Group of Experts on Geographical Names, Asia South East and Pacific South West (UNGEGN ASEPSW) telah diadakan dengan jayanya di Hotel Crowne Plaza Mutiara, Kuala Lumpur masing-masing pada 21 dan 22 Februari 2011. Seminar dan mesyuarat tersebut telah dirasmikan oleh YB Tan Sri Datuk Seri Panglima Joseph Kurup, Timbalan Menteri Sumber Asli dan Alam Sekitar (NRE).

Seramai 182 peserta yang terdiri daripada pegawai-pegawai kanan dari JUPEM, jabatan / agensi kerajaan persekutuan yang menganggotai Jawatankuasa Kebangsaan Nama Geografi (JKNG), Unit Perancang Ekonomi Negeri, pihak-pihak berkuasa tempatan, institusi-institusi pengajian tinggi serta agensi-agensi yang berkaitan dengan aktiviti penamaan geografi telah menghadiri *Seminar on Geographical Names*.

Seminar berkenaan turut menjemput pembentang-pembentang kertas kerja daripada negara-negara ahli bahagian ASEPSW UNGEGN. Sebagai pengenalan, UNGEGN merupakan pertubuhan yang diwujudkan di bawah Bangsa-Bangsa Bersatu yang berkaitan dengan penamaan geografi. Pakar-pakar UNGEGN telah dipertanggungjawabkan untuk bermesyuarat dan membuat cadangan teknikal berkenaan penyeragaman nama-nama geografi di peringkat negara dan antarabangsa. UNGEGN berfungsi melalui 22 Bahagian Geografi/*Linguistic* dan 6 Kumpulan Kerja yang mengkaji isu-isu antara lain, meliputi kursus/latihan, pembangunan pangkalan data nama-nama geografi dan gazetir, sistem romanisation, nama negara, terminologi, publisiti dan garis panduan toponimi.

Melalui kertas-kertas kerja yang telah dibentangkan oleh negara-negara ahli berkaitan aktiviti penamaan geografi, ianya telah memberi peluang kepada peserta seminar untuk bertukar pendapat

dan pandangan serta pengalaman dalam melaksanakan aktiviti-aktiviti penamaan geografi. Berikut merupakan kertas-kertas kerja yang telah dibentangkan semasa *Seminar on Geographical Names* tersebut:

Kertas 1 : *Geographical Names Activities in Malaysia* (Pn. Fuziah Hj. Abu Hanifah)

Kertas 2 : *Geographical Names Activities in Indonesia* (Prof. Emeritus Dr. Ir. Jacub Rais)

Kertas 3 : *Geographical Names Activities in Brunei* (Awang Haji Mohd Jamil Haji Mohd Ali)

Kertas 4 : *Geographical Names Activities in Philippines* (Jose Galo P. Isada)

Kertas 5 : *Generic Names Across Languages in the Region – an Indonesian case study* (Prof. Emeritus Dr. Ir. Jacub Rais)

Kertas 6 : *Naming Places in Malaysia* (Tan Sri Prof. Emeritus Dr. Khoo Kay Kim)

Sekitar perasmian majlis oleh YB Tan Sri Datuk Seri Panglima Joseph Kurup, Timbalan Menteri Sumber Asli dan Alam Sekitar

Pembentang-pembentang kertas kerja bersama Sr Ahmad Fauzi bin Nordin selaku Pengerusi Sesi menjawab soalan-soalan yang diajukan oleh peserta

Prof. Emeritus Dr. Ir. Jacub Rais dari Indonesia telah membentangkan kertas kerja beliau.

Dukacita dimaklumkan bahawa beliau telah kembali ke rahmatullah pada 28 Mac 2011.

Semoga Allah S.W.T mencucuri rahmat ke atas rohnya.

Al-Fatihah…

YBhg Tan Sri Prof. Emeritus Dr. Khoo Kay Kim daripada Jabatan Sejarah, Universiti Malaya telah membentangkan kertas kerja beliau dengan penuh semangat

Antara kertas kerja yang telah menarik minat peserta seminar ialah kertas kerja yang dibentangkan oleh penceramah tempatan iaitu YBhg Tan Sri Prof. Emeritus Dr. Khoo Kay Kim daripada Jabatan Sejarah, Universiti Malaya berkenaan *Naming Places in Malaysia: A Historical Perspective*. Pembentangan beliau telah memberi kesedaran mengenai pentingnya sejarah bagi sesuatu tempat untuk direkodkan serta faktor sejarah yang merupakan antara elemen penting bagi penamaan sesuatu tempat.

