

الجامعة الإسلامية العالمية ماليزيا
INTERNATIONAL ISLAMIC UNIVERSITY MALAYSIA
وَنَبْرِينَعِي إِسْلَامًا وَنَبْرِينَعِي مَالِيْسِيَا

CONFIDENTIAL

RESEARCH MANAGEMENT CENTRE
Innovation and Commercialization Office
Tel: 03-6196 5005 / 5022 Fax: 03-6196 4862

**COPYRIGHT DISCLOSURE
FORM**

Kindly disclose your invention through this IP Disclosure Form for IP Protection and Registration.

PART 1: IDENTIFICATION

1. Principal Inventor Identification

NAME OF PRINCIPAL INVENTOR	Associate Professor Dr M. Zainora Asmawi
IC / PASSPORT NO.	700103-10-5188
DEPARTMENT / KULLIYAH	Department of Urban and Regional Planning, Kulliyah of Architecture and Environmental Design, International Islamic University Malaysia, Gombak, Selangor.
CORRESPONDENCE ADDRESS	Department of Urban and Regional Planning, Kulliyah of Architecture and Environmental Design, International Islamic University Malaysia, Gombak, Selangor.
EMAIL	Zainora@iium.edu.my
TELEPHONE NO.	012-2286131

Please state the details of the inventor / originator and any of the co-inventor(s) in Attachment 1.

Intellectual Property	Sub Type
<input type="checkbox"/> Copyright	<input type="checkbox"/> Literary <input type="checkbox"/> Musical <input type="checkbox"/> Artistic <input type="checkbox"/> Film <input type="checkbox"/> Sound <input type="checkbox"/> / Others

PART 2: DESCRIPTION OF DISCLOSURE

1. Title of disclosure

Model Analisis Tahap Rentan Kawasan Banjir untuk Lembangan Sungai Pahang

(An analysis model for flood susceptibility areas in Sg Pahang river basin)

2. **Brief Description of the Disclosure**

This model was developed using ArchGIS system to study on the flood susceptibility area in the catchment of Sg Pahang river basin. It was designed by using five factors that was defined from literature review; (topographic & DEM, slope, land use, distance from the river and ARI for flood). All of these factors are processed using weightage to prepare a susceptibility map for Sg Pahang river basin.

3. **Objective of the Disclosure**

1. To arrange relevant criteria in analysing the flood issue in Sg Pahang river basin.
2. To produce a GIS analysis model for flood susceptibility area in Sg Pahang river basin.

4. **Please attach the document below**

 /

Detail backgrounds, description, and the document file.

 /

The originality report by plagiarism software (Turnitin) for manuscript (A must for Copyright Disclosure - only originality report with green range (1-24%) will be considered)

 /

Please attach form CR-1, filling up the form Applicant, Section A, Section B, Section C. Please fill up multiple Section C if there is more than 1 author for the copyright

PART 3: SOURCE OF RESEARCH PROJECT(S) RESULTING TO THIS DISCLOSURE

1. **Funded Project**

Fund Type	Project Code	Start / End	Fund Amount	Fund Allocation of IP
NIL				

2. **Obligation to Funded Project**

Do you have any obligation to the funded project eg. Disclosure of IP, commercial grant of rights (option/license) ?

Yes

 /

No

Please specify any obligation to the funder

NIL _____

3. **Project Cost Estimation**

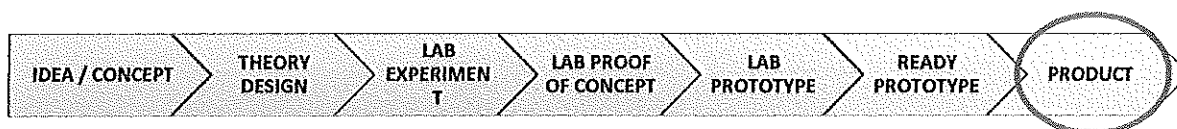
Please estimate the cost leading to the invention (please refer to Attachment 6 for the sample data)

Vote	Items Details	Estimated Cost (RM)	Source of Fund	Notes
Wages / Cost of RA				

Vote	Items Details	Estimated Cost (RM)	Source of Fund	Notes
Wages / Cost of RA				
Travel and Transportation				
Rentals				
Research Materials Supplies				
Modifications and Repairs				
Special Services				
Equipment and Accessories				
Total				

PART 5: COMMERCIAL POTENTIAL

1. Please circle the stage of the disclosure



2. Can this invention be exploited for commercialization directly, or does it need further development?

No.

3. If there is commercial potential, please do initial competitor analysis as per Attachment 3.

Attachment 3 Initial Competitor Analysis

4. Please state if there is any inquiry on the Invention from the industry.

Yes No

If yes, please specify and state name of the interested party.

NIL _____

PART 6: DECLARATION AND RECOMMENDATION

DECLARATION

 /

I have discussed this intellectual property with the Head of Research representative for my Kulliyah

 /

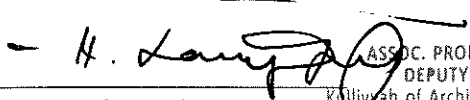
I have discussed the content of this intellectual property disclosure and obtained consent for its submission with my co-inventor/s and co-contributor/s

 /

I understand that the assignment of the Intellectual Property Right to International Islamic University shall follow IIUM Policies and Guidelines for Intellectual Property Rights and Commercialization

 /

I promise to work with RMC / assigned expert / agents to complete the full registration of my intellectual property



ASSOC. PROF. Tpr Dr M. Zainora Asmawi
DEPUTY DEAN (POSTGRADUATE)
Kulliyah of Architecture and Environmental Design
International Islamic University Malaysia

Signature of Principle Inventor

8/3/18

Date authority

RECOMMENDATION OF THE DEPARTMENT



ASSOC. PROF. DR. AZILA AHMAD SARKAWI
HEAD OF DEPARTMENT

Department of Urban and Regional Planning
Signature and name of the approving
Kulliyah of Architecture and Environmental Design

8.3.2018

Date authority

RECOMMENDATION OF THE KULLIYAH



PROF. Ar. Dr. ABDUL BAZAK SAPIHAN
DEAN

Kulliyah of Architecture and Environmental Design
International Islamic University Malaysia

