



Government of Central Kalimantan



Government of Indonesia



Government of the Netherlands



Master Plan for the Rehabilitation and Revitalisation of the Ex-Mega Rice Project Area in Central Kalimantan



GUIDE TO THE SPATIAL DATABASE AND GEOGRAPHICAL INFORMATION SYSTEM (GIS) OF THE EMRP MASTERPLAN

Technical Report No. 9

OCTOBER 2008

Euroconsult Mott MacDonald and Deltares | Delft Hydraulics
in association with
DHV, Wageningen UR, Witteveen+Bos, PT MLD and PT INDEC

Master Plan for the Rehabilitation and Rehabilitation of the Ex-Mega Rice Project Area in Central Kalimantan

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Guide to the Spatial Database and Geographical Information System (GIS) of the EMRP Masterplan

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1 Spatial Database & GIS for the EMRP MasterPlan

1.1 Background

The development of a Master Plan for the Conservation and Development of the Ex Mega Rice Project in Central Kalimantan Province is financed by the Government of the Netherlands in support of the planning and programming by the Government of Indonesia for the rehabilitation and restoration of the area. The implementation of the project is supervised by the Royal Netherlands Embassy in Jakarta together with the Government of Central Kalimantan Province and Bappenas.

The EMRP Master Plan covers an interdisciplinary review, analysis and indicative integrated design of sectors of conservation and development. These sectors include hydrology, ecology, land use, social-economy, infrastructure, environment, economy, policies and capacities. The designs concern spatial utilization scenarios of the area, which represent the integration of potentials, constraints, trends, impacts and organization of interventions in the mentioned sectors of ecological conservation and social/economic development.

The reviews, analyses and designs need comprehensive, accurate and up-to-date data and information. The data have a spatial reference, or are linked to data with a spatial reference. The spatially referenced data are systematically organized in a spatial database. The data which are not directly spatially referenced can be linked to the spatial database. The spatial database is part of a Geographical Information System (GIS). The GIS provides functionality for a range of operations on the data, extending to analysis, integration and display of data, in order to produce the information needed for the composing of the various integrated conservation and development scenarios

Presently, available data at the province are not complete, of varying quality, not catalogued, lacking a database management, not always easily available, often in incompatible formats, not following standardized data descriptions and formats, and seldom used for spatial analysis.

1.2 Purpose & Objectives

The purpose of the development of the spatial database and GIS for the EMRP Master Plan is to support the various analyses, planning and monitoring efforts concerning the EMRP area.

The objectives of the development of the spatial database and GIS for the EMRP Master Plan are:

1. Compile and provide spatially referenced and structured data and associated data
2. Provide a system, tools and user-interface for data operations including to store, access, retrieve, and use the data.
3. Provide documentation, guidelines and recommendations to support the management and operation of the spatial database and GIS by the Central Kalimantan Government, Bappenas and other end users.

1.3 Approach

The development and utilization of a spatial database system & GIS is guided and determined by the interactions between people and data.

People, on one side, can be clustered into three groups:

- (1) Data providers,
- (2) Value adders and
- (3) End users.

Spatial data, on the other side, have a number of basic characteristics:

- (1) Content,
- (2) Type,
- (3) Scale,
- (4) Source,
- (5) Projection,
- (6) Time.

The interaction between people and data is regulated by three mechanisms:

- (1) Standards,
- (2) Policy, and
- (3) Accessing network.

Together, these describe a Spatial Data Infrastructure (see Figure 1).

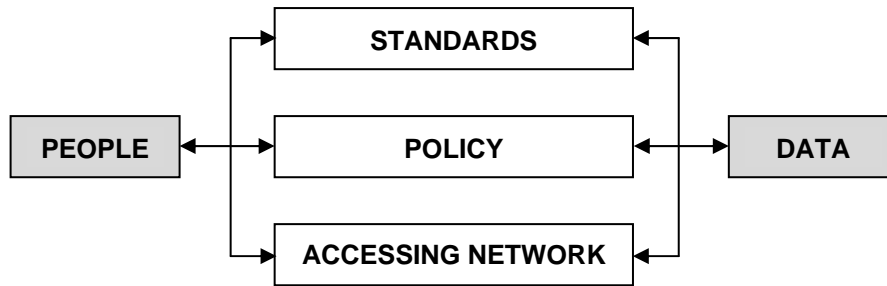


Figure 1: Spatial Data Infrastructure showing the relationship between people and data.

1.3.1 Standards

Data need to be defined, produced, arranged, referenced, structured and described according to agreed upon standards, in order to achieve data compatibility, data quality and efficiency in the exchange, comparison and integration of the various data.

Standards are laid down in guidelines and specifications. The standards ensure uniformity among the various sets of data, as well as compatibility of data created, developed and exchanged between providers, value adders and end users of data. The standardization of maps in Indonesia is the role and function of Bakosurtanal, as determined by the National Board of Standards (Badan Standardisasi Nasional) which oversees the Indonesian National Standards. Bakosurtanal produces topographic maps in scales from 1:10,000 to 1:250,000, in line with Government Regulation No.10/2000 on the Level of Detail of Maps for Spatial Planning (PP 10/2000). Furthermore, Government Regulation No.112/2006 installed a National Team on the Standardization of Topographic Names to reach a common naming convention.

1.3.2 Policies

The various standards are determined by policies and regulations. Policies furthermore regulate data access, such as services, distribution, copyright, privacy, security and pricing issues. Also covered are institutional arrangements, such as data management responsibilities, including supervision, coordination, data custodianship and monitoring/quality control. Policies furthermore focus on organizational, technical, financial and human resource capacities needed.

The Spatial Data Infrastructure furthermore compels the development of spatial data policies and a spatial data management system (see further under Chapter 2). The basis for the elaboration of these policies was established in 2007 with the issuance of the Presidential Regulation on the National Spatial Data Network (Perpres 85/2007).

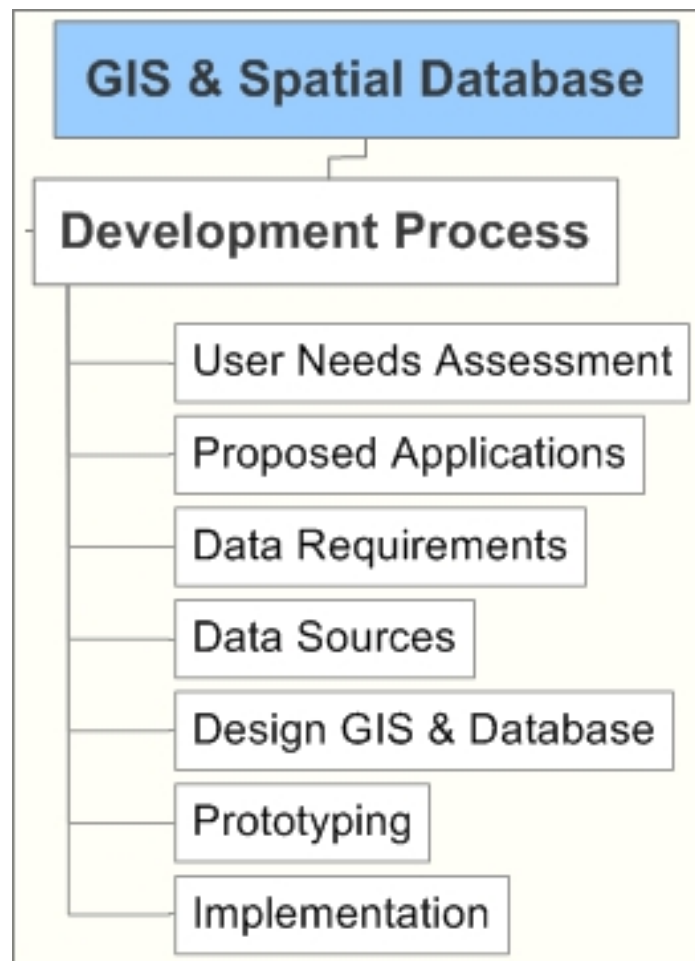
1.3.3 Accessing Network

This mechanism concerns the technical means and specifications of data access, distribution and exchange. It also involves costs and response times.