Semasa *"17th Divisional Meeting UNGEGN ASEPSW* yang telah diadakan di Sydney, Australia pada 11 April 2010, Malaysia telah dipilih menjadi Pengerusi baru bagi bahagian ASEPSW untuk tempoh 2010 sehingga 2015. Bahagian ini turut dianggotai 19 negara lain iaitu Indonesia, Brunei Darussalam, Singapura, Sri Lanka, Filipina, Bhutan, Thailand, Kemboja, Vietnam, Laos, Myanmar, Australia, Timor Leste, Papua New Guinea, Kepulauan Solomon, New Zealand, Vanuatu, Tonga dan Samoa. Sehubungan dengan itu, *18th Divisional Meeting UNGEGN ASEPSW* turut diadakan pada 22 Februari 2011 dan telah dihadiri oleh peserta-peserta dari Indonesia, Filipina, Brunei Darussalam, Singapura dan Malaysia yang bertindak sebagai Pengerusi serta pemerhati bagi memberi pendedahan dan pengalaman kepada lebih ramai pegawai-pegawai JUPEM.

Mesyuarat berkenaan merupakan forum perbincangan di kalangan negara-negara anggota ASEPSW mengenai perkara-perkara yang telah dirangka di bawah program UNGEGN seperti standardisasi nama-nama tempat dan *features*, menggalakkan program latihan, mempromosi penggunaan nama-nama standard di atas peta sesebuah negara, menerbitkan Gazetir Kebangsaan serta menggalakkan kerjasama antara negara dalam standardisasi nama dan features yang merentasi sempadan antarabangsa.

YBhg Datuk Prof. Sr Dr. Abdul Kadir bin Taib mempengerusikan 18th Divisional Meeting UNGEGN ASEPSW

Kesemua negara-negara ahli yang hadir telah melaporkan aktiviti penamaan geografi *(country report)* bagi negara masing-masing. Selain daripada itu, beberapa negara yang tidak dapat menghadiri mesyuarat ini turut mengemukakan laporan negara masing-masing iaitu New Zealand, Sri Lanka dan Thailand. Hasil daripada mesyuarat ini telah dilaporkan semasa Mesyuarat Sesi ke-26 UNGEGN yang telah diadakan di Vienna, Austria dari 2 hingga 6 Mei 2011.

Ahli-ahli mesyuarat tekun membincangkan isu-isu yang berkaitan dengan penamaan geografi

18TH DIVISIONAL MEETING UNITED NATIONS GROUP OF EXPERT ON GEOGRAPHICAL NAMES (UNGEGN), ASIA SOUTH EAST AND PACIFIC SOUTH WEST ON 21-22 FEBRUARY 2011 AT CROWN PLAZA MUTIARA HOTEL,KUALA LUMPUR

Ahli-ahli *18th Divisional Meeting UNGEGN ASEPSW* yang terdiri daripada Malaysia, Indonesia, Brunei Darussalam, Filipina dan Singapura

Dalam pada itu, ahli mesyuarat juga berpeluang untuk menyertai lawatan sekitar Putrajaya pada sebelah petangnya.

Sekitar lawatan delegasi antarabangsa *18th Divisional Meeting UNGEGN ASEPSW* ke Pusat Pentadbiran Kerajaan Persekutuan, Putrajaya

Melalui seminar serta mesyuarat yang telah diadakan, peserta-peserta tempatan telah didedahkan mengenai pentingnya penamaan geografi yang seragam. Selain itu, peserta juga dapat mengetahui aktiviti penamaan geografi yang telah dan sedang dilaksanakan di peringkat antarabangsa serta dapat berkongsi pengalaman dan pengetahuan bagi memastikan aktiviti penamaan geografi di Malaysia dapat berjalan dengan lancar dan jayanya. Sesungguhnya, nama geografi yang seragam dapat menjadi identiti dan menyerlahkan budaya, warisan dan landskap sesebuah negara.