26.3.18

Signature and name of the approving

Date authority

Attachment 1: List of Inventors and Co-Inventors

Name	Department / Kuliyah	Type	No. of Man Hour Spent	Contribution %	IC / Passport No.	Address	Tel/No
M. Zainora Asmawi,	Department of Urban and Regional Planning, Kuliyah of Architecture and Environmental Design	IUM Staff (DS54)	30 man-hour	70%	700103-10- 5188	Department of Urban and Regional Planning, Kuliyah of Architecture and Environmental Design	0122286131
Illyani Ibrahim	Department of Urban and Regional Planning, Kuliyah of Architecture and Environmental Design	IUM Staff (DS51)	15 man-hour	30%	810425125242	Department of Urban and Regional Planning, Kuliyah of Architecture and Environmental Design	0166517821
Total				100%			

Attachment 3: Competitor Analysis

Only for invention that has potential commercialization

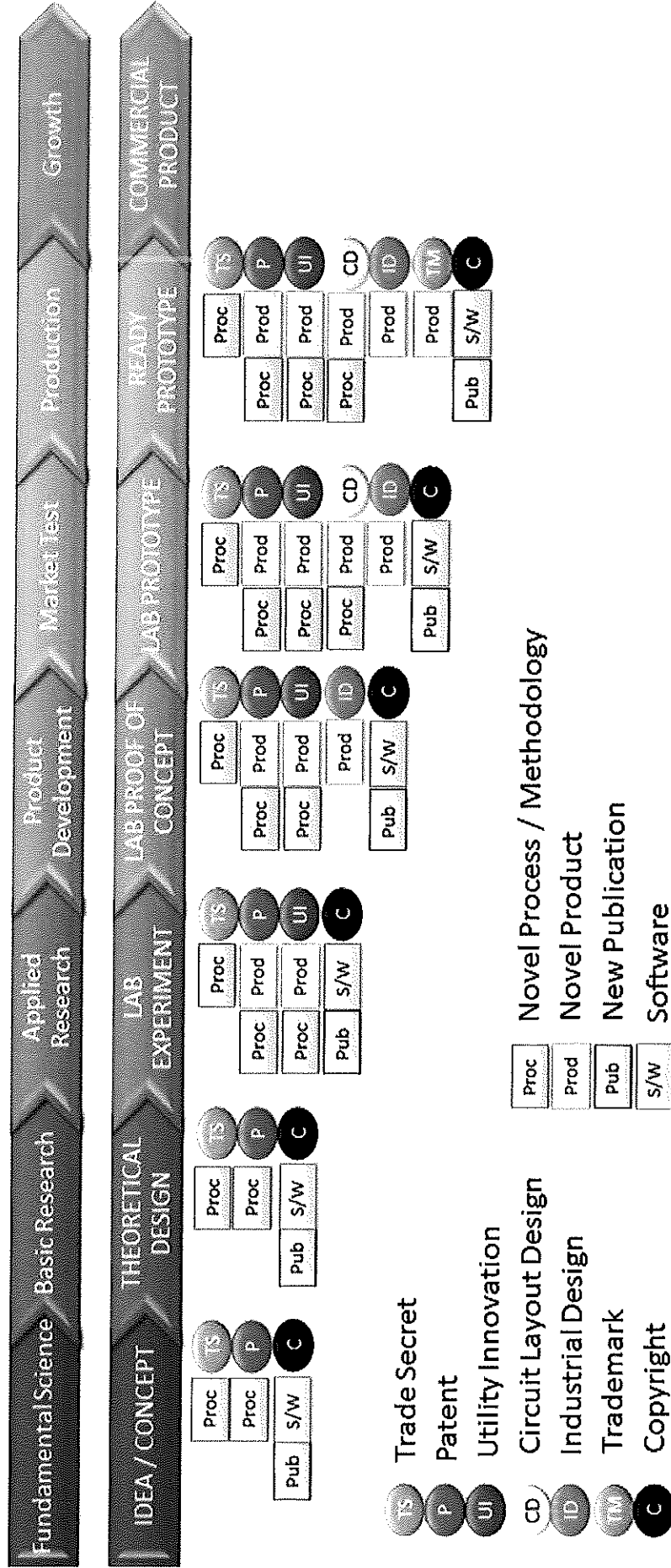
Product Name	Manufacturer / Producer	Model	Competitor Price	Product attributes	Comparison to the disclosed IP

Attachment 4: Definition of IPR

Type of IPR	Definition	Duration of Protection	Notes
Copyright	Copyright is the exclusive right to control creative works created by the author, copyright owner and performer for a specific period governed under the Copyright Act 1987.	Literary, Musical or Artistic Works Generally, - 50 years after the death. Film, Sound Recordings and Performer 50 years from the work was published Broadcasts 50 from the which the broadcasts was first made.	<p>WORKS ELIGIBLE FOR COPYRIGHT</p> <ul style="list-style-type: none"> • literary works; • musical works; • artistic works; • films; • sound recordings; • broadcasts; and • derivative works

Attachment 5: IIUM Guideline for Intellectual Property Disclosure at various stage of R&D&C&I

Please note that the graphical diagram is only a guideline of the stage to disclose Intellectual Property at IIUM. Actual disclosures and filing of intellectual properties can occur at any of the stage



Technology Readiness Level

TRL		Description
1	Ideation	Basic Principles are observed and reported
2.	Innovation begins	Basic principles observed so practical applications can be formulated
3.	Proof of Concept	Analytical and laboratory studies are required to see if the technology is viable
4.	Component Test	Laboratory testing of the prototype component
5.	Prototype construction	Laboratory testing of the integrated system
6.	Alpha Testing	Prototype system demonstrated in an operational environment
7	Beta Testing	Completed design tested in real environment
8.	Certification	Proven to work under its expected conditions and certified to be used
9	System Proven to be successfully function	Ready for commercial deployment
9+	Product is launched commercially	

TPM Definition of TRL

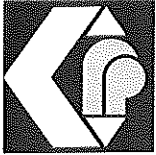
<https://www.youtube.com/watch?v=in4TnQZGYj4>

Attachment 6: Sample Cost Estimation

Project Cost Estimation

Please estimate the cost leading to the invention (*please use the example below*)