The Spatial Data Infrastructure, depicting the interactions between people and data, provides the framework and guidance for the development process of the GIS & Spatial

Database (see Figure 2). This process is described in the next paragraphs and chapters.

Figure 2: Development Process GIS & Spatial Database



1.4 User Needs Assessment

The starting point of the development of a spatial database and GIS functionality is an assessment of user needs. Users include decision makers, spatial planners, public and private sector development planners and program implementers, spatial use regulators and monitors, security authorities, researchers, and the general public.

Different users have different needs, corresponding to their activities, products and/or services. These needs translate in specifications regarding type, content, scale, accuracy and age of the spatial information, and furthermore in required GIS functionality and applications.

The expected users of the MP EMRP spatial database and GIS, their activities, products and/or services, and needs for GIS functionality and applications are listed in Table 1.

Table 1: Spatial Data User Needs & Applications

User	Activity/Product/ Service	GIS application
Public Works Agency / BAPPEDA	<ul style="list-style-type: none"> · Regional Spatial Plans · Detail Spatial Plans · Zoning Plans 	<ul style="list-style-type: none"> · Data Operations · Database Integration · Spatial Editing · Spatial Analysis · Image Processing / Analysis · Spatial Statistics · Cartography · Data Distribution
BAPPEDA	<ul style="list-style-type: none"> · Regional Development Plans · Budget Plans 	<ul style="list-style-type: none"> · Data Operations · Database Integration · Spatial Analysis · Spatial Statistics
Forestry Service	<ul style="list-style-type: none"> · State Forest Zoning / Function Map · Forest Type Map · Forest Condition Monitoring · Forestry Sector Development Plans · Forestry Sector Licensing, Monitoring, Control 	<ul style="list-style-type: none"> · Data Operations · Spatial Editing · Spatial Analysis · Image Processing / Analysis · Spatial Statistics · Cartography · Data Distribution
Forestry & Watershed Management Body (BP DAS)	<ul style="list-style-type: none"> · Watershed Management Plan · Watershed Condition Monitoring · Rehabilitation & Reforestation Plan · Rehabilitation & Reforestation Monitoring 	<ul style="list-style-type: none"> · (like above)
Forestry & Nature Conservation Body (BKSDA)	<ul style="list-style-type: none"> · Protected Areas Management Plan · Protected Area Monitoring 	<ul style="list-style-type: none"> · (like above)
National Park Management Body (BTN)	<ul style="list-style-type: none"> · National Park Management Plan · National Park Monitoring 	<ul style="list-style-type: none"> · (like above)
Agricultural Service	<ul style="list-style-type: none"> · Agriculture Sector Developm. Plans · Land Suitability Map · Agricultural Sector Licensing, Monitoring, Control 	<ul style="list-style-type: none"> · (like above)
Estate Crop Service	<ul style="list-style-type: none"> · Estate Crop Sector Developm. Plans · Estate Crop Sector Licensing, Monitoring, Control 	<ul style="list-style-type: none"> · (like above)
Fishery Service	<ul style="list-style-type: none"> · Fishery Sector Development Plans · Fishery Sector Licensing, Monitoring, Control 	<ul style="list-style-type: none"> · (like above)
Livestock Service	<ul style="list-style-type: none"> · Livestock Sector Development Plans · Livestock Sector Licensing, Monitoring, Control 	<ul style="list-style-type: none"> · (like above)
Transmigration Service	Transmigration Settlement and Service Plans	<ul style="list-style-type: none"> · (like above)
Public Works Service	<ul style="list-style-type: none"> · Road Infrastructure Dev. Plans · Hydrological Infrastructure Dev. Plans · Other Infrastructure Dev. Plans 	<ul style="list-style-type: none"> · Data Operations · Database Integration · Spatial Editing · Spatial Analysis · Image Processing / Analysis · Spatial Statistics · Cartography · Data Distribution
Electricity, Water Supply, Telephone etc.	Location / implementation plans	

Users furthermore include:

- Private companies in land/resource use (concessionaires, plantation companies)
- Consultant Companies (planning, management and GIS/mapping services)
- Other companies, such as producers of GPS navigation maps
- Research Institutes

- General Public (information purpose)
- Security forces

The organizations and institutions mentioned above are at the same time also data providers, and/or value adders.

GIS functions needed by most providers, users and value-adders is briefly described below:

1. *Data Operations*: includes reading, importing, converting, registering, storage, retrieval, copying, exporting, printing and display of data.
2. *Database Integration*: refers to the linking of the spatial database with other databases & tabular data
3. *Spatial Editing*: refers to operations on raster or vector data to create new raster or vector data
4. *Spatial Analysis*: refers to the analysis of relations, impacts and trends between the various spatial elements
5. *Image Processing / Analysis*: refers to the preparatory image rectifications (radiometrical, geometrical: georeferencing) followed by an analysis, interpretation and classification of clusters of raster cell / pixel values
6. *Spatial Statistics*: refers to the various calculations linked to the various relations between spatial elements (most common of these is area calculation)
7. *Cartography*: the mapping of the spatial elements using a map projection, datum and corresponding coordinate grid.
8. *Data Distribution*: the delivery and exchange of the spatial data / information among institutions, stakeholders, and entities.

1.5 Data Requirements

Data requirements refers to:

- Data content / topic
- Data detail / scale
- Data reliability
- Data recentness
- Data structure
- Data projection
- Data format

1.5.1 Data content / topic

There are two main groups of spatial data / information, reference data and thematic data. Reference data, compiled as a reference map, provide a geographically referenced framework to which other types of spatial data / information from various sources, at different scales and in different formats, can be tied. The content of the

reference maps is topographic. A topographic map is a detailed and accurate graphic and three dimensional representation of cultural and natural features on the ground.

Reference maps used in Indonesia, often called “base maps”, are the topographic maps (Peta Rupa Bumi) produced by BAKOSURTANAL, both the 1:250,000 as the 1:50,000 scale are used. The standard features drawn on base maps includes contours and spot elevations, coastlines, rivers, lakes, settlements, administrative boundaries, roads, railroads, and often other man- made features such as airports, shipping terminals, pipelines, electricity transmission lines and important buildings. Another key feature shown on all base maps is a coordinate grid.