LAPORAN BERGAMBAR

MESYUARAT KE-62
JAWATANKUASA PEMETAAN DAN DATA SPATIAL NEGARA (JPDSN)

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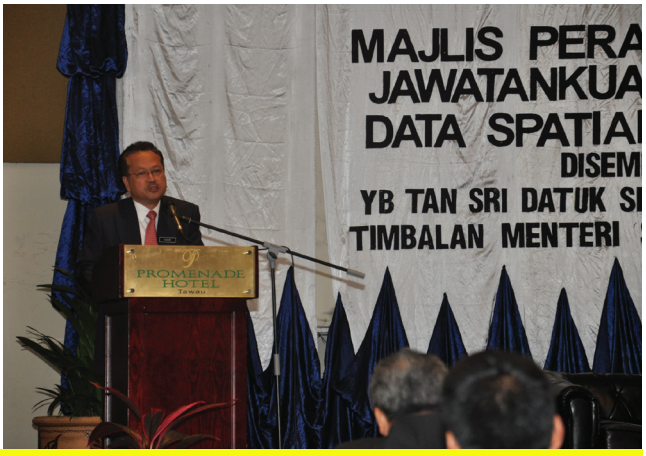

YBhg. Datuk Prof. Sr Dr. Abdul Kadir bin Taib memberi ucapan alu-aluan sempena Majlis Perasmian Mesyuarat ke-62 JPDSN

Jawatankuasa Pemetaan dan Data Spatial Negara (JPDSN) telah mengadakan mesyuarat tahunan kali ke-62 bertempat di Hotel Promenade, Tawau, Sabah pada 28-29 Mac 2011. Mesyuarat yang dipengerusikan oleh YBhg. Datuk Prof. Sr. Dr. Abdul Kadir bin Taib, Ketua Pengarah Ukur dan Pemetaan Malaysia telah dihadiri oleh ahli-ahli JPDSN dari seluruh negara yang terdiri daripada 36 wakil dari pelbagai Jabatan/Agensi Kerajaan serta Institusi Pengajian Tinggi Awam (IPTA). Timbalan Menteri Sumber Asli dan Alam Sekitar (NRE) YB Tan Sri Datuk Seri Panglima Joseph Kurup telah diberi penghormatan untuk merasmikan mesyuarat tahunan pada kali ini. Majlis dimulai dengan ucapan alu-aluan daripada Pengerusi Mesyuarat JPDSN diikuti dengan ucapan perasmian oleh YB Timbalan Menteri NRE.

Di dalam ucapan perasmian tersebut, beliau telah merakamkan perasaan bertuah dan mengucapkan terima kasih di atas kesudian pihak Jabatan Ukur dan Pemetaan Malaysia (JUPEM) menjemput beliau untuk merasmikan Mesyuarat JPDSN pada kali ini. Selanjutnya, beliau juga memaklumkan bahawa negeri Sabah mempunyai sebanyak 452 buah pulau serta 177 entiti nama geografi di pesisir pantai iaitu 43 Batuan, 43 Beting, 61 Terumbu, 11 Permatang, 12 Tompok dan 7 Alur. Dalam hal ini, negeri Sabah mempunyai paling banyak pulau serta paling banyak Batuan, Beting, Terumbu, Permatang, Tompok dan Alur di Malaysia.

Aktiviti geospatial melibatkan aktiviti berkaitan perolehan maklumat geospatial melalui kaedah terrestrial, bawah tanah, *seaborne, airborne* atau *spaceborne* yang melibatkan aktiviti penawanan, pemprosesan, penghasilan, pengemaskinian, pengintegrasian, tambah nilai, penyebaran, perkongsian, pengurusan, pengendalian, penggunaan dan penyimpanan. Data-data geospatial mempunyai nilai yang tinggi dan boleh ditambah nilai apabila ianya boleh dikongsi bersama oleh

YB Tan Sri Datuk Seri Panglima Joseph Kurup sedang memberi ucapan Perasmian Mesyuarat JPDSN ke 62 di Hotel Promenade, Tawau, Sabah

pelbagai agensi. Penggunaan secara optimum boleh dicapai melalui integrasi dan perkongsian data daripada pelbagai jenis dan sumber yang berlainan. Sumber data yang mudah dikenal pasti memudahkan pengguna memperolehi data yang relevan dengan keperluan mereka tanpa sebarang pembaziran dan pertindihan.

Selanjutnya, YB Timbalan Menteri memaklumkan pada masa kini, aktiviti geospatial dijalankan di seluruh negara oleh semua agensi persekutuan, negeri, badan berkanun, swasta, institusi pengajian tinggi dan individu. Dalam hal ini, Pekeliling Am Bilangan 1 Tahun 2007 bertajuk Pekeliling Arahan Keselamatan Terhadap Dokumen Geospatial Terperingkat yang dikeluarkan oleh Ketua Setiausaha Negara bertindak sebagai arahan keselamatan, kawalan dan penyenggaraan untuk maklumat geospatial di negara ini. Pengeluaran produk geospatial berkejituan tinggi digunakan oleh lain-lain agensi kerajaan, badan berkanun dan pihak swasta bagi tujuan pertahanan, keselamatan, perancangan pembangunan, pelancongan, pengangkutan, perniagaan, pendidikan, pertanian, mineral dan kaji bumi, bencana alam, guna tanah, penyelidikan, hartanah, infrastruktur kemudahan awam, alam sekitar serta kedaulatan negara.