Vote	Items Details	Estimated Cost (RM)	Source of Fund	Notes
V11000	Wages			
V21000	Travel and Transportation			
V24000	Rentals			
V26000	Research Materials and Supplies			
V28000	Modifications and Repairs			
V29000	Special Services			
V35000	Equipment and Accessories			
Total				



INTELLECTUAL PROPERTY CORPORATION OF MALAYSIA
 An agency under the Ministry of Domestic Trade, Co-Operatives and Consumerism
COPYRIGHT ACT 1987
NOTIFICATION OF WORKS
 [subregulation 5(2) and 5(3)]



CR - 1

Application No :

Applicant :

Owner Author Licensee

Title of work (Original language) : | KERANGKA MODEL ANALISIS TAHAP RENTAN KAWASAN BANJIR UNTUK LEMBANGAN SUNGAI PAHANG |

Translation : | A MODEL FRAMEWORK FOR FLOOD SUSCEPTIBILITY AREAS IN RIVERBASIN SUNGAI PAHANG |

Transliteration : | |

Name of the Language (*Language that been used in the work) : | MALAY |

If published in a periodical or serial (Literary Work) : | | | | |
 (Volume / Number) (Issue Date) (On Pages)

Section A : Category of Works

Literary Musical Artistic Film Sound Recording

Date of Fixation / First Published / Erected / Incorporated : | 1 | / | 7 | / | 2017 |

Section B : Publication

The Work is : Published Unpublished

If published : | | | / | | | / | | | | |
 (Year of Compilation) (Date of first publication) (Country)

Section C : Author (If author is "same as owner" go to Part D - if more than one author, please attach a list of names and addresses of all the author)

Name : | M.ZAINORA ASMAWI |

National Identification No. / Passport No. : | 700103 10 5188 |

Address 1 : | INTERNATIONAL ISLAMIC UNIVERSITY MALAYSIA |

Address 2 : | DEPARTMENT OF URBAN AND REGIONAL PLANNING, KULLIYAH OF ARCHITECTURE AND ENVIRONMENTAL DESIGN, IJUM |

Address 3 : | |

Postcode : | 53100 | City : | GOMBAK | Nationality : | MALAYSIAN |

State : | SELANGOR | Country : | MALAYSIA |

Telephone No. : | +60 12-228 6131 | E-mail : | zainora@ijum.edu.my | *Date of Death : | | / | | / | |

Fax No. : | 03 61964864 |

* Please state whichever applicable

Section C : Author (If author is "same as owner" go to Part D - if more than one author, please attach a list of names and addresses of all the author)

Name	:	ILLYANI BT IBRAHIM				
National Identification No. / Passport No.	:					
Address 1	:	INTERNATIONAL ISLAMIC UNIVERSITY MALAYSIA				
Address 2	:					
Address 3	:					
Postcode	:	53100	City :	GOMBAK	Nationality :	MALYSIAN
State	:	SELANGOR	Country :	MALAYSIA		
Telephone No.	:	016-6517821	E-mail :	illyani_i@ium.edu.my	*Date of Death :	/ /
Fax No.	:					

* Please state whichever applicable

Section D : Owner (If more than one owner, please use the attachment)

Please tick (✓) if Owner is same as Author

*Name : | _____ |

*National Identification No. : | _____ |
/ Passport No.

*Company Name : | _____ |

*Company Registration No. : | _____ |

Address 1 : | _____ |

Address 2 : | _____ |

Address 3 : | _____ |

Postcode : | _____ | City : | _____ | Nationality : | _____ |

State : | _____ | Country : | _____ |

Telephone No. : | _____ | E-mail : | _____ | Fax No. : | _____ |

Section E : Licensee (Section D must be fill in)

*Name : | _____ |

*National Identification No. : | _____ |
/ Passport No.

*Company Name : | _____ |

*Company Registration No. : | _____ |

Address 1 : | _____ |

Address 2 : | _____ |

Address 3 : | _____ |

Postcode : | _____ | City : | _____ | Nationality : | _____ |

State : | _____ | Country : | _____ |

Telephone No. : | _____ | E-mail : | _____ | Fax No. : | _____ |

Date of Agreement : |__|/|__|/|__|

Period of Agreement : |__|/|__|/|__| until |__|/|__|/|__|

Please provide copy of agreement(s)

* Please state whichever applicable

Section F : Contact Person

Name : _____

National Identification No. : _____
/ Passport No.

*Company Name : _____

*Company Registration No. : _____

Address 1 : _____

Address 2 : _____

Address 3 : _____

Postcode : _____ City : _____ Nationality : _____

State : _____ Country : _____

Telephone No. : _____ E-mail : _____ Fax No. : _____

Section G : Declaration

I hereby granted my works to be viewed by public for research and educational purpose : Yes No

- Author of the work
- Owner of the copyright in the work
- Licensee of copyright the work (Please provide adequate related document(s))

Signature,

(.....)
Name : _____
Date (dd/mm/yy) : _____

Section H : Official Use

Payment Received

Acknowledged by,

(.....)
Officer's Name : _____
Date (dd/mm/yy) : _____

** Please state whichever applicable*

All correspondence should be addressed to :

Copyright Division,
Intellectual Property Corporation of Malaysia (MyIPO)
Unit 1-7 & Mezzanine, Aras 12-19
Tower B, Menara UOA Bangsar,
No. 5 Jalan Bangsar Utama 1,
59000 Kuala Lumpur.

Telephone : +603 - 2299 8400
Fax : +603 - 2299 8989
Website : <http://www.myipo.gov.my>
E-Mail : infocopyright@myipo.gov.my

Tahap kerentanan (*susceptibility*) yang bermaksud 'kawasan yang mudah terkena banjir' melibatkan faktor-faktor iklim, geografi, guna tanah, sistem pengairan semulajadi, taburan hujan dan sebagainya. Gabungan faktor-faktor ini menghasilkan kawasan yang mudah berlaku bencana banjir di mana kerja pemetaan akan membantu di dalam perancangan bersepadu guna tanah di Lembangan Sungai Pahang.