Reference data / maps are needed by all users working with spatial information, either for consultation / orientation only, or as the “base” maps to project and integrate spatial data / information on.

Thematic maps show the distribution of a particular characteristic or theme. Examples include soil types, land cover/land use, rainfall, geology, the locations of mineral deposits, forest status boundaries and management or tenure boundaries for parcels designated or claimed as logging concessions, timber and non-timber plantations, adat areas or national parks.

1.5.2 Data detail / scale

The scale of the reference map depends on user needs, and ranges from large scale (e.g. 1:50,000 to small scale 1:250,000). Larger scale maps (e.g. 1:10,000) could be established as base-maps if so required by policy, and depending on feasibility of implementation subject to data availability and/or available capacity to acquire such data. Instead, since such large-scale maps are likely to be only locally required and/or needed to support specific activities, these detailed topographic data can be implemented as a focused thematic data application. For spatial planning purposes, Government Regulation 10/2000 defines that provincial spatial plans should be completed at a scale of 1:250,000, while district spatial plans should be completed at a scale of 1:100,000.

The detail of thematic data depends on the source and method of data acquisition and/or recording. Projecting detailed thematic data on less detailed (smaller scale) reference maps is common. Enlarging the scale of the two datasets combined will lead to distortion of the reference map themes. This has to be kept in mind when interpreting the more detailed thematic data against the background of the less detailed reference data.

1.5.3 Data reliability

Data reliability, or quality / accuracy, of reference maps is essential and needs to be high and guaranteed, since the reference map will be used as the basis to which all thematic data / information from the many different planning, management and other activities will be linked to. Obviously, data reliability is important for any type of data, since the correctness of the data directly influences the accuracy of the data analysis and related conclusions.

1.5.4 Data recentness

For many purposes, such as spatial planning, or forest cover monitoring, data need to be the most recent available. Some applications also need older, historic data, such as change analysis (change in forest cover, change in land use etc.).

1.5.5 Data structure

The main data structures are raster data and vector data. Raster data, such as satellite images, are important in the applications such as land use classifications, or forest type classifications. The resulting classifications are often converted into vector data. Vector data allow more precise data operations, calculations and data displays.

1.5.6 Data projection

Data are projected based on a mathematical representation of the 3-dimensional surface of the earth on a 2-dimensional plane in cartography (mapmaking). There are many map projections, but the Universal Transverse Mercator (UTM) projection and coordinate system is most commonly used.

1.5.7 Data format

Depending on their software, user may prefer the data to be delivered in a certain format such as Shapefile (a hybrid vector data format using SHP, SHX and DBF files, used by ESRI), MapInfo TAB format (MapInfo's vector data format using TAB, DAT, ID and MAP files) or GeoTIFF (a raster format, TIFF variant enriched with GIS relevant metadata)

All users of EMRP database and GIS need reference data and thematic data. The reference data needed are uniform for all users (see Box, below).

Key Spatial Reference Data
· Coordinate grid / projection
· Coastline
· Elevation/Contours
· Rivers, other water
· Watersheds
· Roads
· Other Infrastructure
· Cities-Villages
· Administrative areas

The thematic data requirements by EMRP related users are listed in Table 2 (example), along with data source.

The data source determines the data structure. Satellite optical, radar or thermal images, scanned maps and pictures are raster data. Data from secondary sources, such as digitized data from existing maps or copied GIS files, are often in vector data structure. Data from field measurements and recordings, such as from triangulations, or GPS position fixes, are vector based. Most of the current GIS software can convert raster to vector and vice-versa, so flexibility to use both data structures together is high. Many of the spatial data / information (both reference and thematic data) start out as

raster type data (e.g. acquired, processed and analyzed in raster data format, with the processing and analysis results formatted / exported into vector type data.

Table 2: Examples of Thematic Spatial Data Requirements

Activity/Product/ Service	Spatial data / information themes	Source
<ul style="list-style-type: none"> · Regional Spatial Plans · Detail Spatial Plans · Zoning Plans 	<ul style="list-style-type: none"> · Land cover · Land use · Soils / Geology · Climate · Protected Areas · Ecosystems · Land suitability · Natural Resources · Demographics · Socio-economy · Natural / man-made hazards · Economic growth centers · Environmental Impacts 	<ul style="list-style-type: none"> · Satellite images (optical, radar, thermal) · Field surveys · Ground Control Points · Climate stations recordings · Existing data sets / maps · Spatially linked tabular data
<ul style="list-style-type: none"> · Regional Development Plans · Budget Plans 	* shared / integrated with spatial planning *	.
<ul style="list-style-type: none"> · State Forest Zoning / Function Map · Forest Type Map · Forest Condition Monitoring · Forestry Sector Development Plans · Forestry Sector Licensing, Monitoring, Control 	<ul style="list-style-type: none"> · Forest cover · Forest types · Forest condition · Forest functions · Forest administrative boundaries · Forest enterprise licenses 	<ul style="list-style-type: none"> · Satellite images (optical, radar, thermal) · Field surveys · Ground Control Points · Existing data sets / maps · Spatially linked tabular data ·

1.6 Data Availability & Quality

Data availability can be viewed from three angles:

- data exists or does not;
- data exists but either its very existence or its location / owner is unknown;
- data exists and is known, but can't be accessed (no owner permission, or bureaucratic blocks).

The availability of spatial data / information in Indonesia suffers from all three angles. In particular the situation applies that many of the needed data simply do not exist. This is related to the vast size of Indonesia's land area, which is impossible to map in detail without immense efforts in time, funds, expertise and human resources, especially for the vast and relatively inaccessible areas of many of Indonesia's provinces outside Java. As an example, Central Kalimantan is 3.5 times the size of the Netherlands, twenty percent larger than Norway. Even if a large, skilled and well-equipped labor force were available, the remoteness and relative inaccessibility of large portions of the region represent significant constraints to any serious surveying and mapping effort. The internal road network is very limited – most people use the more extensive river network and move around by boat.

Most of the data that do exist for these areas come from satellite imagery, much less so from wide-ranging field surveys. Data from satellite images are more cost effective and much less time consuming. However, the interpretation and classification of these satellite data still needs field campaigns to check and calibrate the results.

Most of Indonesia's areas have now been mapped based on a variety of satellite image products. However, the scale, detail and consistency of these mapping results is affected by the resolution of the satellite sensors/images, data gaps due to cloud cover (affecting optical sensors), the quality of data processing and interpretation, and the accuracy of the base maps (reference maps) to which the resulting data interpretations are tied.

Another reality is that data have been collected by various entities, such as private companies, international organizations and national research institutes, but that the existence of these data is not generally or publicly known and/or made available. The reasons range from security, privacy, copyright, ineffective communications to plain unwillingness to share.

The quality of many secondary data sources is often low, and metadata are often not available or inconsistent. This makes it hard to know where the data really came from, how reliable they are, and if and what sort of operations have been applied to the data.