Bagi maksud ini, YB Timbalan menteri mengucapkan setinggi penghargaan dan terima kasih kepada agensi kerajaan persekutuan dan negeri yang menganggotai jawatankuasa ini kerana telah melaksanakan aktiviti berkaitan geospatial seperti menawan, mengumpul serta menguruskan data geospatial untuk pembangunan serta bagi tujuan keselamatan dan kepentingan Negara. Beliau turut berbangga dengan semua jawatankuasa berkenaan yang telah melaksanakan aktiviti masing-masing demi menjayakan program yang telah ditetapkan dengan penuh komitmen.

Bagi memastikan aktiviti geospatial dapat diuruskan dengan lebih terancang sepertimana yang dilaksanakan oleh negara-negara lain, YB Dato Sri Douglas Uggah Embass, Menteri NRE, telah mengarahkan supaya satu rang undang-undang geospatial kebangsaan digubal. Lanjutan daripada itu, satu Jawatankuasa yang dipengerusikan oleh Ketua Pengarah Ukur dan Pemetaan Malaysia sedang menguruskan penggubalan rang undang-undang tersebut yang mana sehingga kini sebanyak lima mesyuarat telah pun diadakan yang melibatkan pelbagai agensi termasuklah Institusi Pengajian Tinggi yang berkaitan dengan data geospatial termasuklah pihak keselamatan seperti Polis DiRaja Malaysia, Kementerian Pertahanan dan Pejabat Ketua Pegawai Keselamatan Kerajaan Malaysia. Dengan wujudnya akta ini kelak, aktiviti geospatial negara dapat diuruskan melalui Majlis Geospatial Negara yang akan dianggotai oleh wakil Kementerian berkaitan dan wakil dari semua Kerajaan Negeri.

Dengan adanya Akta ini juga, matlamat untuk menjadikan Malaysia sebagai negara maju dengan menerapkan konsep *spatially enable government* dan *spatially enable community* melalui penggunaan data geospatial yang bersepadu dapat dicapai. Salah satu elemen penting yang menyaksikan fenomena ini berlaku dengan pantas adalah disebabkan terdapatnya maklumat geospatial yang lengkap. Sehubungan itu, maklumat geospatial membolehkan penggunaan sumber yang boleh mempengaruhi secara signifikan kepada bentuk dan budaya kehidupan manusia. Impak penggunaan maklumat geospatial ini adalah jelas sekali dalam semua aspek kehidupan semua golongan dan lapisan masyarakat.

YBhg. Datuk Ketua Pengarah Ukur dan Pemetaan Malaysia memberikan ucapan tahniah dan terima kasih sebaik sahaja YB Timbalan Menteri merasmikan mesyuarat tersebut.

Sehubungan itu, adalah menjadi harapan YB Timbalan Menteri NRE supaya peranan dan aktiviti Jawatankuasa ini mendapat kerjasama sepenuhnya daripada pegawai-pegawai kerajaan yang berkenaan dan sentiasa dipertingkatkan dengan kerjasama yang erat. Beliau berkeyakinan bahawa mesyuarat ini akan memberi sumbangan yang besar kepada pembangunan negara terutama dalam menyediakan program untuk aktiviti geospatial bagi tahun ini dan tahun-tahun akan datang.

Sementara itu, dalam ucapan pembukaan, Pengerusi Mesyuarat JPDSN ke-62 iaitu YBhg. Datuk Prof. Sr Dr. Abdul Kadir bin Taib memaklumkan bahawa mesyuarat ini antara lainnya bertujuan untuk menyelaras aktiviti-aktiviti, mengkaji serta merangka program yang berkaitan dengan pemetaan dan data spatial di seluruh negara. Beliau turut mengharapkan agar Jawatankuasa Teknikal dan

Sebahagian dari ahli mesyuarat sedang mendengar dengan penuh perhatian ucapan alu-aluan daripada Pengerusi Mesyauarat JPDSN dan ucapan perasmian dari YB Timbalan Menteri NRE

Kumpulan Kerja memainkan peranan lebih aktif dengan merancang aktiviti atau program kerjasama dalam usaha menghasilkan produk data spatial yang boleh dapat dimanfaatkan oleh pengguna.