Penggunaan teknik analisis melalui model lapisan tematik (*thematic layers modelling*) yang mengandungi sistem pembahagian pemberat (*weightage*) untuk setiap faktor bagi mengenalpasti tahap kerentanan banjir melalui perisian komputer ArchGIS. Analisis untuk mengenalpasti kawasan yang mengalami kerentanan bencana banjir ini mengambil kira lima (5) faktor dalam bentuk *input data* peta tapisan (Jadual 5-9).

No	Faktor	Keterangan
1	Keadaan Topografi & Digital Elevation Model (DEM)	<ul style="list-style-type: none"> ☞ Tarikan graviti menyebabkan air mengalir dari kawasan tinggi ke kawasan rendah ☞ Kawasan barat dan utara merupakan kawasan bertanah tinggi di mana ia menyebabkan aliran air bermula dari bahagian ini menuju ke bahagian timur dan selatan Negeri Pahang
2	Kelas Kecerunan	<ul style="list-style-type: none"> ☞ Faktor kecerunan menghasilkan kadar kelajuan curahan air hujan ke kawasan rendah ☞ Lebih tinggi kadar kecerunan, tahap kerentanan kepada potensi berlaku banjir adalah rendah
3	Jenis Guna Tanah Semasa (2015)	<ul style="list-style-type: none"> ☞ Kawasan tepu bina yang kurang mesra alam tidak dapat menyerap air larian sebaliknya ia menyimpan air seumpama tempat takungan ☞ Guna tanah seperti kawasan perhutanan, pertanian, kawasan lapang/padang atau badan air yang dapat menampung lebihan air larian atau air limpahan dari sungai ☞ Kawasan tepu bina mempunyai tahap kerentanan yang rendah
4	Jarak Kawasan Dari Tebing Sungai	<ul style="list-style-type: none"> ☞ Kawasan hilir Sungai Pahang seperti Bandar Pekan menampung kesemua bebanan muatan air yang datang dari hulu sungai ☞ Sekiranya jumlah air ini melebihi kapasiti sungai, maka limpahan air dari tebing sungai akan berlaku yang mengakibatkan kejadian banjir di kawasan yang berhampiran dengan tebing sungai
5	Kawasan Banjir ARI 1 Tahun dan ARI 100 Tahun	<ul style="list-style-type: none"> ☞ ARI untuk banjir tahunan melibatkan kawasan yang lebih kecil berbanding dengan ARI 100 tahun di mana kawasan yang mengalami banjir tahunan memerlukan kerja-kerja tebatan banjir yang segera

Jadual 5-9: Faktor Yang Terlibat Dalam Analisis Kerentanan Banjir
 Sumber: Laporan Pemeriksaan Rancangan Struktur Negeri Pahang 2050 (Kajian Semula)

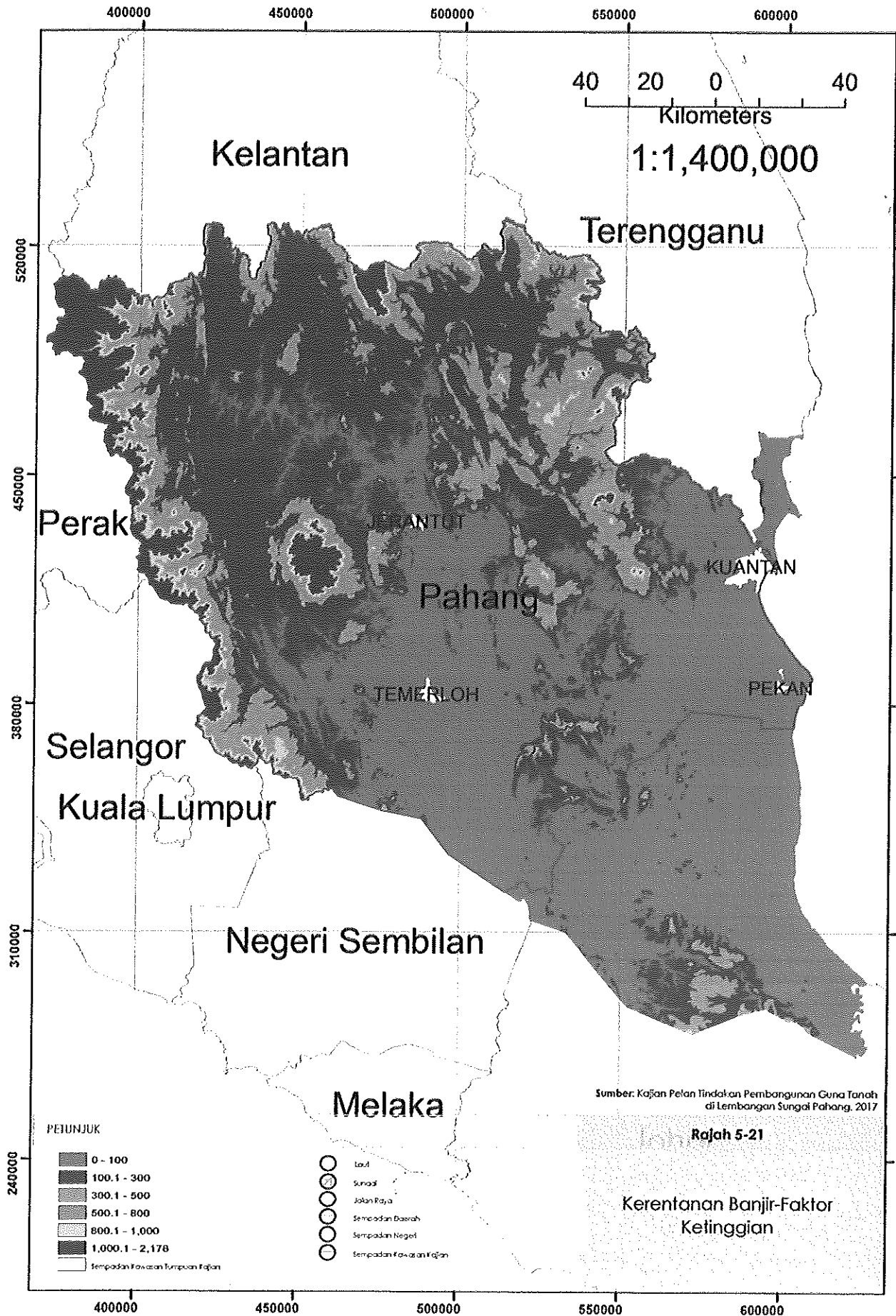
Setiap faktor yang diambil kira perlu digabungkan untuk menghasilkan peta tahap keterdedahan risiko bencana banjir di mana ianya mempunyai tahap terdedah yang merujuk kepada julat bacaan tertentu,