1.6.1 Situation in Central Kalimantan

Spatial data in terms of GIS files available at the various government agencies was found to be mostly incomplete, sometimes outdated and sometimes even absent. The use of spatial data also varied from storage, reprinting of maps, to some analysis involving the combination of some data layers, mostly to highlight administrative boundaries and overlapping land use / land use claims. Some spatial data sets were found to be damaged by a virus that attacks the .dbf files of GIS data sets.

Presently, the inconsistencies and inaccuracies in and between the various spatial data sets available at the different government agencies working with spatial data make it very difficult to have a common basis for subsequent integrated planning. Even the base maps used lack uniformity, leading to serious problems such as ambiguous administrative boundaries and village locations, and errors such as misplaced river networks.

These discrepancies between the various spatial data sets lead to and at the same time can be based on conflicts of interests between various government agencies. It can also lead to serious mistakes in land and resource use allocations, detrimental to the environment, economy and social harmony.

Many of the data from the Districts on the locations of land use activities (primarily oil palm estates, mining and other activities) are either hard to access, come from different sources and are often only available in hard-copy format. It is often not easy to decide which of these spatial data sets is the correct one, before the officially accepted dataset is obtained. The discrepancies between the various overlapping data are the result of limited technical and institutional capacities, lack of coordination and control and balance in horizontal and vertical planning processes, and the forwarding and defending of various sectoral interests.

The problems data sets range from ambiguities in administrative boundaries (practically all village boundaries, some sub-district boundaries, some district boundaries, and even the province boundary), utilization boundaries (many overlapping land utilizations, planned ones as well as operational ones, overlaps of oil palm estates, mining, transmigration, conservation areas, state forest lands) to data that are outdated, unverified or not uniformly classified.

Availability of thematic data and GIS functionality across various government institutions is listed in Table 3. Data obtained from these institutions are listed in Appendix 1.

Table 3: Sources of Data in Central Kalimantan.

No.	Institution	GIS Data / GIS Operator
1	Bappeda, Province	Yes
2	Public Works, Province	No (use consultant)
3	Forestry, Province	Yes
4	Estate Crop, province	Yes
5	Mining, Province	Yes
6	Agriculture, Province	No
7	Fishery, Province	No
8	Government Administration, Province	Unknown
9	Bappeda, Palangkaraya	Yes
10	Land Management Agency, Province	Yes
11	Transmigration, Province	Yes (but use consultant)
12	Any agency in Pulang Pisau District	No
13	Bappeda Kabupaten Kapuas	Yes
14	Estate Crops Kabupaten Kapuas	Yes
15	BPN Kabupaten Kapuas	Yes
16	Mining Kabupaten Kapuas	Yes
17	Forestry Kabupaten Kapuas	Unknown
18	Bappeda Kabupaten Barito Selatan	Yes

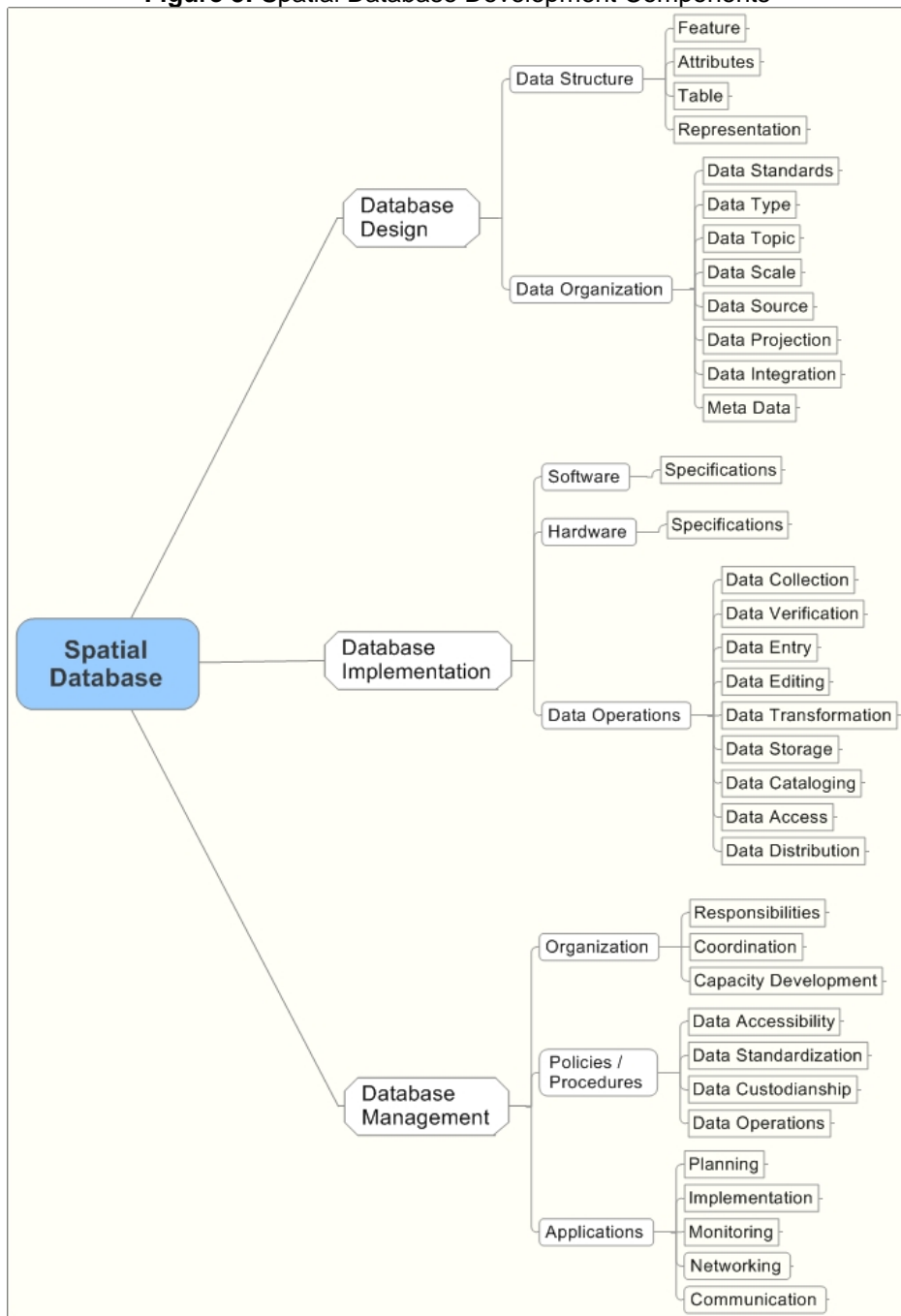
1.6.2 Topographic Maps

The topographic Peta Rupa Bumi maps from BAKOSURTANAL at 1:50,000 scale cover the entire EMRP area. The 50 map sheets have also been merged into one topographic file covering the whole EMRP area.

1.7 Spatial Database Development

An overview of the components of a Spatial Database development is presented in figure 3.

Figure 3: Spatial Database Development Components



2 Design of the Spatial Database & GIS

2.1 Data Structure

Data structures used in the EMRP Spatial Database are both raster and vector data structures. The raster data mostly concern geometrically rectified, enhanced and classified satellite images. Raster data are pixel values stored in a matrix format. The smaller the pixels, the higher the resolution of the image. The geographical positions of the pixels are calculated from their row/column number, after the image has been matched and linked to a reference map and projection/coordinate grid.