YBhg. Datuk Pengerusi seterusnya memaklumkan bahawa JUPEM telah menyambut ulangtahun ke 125 pada 24 Oktober 2010 di mana majlis tersebut telah dirasmikan oleh Timbalan Perdana Menteri Malaysia, YAB Tan Sri Dato' Haji Muhyiddin Bin Mohd Yassin di Dewan Felda Jalan Maktab, Kuala Lumpur. Turut hadir pada hari tersebut adalah Ketua Pegawai Eksekutif Odnance Survey, United Kingdom.

Ketua Pengarah Ukur dan Pemetaan Malaysia, YBhg. Datuk Prof. Sr Dr. Abdul Kadir bin Taib mempengerusikan Mesyuarat JPDSN ke-62 di Hotel Promenade, Tawau, Sabah baru-baru ini

YBhg. Datuk Pengerusi seterusnya memaklumkan bahawa Malaysia telah dipilih menjadi Pengerusi baru bagi *Asia South-East and Pacific South-West* (ASEPSW), *United Nations Group of Experts on Geographical Name* (UNGEGN) bagi tempoh 2010 sehingga 2015 semasa *17th Division Meeting Asia South-East and Pacific South-West* (ASEPSW) yang telah diadakan pada 10 April 2010 di Sydney, Australia.

Lanjutan daripada itu, Mesyuarat *Asia South-East and Pacific South-West* (ASEPSW), UNGEGN dan Seminar Berkaitan Nama-Nama Geografi telah pun di adakan pada 21-22 Februari

2011 di Hotel Crowne Plaza Mutiara, Kuala Lumpur. Negara-negara luar termasuk Brunei Darussalam, Singapura, Indonesia dan Filipina telah menghantar peserta untuk menghadiri mesyuarat dan seminar tersebut.

YBhg. Datuk Pengerusi turut menyentuh beberapa perkara berhubung dengan program pemetaan yang telah dilaksanakan oleh JUPEM bagi Rancangan Malaysia Ke-9 (RMK9) dalam tahun 2010 yang merupakan tahun terakhir bagi projek RMK9. Projek yang dimaksudkan adalah Perisian Sistem *Islamic Astronomy Software (i-astrosoft)*, Projek Makmal Kalibrasi Ukur Aras dan Projek Penyenggaraan Stesen Penyegitigaan Timbalai, Labuan. Kesemua projek-projek yang dirancang telah disiapkan sepenuhnya dalam tahun 2010 mengikut jadual yang ditetapkan. Projek-projek yang dimaksudkan telah dimanfaatkan oleh JUPEM dan pihak-pihak yang berkaitan seperti Institusi Pengajian Tinggi, Juruukur Tanah Berlesen, pemaju dan orang awam.

Manakala untuk perancangan tahun 2011, YBhg. Datuk Pengerusi memaklumkan JUPEM telah membuat persediaan bagi merangka strategi-strategi untuk meningkatkan produktiviti dan kualiti serta mempelbagaikan pengeluaran produk-produk pemetaan melalui projek-projek pembangunan RMK10. Untuk itu Kerajaan meluluskan empat (4) projek bagi JUPEM iaitu :

i. e-Pemetaan melibatkan sewaan pesawat untuk perolehan data bawaan udara (RM11juta);
ii. Projek Penentuan dan Pengukuran Sempadan Antarabangsa (Darat & Maritim) Malaysia dengan Negara Jiran (RM15 juta);
iii. *Multipurpose Cadastre* bagi memantapkan Pangkalan Data Ukur Kadaster (RM30 juta); dan
iv. Projek ICT *Enterprise Integrated System* bagi memantapkan Sistem Geoportal JUPEM dan Sistem Emel (RM 5 juta)

Ahli mesyuarat sedang memberi tumpuan semasa mesyuarat

YBhg. Datuk Pengerusi seterusnya memaklumkan JUPEM telah memohon projek penting yang tidak diluluskan sebelum ini di dalam permohonan *Rolling Plan* bagi Projek Pembangunan Ke-10. Antaranya ialah Projek *Marine Geodetic Infrastructures in Malaysian Waters (MAGIC)*, Pemetaan 3D Negeri Sarawak dengan kaedah *Airborne Interferometric Synthetic Aperture RADAR (IFSAR)*, Perolehan Sistem Kamera Udara Digital, Sistem Pengautomasian Proses Kerja Topografi Untuk Pemetaan Fasa III bagi Seksyen Topografi Semenanjung, Sabah dan Sarawak (CATMAPS) dan Peningkatan Sistem Penerbitan Peta JUPEM.