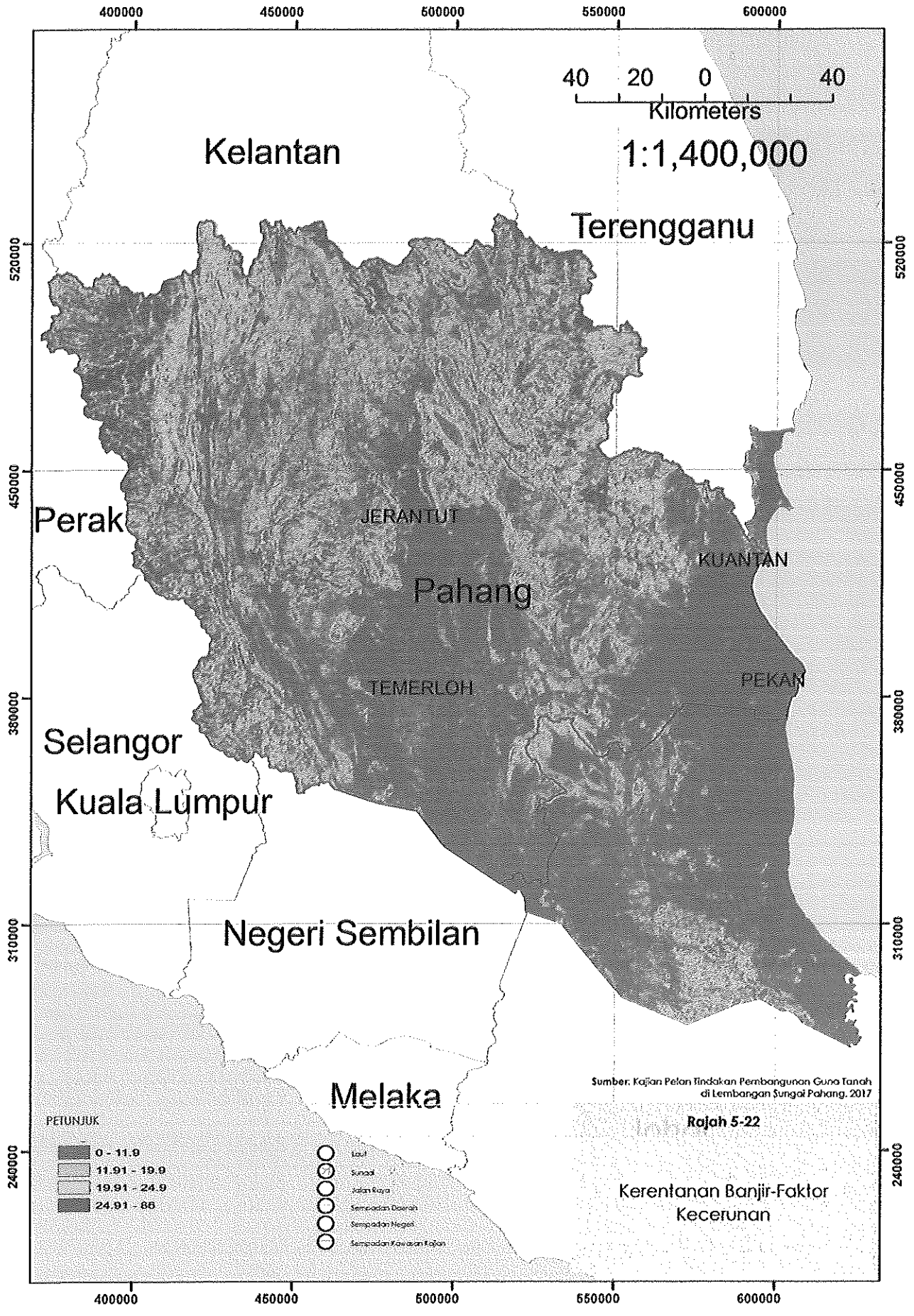
bergantung kepada sifat faktor tersebut (Jadual 5-10). Rajah 5-21 hingga 5-24 menunjukkan hasil pemetaan bagi setiap faktor banjir sebelum digabung secara proses tematik untuk menjana taburan kawasan yang rentan banjir menurut tahap berbeza.