The vector data structures include point, line and polygon features, that are used to describe a variety of spatial data themes. E.g., point data are often used for geographical addresses, line data to map roads, and polygon data to map areas, such as forest areas. The vector data structures are stored in a number of linked files which contain:

- locational data (which tells where features are)
- topological data (which tells where features are in relation to other features)
- attribute data (tells what features are, e.g., road, trail, stream).

Attribute tables can be expanded with more additional information about the spatial features. Attribute data can also be spread over a number of tables, which can be linked to each other and the tables on location and topology.

2.2 Data Organization

The data in the EMRP Spatial Database are stored in a directory structure based on and descriptively labeled accordingly:

- Data topic (reference or thematic, and further specified e.g. land cover, roads, etc.)
- Data type/structure (raster/image, vector data stored separately)
- Data source (source, provider or value-adder of the data)
- Data projection (e.g. UTM, or not projected but in latitude-longitude coordinates)
- Data scale (for reference maps of different scale)

Information about each spatial data item is described in the Meta Data, and includes the topic, content, filename, source, year, attributes and description of the data (see

Appendix 2). The map projection of the data is uniform, and its identification part of the filename.

2.2.1 Data Sources

The following data sources have been used in the development of the EMRP Spatial Database:

- compiled from government agencies
- compiled from partner organizations
- acquired from research institutions
- ordered from service providers
- collected through field surveys

2.2.2 Map projections

Map Projections are mathematical expressions that define the spatial relationship between locations on earth and their relative locations on a flat map. Map projections can be classified by the geometric surface that the sphere is projected on, i.e. planar, cylindrical or conic.

Spatial data need to be projected for spatial analysis. Data often comes in geographic, or spherical coordinates (latitude and longitude) and can't be used for area calculations, hence they are projected first. There are many different map projections, some projections work better for different parts of the globe giving more accurate calculations.

The Universal Transverse Mercator (UTM) coordinate system is a grid-based method of specifying locations on the surface of the Earth. The UTM is a conformal projection (shapes are preserved) on a cylindrical surface with two standard meridians. UTM is commonly used, also in Indonesia, and is a good choice when the east-west width of area does not cross zone boundaries. The UTM system divides the surface of the Earth into 60 zones, each 6° of longitude in width, running north south.

The EMRP area is located in UTM Zone 49S and 50S (S = south of equator).

Datums define the shape of the earth including the ellipsoid (size and shape) and the alignment of the ellipsoid (origin and orientation) so that it fits best in the region of interest.

The WGS84 datum/ellipsoid is used as the underlying model of the Earth in the UTM coordinate system.

3 Implementation of the Spatial Database & GIS

3.1 Hardware and Software

The GIS and database are developed and stored on a medium range desktop computer, with an additional external hard drive for data backup, a 19" LCD panel for editing and displaying maps, and a deskjet color printer to print A3 print outs. A large format printer (plotter) was available for use from the Bappeda office. GPS was purchased for the field checks and surveys.

The EMRP spatial database and GIS is implemented in ArcGIS 9.2, which was purchased and licensed by the project.

3.2 Data Operations

Data have been collected from various government institutions, NGOs, research institutions and other sources. The data have been verified using imagery such as the Landsat ETM image from 2007, and the topographic reference maps. Data have been edited to correct topology (overlapping polygons, hole in polygons etc.). Data have been commonly projected in UTM format, both for 49S and 50S zones (S refers to south of the equator). Furthermore, various data combinations have been mapped based on user requests (see Appendix 3)

3.3 Data Catalog

The data holding, including meta data information, is listed in Appendix 2. The Meta Data file in Appendix 2 lists the UTM 49S, the metadata for UTM 50S and LatLon data sets are not listed since these are identical to the metadata listed under UTM 49S.

4 Management of the Spatial Database & GIS

4.1 Standardization

Spatial and land use planning is hampered by a lack of complete, accurate and sufficiently detailed spatial data. This situation is further aggravated by the existence of various more or less incompatible spatial data sets kept, managed and used by the different government agencies working with spatial data. The inconsistencies and inaccuracies in and between these spatial data sets make it very difficult to have a common basis for subsequent planning. Even the base map lacks uniformity, leading to serious problems such as ambiguous administrative boundaries and village locations, and errors such as misplaced river networks.

These discrepancies between the various spatial data sets lead to and at the same time can be based on conflicts of interests between various government agencies. It can also lead to serious mistakes in land and resource use allocations, detrimental to the environment, economy and social harmony.

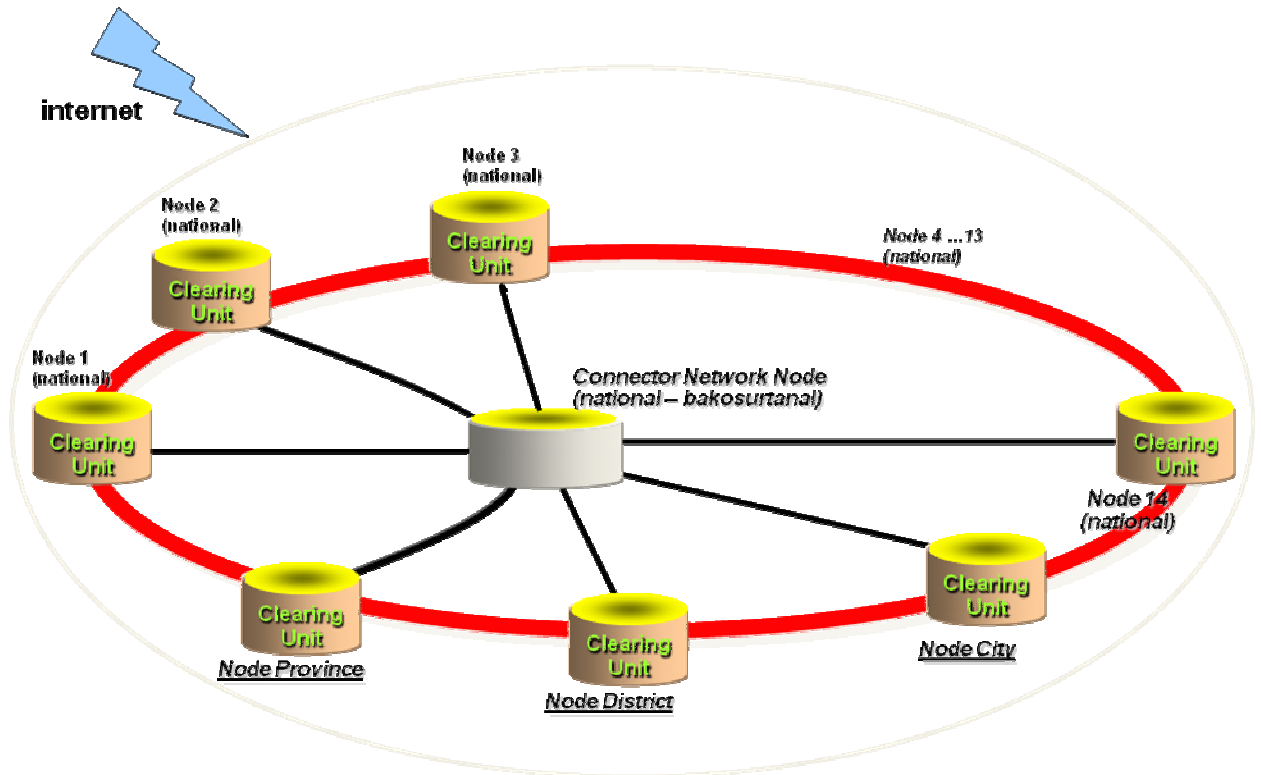
There are also situations where spatial data sets available at different agencies are actually compatible, and are each being managed and updated by these different agencies. This is a duplication of the same effort and associated government funds spent, and is an efficiency problem which should be avoided.