Melalui cadangan pelaksanaan Projek *Rolling Plan* ini beberapa faedah yang akan diperolehi di mana JUPEM dapat merealisasikan hasrat untuk menjadi organisasi yang mampu menyalurkan perkhidmatannya melalui sistem penyampaian yang memenuhi keperluan *Spatial Enabled Government (SEG)* kepada semua peringkat pengguna samada di sektor awam, swasta, komuniti tertentu mahupun orang ramai.

Wakil dari ARSM iaitu Timbalan Ketua Pengarah, Tn. Hj. Mansor bin Abd. Rahman (Tengah) sedang memberi tumpuan ketika mesyuarat berlangsung

Antara agenda dalam mesyuarat ini adalah pembentangan laporan daripada Jawatankuasa-jawatankuasa Teknikal dan Kumpulan Kerja Geodetik, pembentangan laporan aktiviti jabatan-jabatan/agensi-agensi dan juga pembentangan kertas kerja. Jawatankuasa Teknikal Atlas Kebangsaan yang ditubuhkan pada mesyuarat yang lalu telah menyampaikan laporan kemajuan pertama jawatankuasa tersebut. Dalam pada itu itu juga wakil dari Agensi Remote Sensing Malaysia (ARSM) iaitu Timbalan Ketua Pengarah, Tuan Hj. Mansor bin Abd. Rahman, menyatakan bahawa mesyuarat pada kali ini merupakan mesyuarat yang terakhir yang dihadiri beliau kerana akan bersara pada penghujung tahun ini. Beliau yang telah mengikuti perkembangan Mesyuarat JPDSN ini lebih dari satu dekad berharap supaya semua pihak memberikan perhatian dan komitmen yang penuh dalam meningkat kemajuan pemetaan negara.

Semasa pembentangan laporan, kebanyakan agensi memaklumkan bahawa tiada peruntukan untuk perolehan data-data pemetaan dan data spatial seperti penerbangan udara, *remote sensing,* IFSAR, foto udara dan lain-lain perkara yang berkaitan pemetaan. YBhg. Datuk Pengerusi memberi penekanan bahawa ini merupakan satu perkara yang serius kerana kesemua perkara yang dimaksudkan itu adalah merupakan *core business* jabatan dalam melaksanakan pekerjaan harian yang akan menghasilkan produk pemetaan negara. Beliau mengesyorkan supaya jabatan yang berkaitan membuat permohonan rayuan dengan memberikan penekanan terhadap kesan daripada kegagalan perolehan data-data tersebut. Di samping itu, semua Jabatan/Agensi yang

berkaitan dengan pemetaan seharusnya peka kepada seruan kerajaan dalam mempertingkatkan sistem penyampaian perkhidmatan awam yang berkesan dengan penerbitan peta yang produktif dan berkualiti.

Sesi fotografi ahli-ahli mesyuarat bersama YB Timbalan Menteri NRE, Tan Sri Datuk Seri Panglima Joseph Kurup

Hasil daripada mesyuarat JPDSN Ke-62 ini, dapatlah dirumuskan bahawa JPDSN berfungsi sebagai satu platform yang efektif dalam merancang dan menjalankan aktiviti pemetaan dan data spatial negara agar kerja-kerja pemetaan yang produktif dan berkualiti dapat dihasilkan. Jawatankuasa-jawatankuasa Teknikal adalah disarankan bermesyuarat dan berbincang dengan lebih kerap untuk menghasilkan resolusi yang boleh dijadikan dasar bagi diguna pakai oleh ahli-ahli JPDSN. Agensi di bawah JPDSN mengambil kesempatan yang sedia ada untuk menggunakan data-data geospatial dengan sebaik mungkin dalam program perancangan pembangunan untuk kebaikan negara kita.

LAPORAN BERGAMBAR

SEMINAR NAMA GEOGRAFI PERINGKAT NEGERI SABAH

Nornisha binti Ishak
Seksyen Perkhidmatan Pemetaan
Jabatan Ukur dan Pemetaan Malaysia
nornisha@jupem.gov.my

Seminar Nama Geografi Peringkat Negeri Sabah telah dirasmikan oleh YB Tan Sri Datuk Seri Panglima Joseph Kurup, Timbalan Menteri Sumber Asli dan Alam Sekitar pada 11 April 2011 bertempat di Hotel Le Meridien Kota Kinabalu, Sabah.