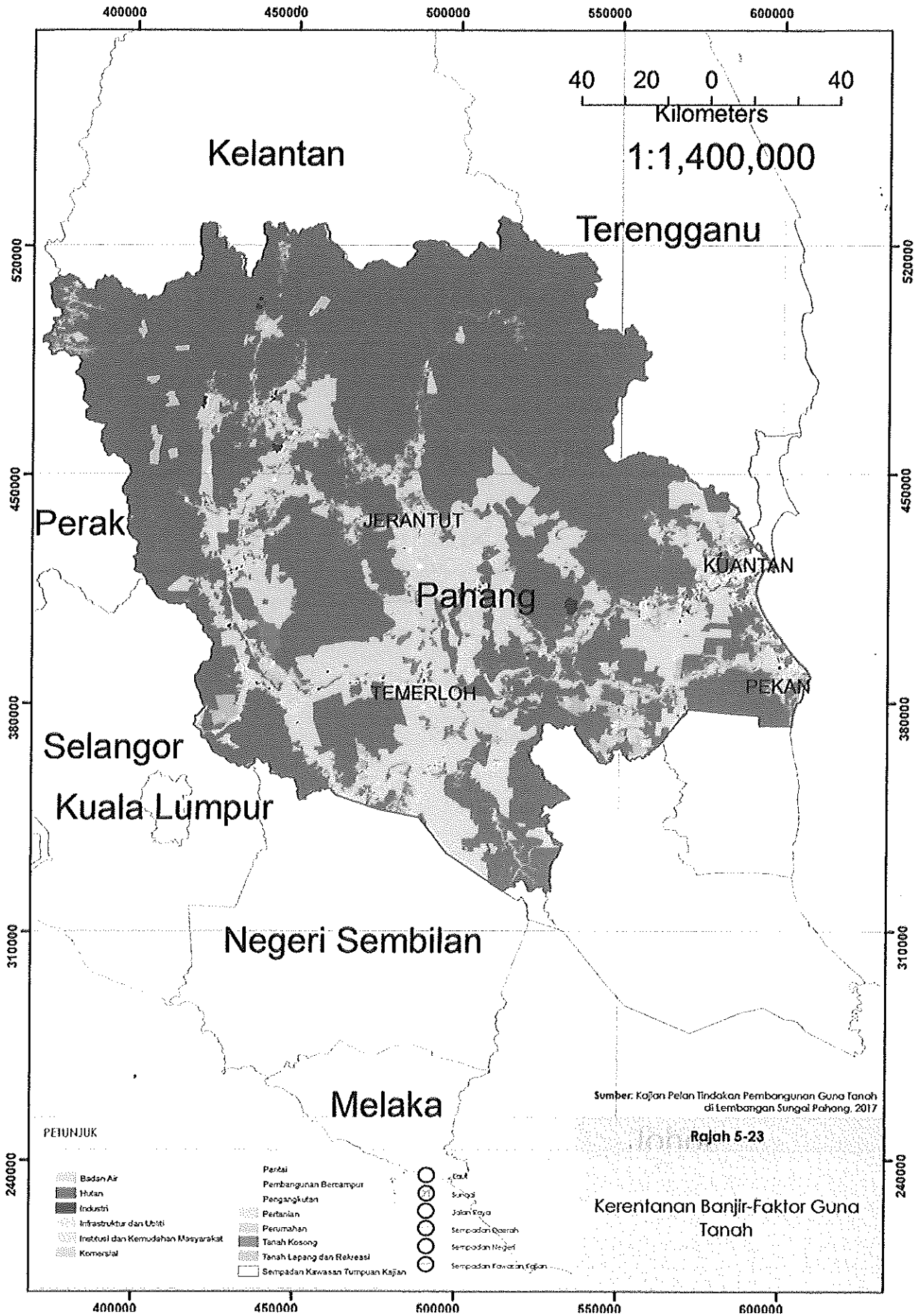
Faktor Banjir	Kerentanan Tahap 1 (Tinggi)	Kerentanan Tahap 2 (Sederhana)	Kerentanan Tahap 3 (Rendah)
1. Keadaan Topografi & DEM	☉ < 300 m	☉ 301- 600 m	☉ 601 - 800 m
2. Kelas Kecerunan	☉ < 15 ⁰	☉ 16 - 30 ⁰	☉ 31 ⁰ - 40 ⁰
3. Jenis Guna Tanah 2015	☉ Perbandaran ☉ Perumahan ☉ Perindustrian ☉ Perniagaan	☉ Infrastruktur ☉ Jalan raya	☉ Perhutanan ☉ Pertanian ☉ Kawasan lapang
4. Jarak Dari Tebing Sungai	☉ < 500m	☉ 500m – 1,000m	☉ 1,001 – 1,500 m
5. Kawasan Banjir ARI 1 Tahun Dan ARI 100 Tahun	☉ ARI 1 tahun	☉ ARI 100 tahun	-