Around 2002, Indonesia introduced the concept of Spatial Data Infrastructure, and has been promoting and developing it ever since, lead by BAKOSURTANAL. The intention is to get all provinces, districts and national level agencies to use standardized spatial datasets, so that data can be exchanged, matched and compared in a data communication network that is accessible by all, either as data provider, value adder or data user. Such an approach would also weed out inefficiencies in data acquisition, editing, and utilization.

4.2 Organization

The development of a Spatial Data Infrastructure, after years of pilot activities and other preparations, has been officially launched through Presidential Regulation No.85/2007, concerning a National Spatial Data Network. There is now a firm legal and institutional basis, in combination with stipulations in the laws and regulations on spatial planning and development planning, to further develop the cooperative mechanisms, management settings, responsibilities, and functions of the Spatial Data Networks in and between Provinces and Districts and the National level. Bakosurtanal has been appointed to guide this process of development, to provide the central network node, and to assist with the development of the other network nodes (Figure 4). Fourteen national government agencies, 33 provinces and 465 districts and cities are to establish such nodes on the integrated network. The target for completion is 2012.

Figure 4: The National Spatial Data Network



5 Recommendations

The Master Plan team proposes the following recommendations for the development of spatial data management in Central Kalimantan, and specifically, the Ex-Mega Rice Project area:

1. Central Kalimantan Province needs to develop spatial data standardization and a cooperative spatial data management network in order for the province/district to build up a complete and regularly updated spatial database of sufficient and constant quality. This would remove further duplication in data acquisition and data analysis, achieving unhampered access and exchange to and of spatial data between government agencies through an effective data management system.
2. The Province / Districts need to develop a Spatial Information Strategy (based also on the Perpres No 85/2007 on the National Spatial Data Network (JDSN)).
3. The Province and Districts should plan and budget for such spatial data infrastructure, based on and supported by the Perpres JDSN.
4. Spatial data, information and products need to be agreed upon, and a development path drafted.
5. Cooperation structure and management responsibilities, e.g. lead organization, clearing house, data custodian, need to be defined. Operation procedures and quality standards need to be established. A Spatial Data Center needs to be established.
6. Capacity development needs to be developed, encompassing sector/network, organization and individual capacities.
7. Sustainable GIS capacity at provincial / district government agencies needs to be achieved, by reviewing the policy of frequently reassigning staff to a range of unrelated disciplines.

Annex 1 Spatial Data Collected by the Master Plan Team

Data	Institution	Data Source	Data Format	Scale	Projection / Datum	Note
A. Reference Data						
Contours / Kontur	Dinas Kehutanan	Bakosurtanal RBI Map	Hard Copy	1 : 250.000	GEO / WGS 84	Sebagian data kontur didapat saat proyek SCKPFP
Elevations / Elevasi						
Rivers – large / Sungai Besar	Dinas Kehutanan, Bappeda, Perkebunan CKPP	Bakosurtanal RBI Map	Shp	1 : 250.000 1 : 50.000	GEO / WGS 84	Data yang ada sebagian telah di ubah sesuai keperluan Data asli
Rivers – small / Sungai Kecil	Dinas Kehutanan, Bappeda, Perkebunan CKPP	Bakosurtanal RBI Map	Shp	1 : 250.000 1 : 50.000	GEO / WGS 84	Data yang ada sebagian telah di ubah sesuai keperluan Data asli
Wetlands / Lahan Basah / Rawa / Gambut / Danau						
Soils / Tanah	Bappeda CKPP	Puslitanak Survey Puslitanak	Shp		UTM / WGS 84	Ada beberapa tema feature tanah, sebagian besar ada di Blok A,B,D
Geologi	Bappeda	-	Shp	-	UTM / WGS 84	Data olahan untuk keperluan RTRWP
Watershed Boundaries / Batas DAS	DELFI (Marnic)	-	Shp	-	UTM / WGS 84	Data olahan

Data	Institution	Data Source	Data Format	Scale	Projection / Datum	Note
B. Thematic Data						
Peat Depth	CKPP EMRP MP	CKPP/ Puslitanak/ Survey	Grid	-	UTM / WGS 84	Blok A,B,C,D
	BOSF		Shp		UTM / WGS 84	Blok E bagian Timur, belum ada surat resmi namun data sudah ada pada Heri yang didapat secara informal
Land cover (Vegetation) / Penutupan Lahan	Dinas Kehutanan Propinsi /SCKPFP / Bappeda CKPP / Sarvision	Baplan / SCKPFP	Shp		GEO / WGS 84	Data hasil Intepretasi Citra Landsat TM 7 th 2000, 2004 Intepretasi Citra Radar
		CKPP / Sarvision	Grid		GEO / WGS 84	
Natural Forest Concessions / HPH	BPKH/Dinas Kehutanan Propinsi	SK Menhut	Shp		GEO / WGS 84	Data hasil digitasi peta lampiran SK Menhut / Tata Batas
Estates – Rubber / Perkebunan Karet	Bappeda / Dinas Perkebunan	A.lokasi, IUBP I, IUBP II, Ijin Lokasi, LP Lahan I, LP Lahan II, HGU	Shp		GEO / WGS 84	Data Hasil Kompilasi dari kabupaten
Estates – Oil Palm / Perkebunan Kelapa Sawit	Bappeda / Dinas Perkebunan	A.lokasi, IUBP I, IUBP II, Ijin Lokasi, LP Lahan I, LP Lahan II, HGU	Shp		GEO / WGS 84	Data Hasil Kompilasi dari kabupaten
Estates – HTI	BPKH/Dinas Kehutanan Propinsi	SK Menhut	Shp		GEO / WGS 84	Data hasil digitasi peta lampiran SK Menhut / Tata Batas
Provincial – boundary / Batas Propinsi	Bappeda	RTRWP /2003	Shp	-	UTM / WGS 84	
Kabupaten – boundary / Batas Kabupaten	Bappeda	RTRWP /2003 RTRWK	Shp	-	UTM / WGS 84	
Kecamatan – boundary / Batas Kecamatan	Bappeda	RTRWK, sumber lainya	Shp	-	UTM / WGS 84	
Cities/Towns centers / Kota	Bappeda, Sumber lainya	RTRWP / RTRWK/ Point lapangan			UTM / WGS 84	Kompilasi dari jaringan GIS kalteng
Village centers / Desa	Bappeda, Sumber lainya	RTRWP / RTRWK/ Point lapangan			UTM / WGS 84	Kompilasi dari jaringan GIS kalteng
Transmigration areas / Areal	Dinas Transmigrasi	Survey lapangan /	Map info/ Shp		UTM / WGS 84	