YB Tan Sri Datuk Seri Panglima Joseph Kurup, Timbalan Menteri Sumber Asli dan Alam Sekitar merasmikan seminar serta menerima cenderahati daripada Sr Ahmad Fauzi bin Nordin, Timbalan Ketua Pengarah Ukur dan Pemetaan I (TKPUP I)

Seminar berkenaan diadakan susulan daripada *Seminar on Geographical Names* yang telah diadakan di Kuala Lumpur pada 21 Februari 2011 yang telah mencetuskan minat yang tinggi di kalangan masyarakat khususnya di Negeri Sabah. Semasa seminar di Kuala Lumpur, YB Tan Sri Datuk Seri Panglima Joseph Kurup memaklumkan bahawa sebanyak 236 buah pulau perlu dinamakan dan kesemua pulau tersebut terletak di Negeri Sabah. Kenyataan berkenaan telah mendapat liputan meluas oleh media di Sabah.

Kenyataan akhbar yang menunjukkan keprihatinan rakyat Sabah dalam penamaan geografi khususnya bagi pulau-pulau di Sabah

Daily Express
Sandakan Office
2nd Floor, Block 16,
Jalan Pryer, Sandakan,
Sabah
TEL: 089-217204
019-8137204
FAX: 089-215262

Kadazandusun

KALATAS ABAL KABANSAAN MINSOSONDII DO KOHISAON MALAYSIA

Daily Express, MADSA (TUESDAY), Ko-22, MANSAK (FEBRUARY) 2011

236 pulou id M'sia aiso ngaan - Kurup

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RM1 Koisaa

Kurup

Daily Express

Local

TUESDAY, 22ND FEBRUARY, 2011

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Labuan's results

Assert sovereignty over 236 islands without names: Kurup

SELASA, 22HB FEBRUARI, 2011 2

ikol Lebih selesa

Dari Muka Depan

236 pulau di Malaysia perlu segera diberi nama: Kurup

Sabah's First Established Paper

Number 16597 Tuesday February 22, 2011

PPH 223/04/2010(023855) Sabah RM1.20

236 ISLANDS STILL UNNAMED

Kurup: Most of these islands are in Sabah

SEMASA

New Sabah Times

Jabatan Pelajaran Sabah kemuka permohonan agar guru sandaran dapat dilatih

236 pulau di Malaysia belum ada nama: Kurup

Dianggarkan seramai 130 peserta yang terdiri daripada ADUN-ADUN, Ahli-ahli Parlimen, pihak-pihak berkuasa tempatan, pegawai-pegawai daerah, jabatan / agensi tempatan serta ahli-ahli Jawatankuasa Pemandu Nama Geografi Negeri Sabah dan pihak-pihak yang terlibat dengan aktiviti penamaan geografi telah menghadiri seminar tersebut.

Peserta seminar semasa pendaftaran dan pembentangan kertas kerja oleh penceramah

Pembentang-pembentang kertas kerja menjawab soalan-soalan yang diajukan oleh peserta

Seminar berkenaan diadakan khusus untuk rakyat Sabah. Justeru itu, pembentangan kertas-kertas kerja juga lebih ditumpukan kepada aktiviti penamaan geografi di Sabah. Melalui kertas-kertas kerja yang telah dibentangkan, ianya telah memberi peluang kepada peserta seminar untuk bertukar pendapat dan pandangan serta pengalaman dalam penamaan geografi. Berikut merupakan kertas-kertas kerja yang telah dibentangkan semasa Seminar Nama Geografi Peringkat Negeri Sabah:

Kertas 1 :	Status Kerja Jawatankuasa Pemandu Nama Geografi Negeri Sabah
Kertas 2 :	Faktor Bahasa dan Sejarah Tempatan Dalam Penamaan Lokasi Geografi-Kes Sungai Kinabatangan, Gunung Kinabalu dan Simpang Mengayau
Kertas 3 :	Garis Panduan Penentuan Nama Geografi
Kertas 4 :	Pangkalan Data Nama Geografi dan Gazetir Kebangsaan
Kertas 5 :	Penamaan Pulau-Pulau dan Entiti Geografi Luar Pesisir
Kertas 6 :	Toponimi

Rakyat Sabah yang terdiri daripada berbilang kaum kelihatan tertarik dengan aktiviti penamaan geografi. Antara kertas kerja yang telah menarik minat peserta seminar ialah kertas kerja yang dibentangkan oleh Dr. Paul Porodong daripada Universiti Malaysia Sabah berkenaan "Faktor Bahasa dan Sejarah Tempatan Dalam Penamaan Lokasi Geografi – Kes Sungai Kinabatangan, Gunung Kinabalu dan Simpang Mengayau". Beliau telah memberikan beberapa contoh-contoh serta fakta-fakta sejarah yang menarik minat peserta untuk mendengarnya. Di samping itu, soalan-soalan yang diajukan oleh peserta terutamanya daripada ADUN-ADUN serta Ahli-ahli Parlimen yang hadir turut memeriahkan sesi soal jawab yang dipengerusikan oleh Sr Hj. Safar bin Untong daripada Jabatan Tanah dan Ukur Sabah.