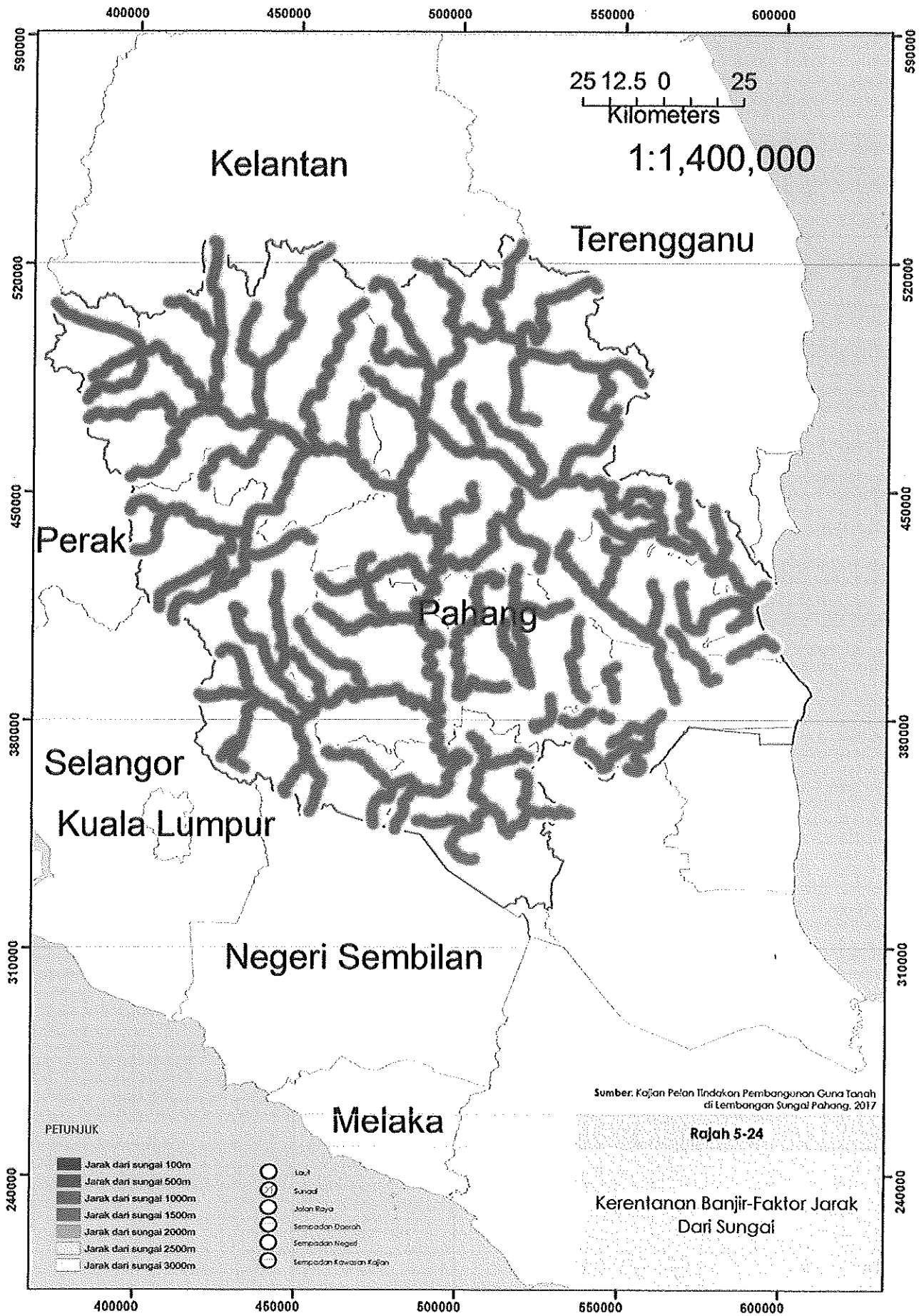
Jadual 5-10: Tahap Kerentanan Banjir

Sumber: Kajian Pelan Tindakan Pembangunan Guna Tanah di Lembangan Sungai Pahang, 2017

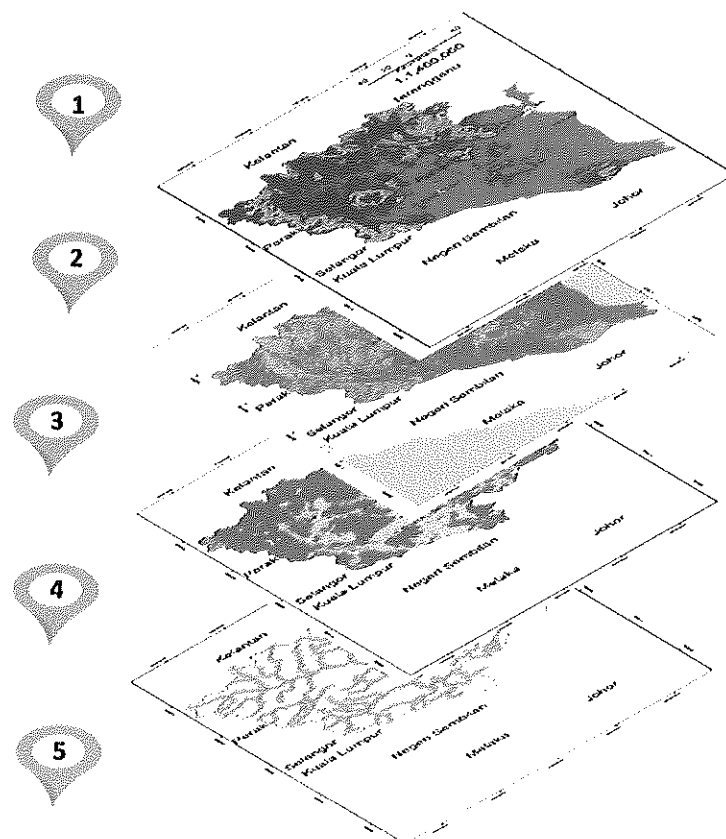








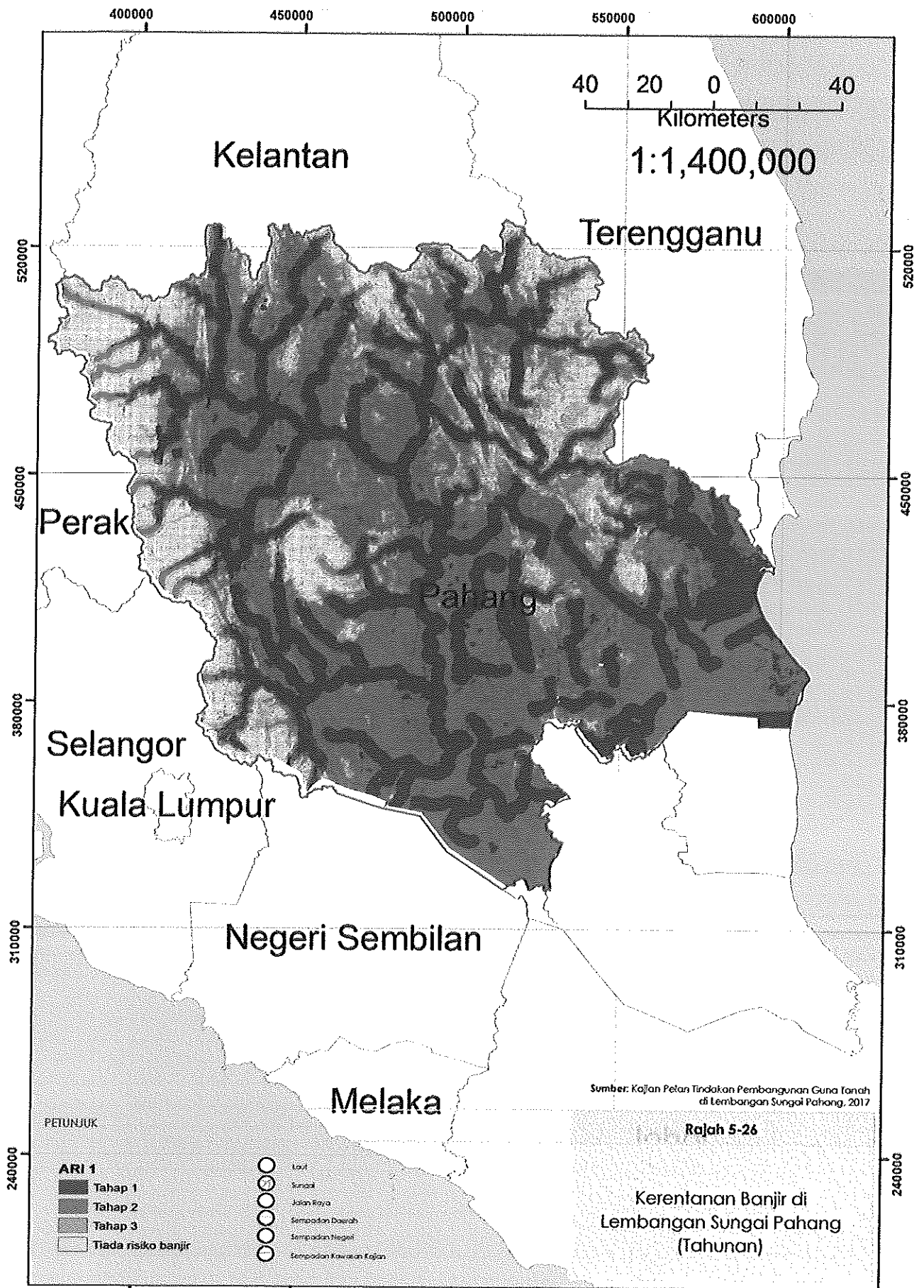
Setiap faktor tersebut telah dipindahkan ke dalam bentuk pengkalan data spatial grid menggunakan perisian ArcGIS. Setiap faktor ini mempunyai pengaruh untuk menentukan kebarangkalian potensi banjir akan berlaku atau sebaliknya adalah bergantung kepada sifat-sifatnya. Gabungan setiap peta yang melalui proses lapisan (layering) menghasilkan kawasan rentan banjir secara spatial (Rajah 5-25).