Data	Institution	Data Source	Data Format	Scale	Projection / Datum	Note
Transmigrasi		Konsultan				
Canals – primary / Kanal Primer	PU / Bappeda CKPP EMRP MP	RTRWP RBI Bakosurtanal	Shp Shp	- 1:50.000	UTM / WGS 84 -	Sebagian lokasi EMRP tidak tercover Belum secara resmi diterbitkan oleh Bakosurtanal
Canals – other / Kanal lainnya	PU / Bappeda CKPP EMRP MP	RTRWP RBI Bakosurtanal	Shp Shp	- 1:50.000	UTM / WGS 84 -	Sebagian lokasi EMRP tidak tercover Belum secara resmi diterbitkan oleh Bakosurtanal
Roads – main / Jalan Utama	PU / Bappeda CKPP EMRP MP	RTRWP RBI Bakosurtanal	Shp Shp	- 1:50.000	UTM / WGS 84 -	Sebagian lokasi EMRP tidak tercover Belum secara resmi diterbitkan oleh Bakosurtanal
Roads – other / Jalan Lain	PU / Bappeda CKPP EMRP MP	RBI Bakosurtanal	Shp Shp	- 1:50.000	UTM / WGS 84 -	Sebagian lokasi EMRP tidak tercover Belum secara resmi diterbitkan oleh Bakosurtanal
Provincial Spatial Plan / RTRWP	Bappeda Propinsi	RTRWP 2006				Dalam proses revisi
District Spatial Plan / RTRWK	Bappeda Kabupaten					
State Forest Zones / Kawasan Hutan	Departemen Kehutanan / BPKH / Dinas Kehutanan	BAPLAN	Shp			Dipakai untuk Inpres 2 2007
Land Unit / Land System / Sistem Lahan	Dinas Kehutanan Propinsi / Bappeda	RePProT 1985	Shp	1:250.000	UTM / WGS 84	
Land Suitability / Kesesuaian Lahan	CKPP, EMRP MP	Puslitanak 1996/97	Shp	1:100.000	GEO / WGS 84	Ada dalam peta tanah puslitanak untuk blok A,B,D
Critical Lands / Lahan Kritis	Dinas Kehutanan Propinsi	BPDAS				Belum ada data
Fire Risk / Rawan Kebakaran	Dinas Kehutanan Propinsi, BPPLHD CARE	Hot Spot dan FDRS Lapan	Shp		GEO / WGS 84	Data hotspot 6 tahun terakhir (2000 - 2006)
Poverty / Kemiskinan	BKKBN					

Data	Institution	Data Source	Data Format	Scale	Projection / Datum	Note
C. Field Data						
Elevations	CKPP, EMRP MP	PSP [#] 2007, freeboard, transects	Shp, xls	Point measurements, 1 km interval	Report	Not yet determined
	CKPP, EMRP MP	PSP 2007, Bakosurtanal DGPS	Shp, xls	Point measurements, 1 km interval	Report	Not yet determined
	CKPP, EMRP MP	PSP 2007, Laser altimetri, Viktor Boehm [®]	Grid	5x5 m	No, still experimental phase	No additional info
Rivers – large	CKPP, EMRP MP	Bakosurtanal (1989)	Shp, polygon	Rupabumi map 1:50,000	None	No additional info
Rivers – small	CKPP, EMRP MP	Bakosurtanal (1989)	Shp	Rupabumi map 1:50,000	None	No additional info
Wetlands	-					
Soils / Subsoils / incl. peat	CKPP, EMRP MP	PSP 2007	Shp, xls	Point measurements, 5 km interval	Report	Soil color, sand/clay, burnt topsoil?, (sub)soil reaction (masam), peat depth, peat type (incl. Van Post scale), vegetation
	CKPP, EMRP MP	RESTORPEAT	Shp, xls	Point measurements	None	Peat depth only
	CKPP, EMRP MP	Peatatlas (2004, 2006)	Polygon	Unknown	None	Peat depth range and peat type
	CKPP, EMRP MP	Puslitanak (1998)	Shp, xls	Point measurements, Blok A, B & D	None, if necessary report can be obtained	Soil type, horizon (until 4 m), vegetation, soil reaction (masam), peat depth (extremely unreliable)

Data	Institution	Data Source	Data Format	Scale	Projection / Datum	Note
D. Raster Data						
Landsat TM 7 2000,2003,2005	BOSF	Landsat	Composit raster Tiff	30 m resolution	Blok E Area	
Landsat TM 7 1994,2000,2003	Bappeda	Landsat	Composit and original band	30 m resolution	Whole area, except small part of blok E	
Landsat TM 7 2003	Dishut Prop / SCKPFP	Landsat	Composit raster Tiff	30 m resolution	All Blok Area	
Landsat / ASTER 2007	CKPP / Sarvision	ASTER		30 - 15 m resolution	All Blok Area	Hasil berupa LULC 2007, Landsat dan Aster digunakan sebagai referensi. Images tidak ada

Non Spatial Data	Institution	Data Source	Data Format	Note
Legal paper Arahan lokasi perkebunan sawit u kab Kapuas dan P.Pisau	Disbun Kabupaten. BPN Propinsi	Disbun Kabupaten. BPN Propinsi	Harcopy	
Data sebaran perijinan kebun sawit / karet Kalteng	Disbun Propinsi	Disbun Propinsi	*.xls	

Abbreviations used in the overview:

PSP = Peatland Survey Project, June – September 2007, Wetlands International and WL | Delft Hydraulics

WRI = World Resources Institute

GFW = Global Forest Watch

Annex 2 Metadata Spatial Database

Pendahuluan

Data spasial yang ada dalam CD/DVD ini dikumpulkan dan diolah dengan menggunakan software Arcgis 9.2 dibagi dalam 5 direktori yang didalamnya ada sub-sub direktori yang diberi judul yang cukup jelas agar memudahkan pengguna dalam mencari tema data spasial yang diinginkan.

Direktori **Baseline** berisi data-data spasial dasar yang lazim digunakan seperti tema *batas-batas administrasi, jalan dan sungai*. Direktori **Tematik** berisi data spasial dengan tema-tema tertentu seperti tema *perkebunan, transmigrasi, kehutanan* dan lain lain. Direktori **Hasil Survey CKPP_EMRP** berisi data-data spasial hasil pengukuran lapangan. Direktori **Citra Satelit PLG (EMRP)** berisi data citra satelit optic dan radar. Direktori **RBI PLG** berisi data spasial Rupa Bumi Indonesia skala 1:50.000 yang tercakup dalam batas Ex PLG (EMRP).

Semua tema data yang ada dalam sub-sub direktori masing-masing disediakan dalam tiga proyeksi yakni 49S UTM, 50S UTM dan LatLon atau DD dengan Datum WGS 1984. Untuk keperluan penulisan metadata, contoh data yang diambil adalah dari proyeksi 49S UTM.