YB Tan Sri beramah mesra dengan peserta seminar serta melawat ruang pameran sambil diiringi oleh TKPUP I dan Sr Mohammadd Zaki bin Mohd Ghazali, Timbalan Pengarah Ukur Sabah

Melalui seminar yang telah diadakan, peserta-peserta tempatan telah didedahkan mengenai pentingnya penamaan geografi yang seragam. Selain itu, peserta juga dapat berkongsi pengalaman dan pengetahuan dalam memastikan aktiviti penamaan geografi di Malaysia khususnya bagi Negeri Sabah dapat berjalan dengan lancar dan jayanya. Sesungguhnya, nama geografi yang seragam dapat menjadi identiti dan menyerlahkan budaya, warisan dan landskap sesebuah negara.

KALENDER GIS 2011

TARIKH	TAJUK	LOKASI	PENGANJUR	TALIAN PERTANYAAN
21 - 22 Feb 2011	*Seminar on Geographical Names and 18th Divisional Meeting United Nations Group of Experts on Geographical Names, Asia South East and Pacific South West (UNGEGN ASEPSW)*	Hotel Crowne Plaza Mutiara, Kuala Lumpur	JUPEM	Encik Ng Eng Guan Tel : +603-2617 0831 Fax : +603-2697 0140 E-mail : ng@jupem.gov.my
28 – 29 Mac 2011	Mesyuarat Jawatankuasa Pemetaan dan Data Spatial Negara (JPDSN) ke 61	Hotel Promenade Tawau, Sabah	Bahagian Pemetaan, JUPEM	Encik Ng Eng Guan Tel : +603-2617 0831 Fax : +603-2697 0140 E-mail : ng@jupem.gov.my
11 April 2011	Seminar Nama Geografi Peringkat Negeri Sabah	Hotel Le Meridien Kota Kinabalu, Sabah	JUPEM	Encik Ng Eng Guan Tel : +603-2617 0831 Fax : +603-2697 0140 E-mail : ng@jupem.gov.my
22 – 24 Jun 2011	*11th South East Asian Survey Congress & 13th International Surveyors' Congress 2011*	PWTC, Kuala Lumpur	ISM	The Institution Of Surveyors, Malaysia Tel : +603-7954 8358/ 7955 1773 Fax : +603-7955 0253 E-mail : secretariat@ism.org.my
29 Jun 2011	Jawatankuasa Teknikal Nama Geografi Kebangsaan (JTNGK)	Johor Bahru, Johor	JUPEM	Encik Ng Eng Guan Tel : +603-2617 0831 Fax : +603-2697 0140 E-mail : ng@jupem.gov.my
November 2011	Jawatankuasa Kebangsaan Nama Geografi (JKNG)	Belum ditentukan	Bahagian Pemetaan, JUPEM	Encik Ng Eng Guan Tel : +603-2617 0831 Fax : +603-2697 0140 E-mail : ng@jupem.gov.my

SUMBANGAN ARTIKEL/ CALL FOR PAPER

Buletin GIS diterbitkan dua (2) kali setahun oleh Jawatankuasa Pemetaan dan Data Spatial Negara. Sidang Pengarang amat mengalu-alukan sumbangan sama ada berbentuk artikel atau laporan bergambar mengenai perkembangan Sistem Maklumat Geografi di Agensi Kerajaan, Badan Berkanun dan Institusi Pengajian Tinggi.

Panduan Untuk Penulis

1. Manuskrip boleh ditulis dalam Bahasa Malaysia atau Bahasa Inggeris
2. Setiap artikel yang mempunyai abstrak mestilah condong (*italic*).
3. Format manuskrip adalah seperti berikut:

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Saiz huruf rujukan/*references*	: 8
Langkau (isi kandungan)	: 1.5
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Satu '*column*' setiap muka surat

4. Sumbangan hendaklah dikemukakan dalam bentuk softcopy dalam format Microsoft Word. Semua imej grafik hendaklah dibekalkan secara berasingan dalam format .tif atau .jpg dengan resolusi 150 dpi dan ke atas.
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