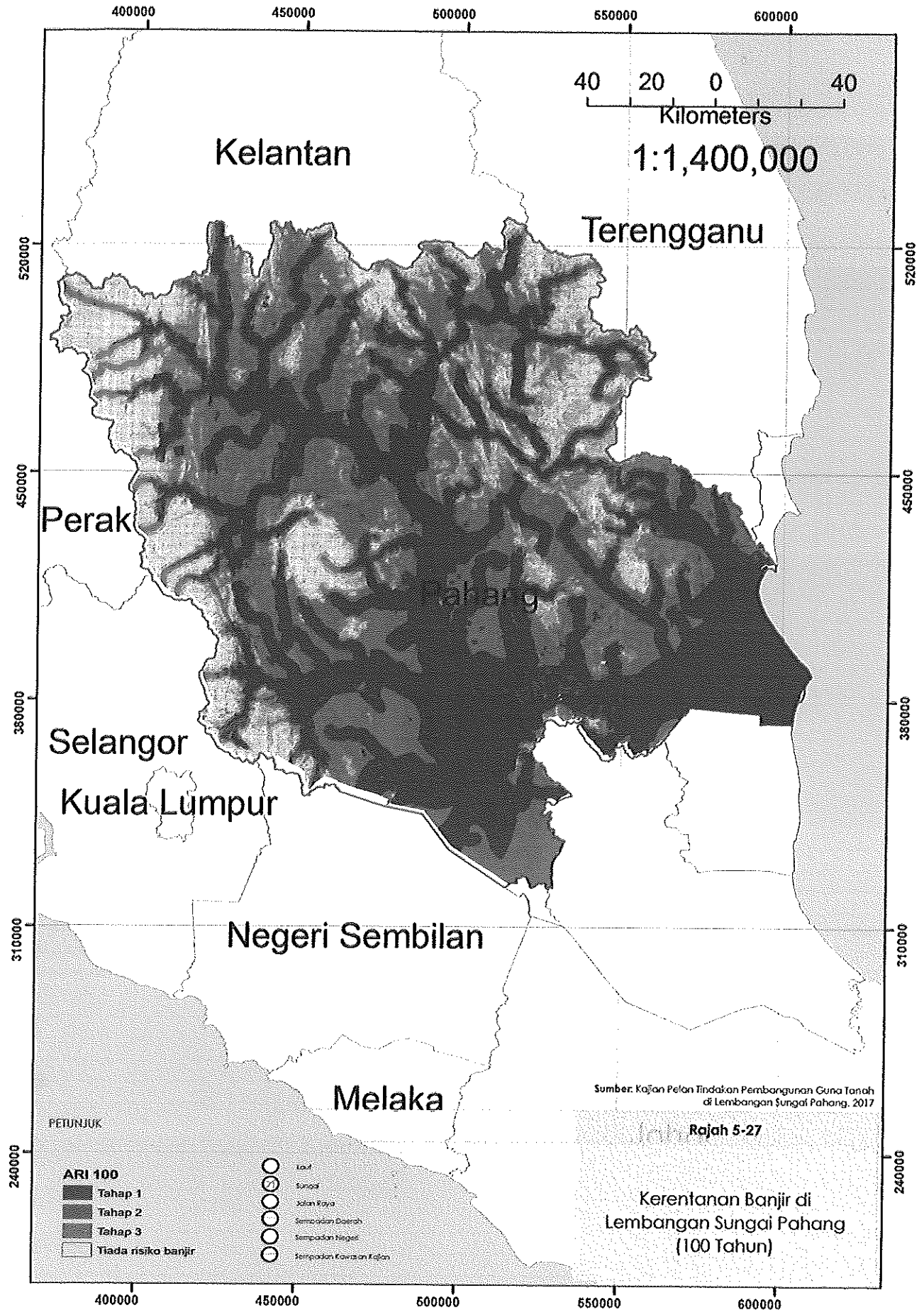


Rajah 5-25: Proses Lapisan Faktor Rentan Banjir

Sumber: Kajian Pelan Tindakan Pembangunan Guna Tanah di Lembangan Sungai Pahang, 2017

Rajah 5-26 dan 5-27 menunjukkan kawasan kerentanan banjir mengikut tahap rentan yang berbeza menurut ARI 1 tahun (tahunan) dan 100 tahun (kes ekstrem). Tahap rentannya melibatkan rentan tahap 1 (tinggi), rentan tahap 2 (sederhana) dan rentan tahap 3 (rendah), manakala kawasan yang tidak termasuk dalam mana-mana tahap merupakan kawasan yang tidak mengalami insiden banjir. Taburan *spatial* ini merujuk kepada faktor persekitaran dan geografi yang dikaitkan dengan banjir monsun sungai (*riverine monsoon flood*) yang selalu berlaku pada hujung tahun. Dapatan dalam bentuk pelan ini penting kerana ia dapat menyediakan pelan pengurusan risiko bencana banjir seperti meliputi aspek sistem amaran awal.





sg pahang

by Zainora Asmawi

Submission date: 06-Mar-2018 11:59AM (UTC+0800)

Submission ID: 925867876

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