Pangkalan Data SIG

Baseline

Admin

BAKOSURTANAL

sumber: bakosurtanal

tahun :-

nama file : 49S ADMIN_KEC_LINE.shp

attribut: KODE_UNSUR, NAMA_UNSUR

keterangan: batas kecamatan polyline versi bakosurtanal, bukan untuk referensi batas administrasi

sumber: bakosurtanal

tahun :-

nama file : 49S ADMIN_KEC_POLY.shp

attribut: KECAMATAN,KABUPATEN,PROVINSI

keterangan: batas kecamatan polygon versi bakosurtanal, bukan untuk referensi batas administrasi

sumber: bakosurtanal

tahun :-

nama file : 49S desa_emrp_bakos.shp

attribut: KODE_UNSUR, NAMA_UNSUR, TOPONIMI

keterangan: point pemukiman

BAPPEDA KALTENG

sumber: bappeda provinsi kalteng

tahun : 2003

nama file : 49S batas kabupaten.shp

attribut: id

keterangan: batas kabupaten polyline versi bappeda provinsi

sumber: bappeda provinsi kalteng

tahun : 2003

nama file : 49S batas kecamatan.shp

attribut: ADMKAL_ID, WIL_KECAMA, WILKAB

keterangan: batas kecamatan polyline versi bappeda provinsi

sumber: bappeda provinsi kalteng

tahun : 2003

nama file : 49S batas provinsi.shp

attribut: LENGHT, BATAS

keterangan: batas provinsi polyline versi bappeda provinsi

sumber: bappeda provinsi kalteng

tahun : 2003

nama file : 49S desa_emrp.shp

attribut: REG_DESA, KECAMATAN, NAMADESA

keterangan: point desa dalam kawasan ex PLG versi bappeda provinsi

sumber: bappeda provinsi kalteng

tahun : 2003

nama file : 49S kabupaten kalteng.shp

attribut: id, KABUPATEN

keterangan: batas kabupaten polygon versi bappeda provinsi

sumber: bappeda provinsi kalteng

tahun : 2003

nama file : 49S kecamatan_poly.shp

attribut: ADMKAL_ID, WIL_KECAMA, WILKAB

keterangan: batas kecamatan polygon versi bappeda provinsi

DINAS TRANSMIGRASI KALTENG

sumber: dinas transmigrasi provinsi kalteng

tahun : -

nama file : 49S desa_poly.shp

attribut: KAMPUNG,DESA,KECAMATAN,KABUPATEN,PROPINSI,STATUS

keterangan: desa dalam kawasan ex PLG polygon versi dinas transmigrasi provinsi

sumber: dinas transmigrasi provinsi kalteng

tahun : -

nama file : 49S Kabupaten_region_Project.shp

attribut: KABUPATEN, IBU_KOTA, KETERANGAN

keterangan: batas kabupaten polygon versi dinas transmigrasi provinsi

sumber: dinas transmigrasi provinsi kalteng

tahun : -

nama file : 49S kampung_emrp.shp

attribut: KAMPUNG_ID,KAMPUNG,KECAMATAN,KABUPATEN,PROPINSI

keterangan: point desa/kampung dalam kawasan ex PLG versi dinas transmigrasi provinsi

sumber: dinas transmigrasi provinsi kalteng

tahun : -

nama file : 49S Kecamatan_Region_Project.shp

attribut: KECAMATAN,IBU_KOTA,KABUPATEN,PROPINSI,ADMKAL_ID

keterangan: batas kecamatan polygon versi dinas transmigrasi provinsi

sumber: dinas transmigrasi provinsi kalteng

tahun : -

nama file : 49S Pemukiman KalTeng.shp

attribut: NAMA,STATUS

keterangan: point pemukiman se kalteng

sumber: dinas transmigrasi provinsi kalteng

tahun : -

nama file : 49S Pemukiman_region.shp

attribut: KAMPUNG,DESA,KECAMATAN,KABUPATEN,PROPINSI,STATUS

keterangan: pemukiman se kalteng dalam format poligon

KAB. PULANG PISAU

sumber: humas pemda pulang pisau

tahun : 2007

nama file : 49S point desa P pisau.shp

attribut: NAME, LONGNAME

keterangan: point desa di kab pulang pisau berdasarkan point GPS lapangan

Jaringan Jalan

BAPPEDA KALTENG

sumber: bappeda provinsi kalteng

tahun :-

nama file : 49S Jalan_Propinsi.shp

attribut: NAMA_RUAS,NOMOR_RUAS,Lokasi

keterangan: jalan propinsi

sumber: bappeda provinsi kalteng

tahun :-

nama file : 49S jalan_kabupaten.shp

attribut: ID

keterangan: jalan kabupaten

sumber: bappeda provinsi kalteng

tahun :-

nama file : 49S Jalan_Kalteng.shp

attribut: JKALT, J_KAB

keterangan: gabungan antara jalan kabupaten, jalan propinsi, jalan nasional dan jalan lokal/setapak

sumber: bappeda provinsi kalteng

tahun :-

nama file : 49S Jalan_Nasional.shp

attribut: ID, LENGTH

keterangan: jalan negara/nasional

Sungai

BAPPEDA KALTENG

sumber: bappeda provinsi kalteng

tahun :-

nama file : 49S sungai besar.shp

attribut: BKALIL_ID

keterangan: sungai-sungai besar dalm format polygon

sumber: bappeda provinsi kalteng

tahun :-

nama file : 49S sungai kecil.shp

attribut: SKALIL_

keterangan: sungai-sungai kecil dalam format polyline

Tematik

Elevasi

BAKOSURTANAL

sumber: bakosurtanal

tahun :2007

nama file : 49S titik dgps-wi-bakosurtanal.shp

attribut: IDENT, LAT, LONG, ALTITUDE

keterangan:

BAPPEDA KALTENG

sumber: bappeda provinsi kalteng

tahun :-

nama file : 49S wilayah ketinggian.shp

attribut: SYSLAHAN,TINGGI_MAX,TINGGI_MIN,NAMA_KEC,
NAMA_PROP,NAMA_KAB

keterangan: elevasi diolah dari system lahan RePPrOT

Gambut

BAPPEDA KALTENG

sumber: bappeda provinsi kalteng

tahun :-

nama file : 49S gambut.shp

attribut: SYSLAHAN, GAMBUT

keterangan: gambut diolah dari system lahan RePPrOT

EMRP_CKPP

sumber: bappeda provinsi kalteng

tahun :2007-2008

nama file : 49S clip_ketebalan_gambut_baru.shp

attribut: ID, GRIDCODE, KETEBALAN

keterangan: data tentative gambut diolah dari data point pemboran lapangan...keterangan lebih lengkap dapa dilihat pada direktori Hasil Survey EMRP_CKPP

Geology

BAPPEDA KALTENG

sumber: bappeda provinsi kalteng

tahun :-

nama file : 49S formasi geologi.shp

attribut: KODE, FORMASI, KAB_KOTA

keterangan: sumber asli dari P3G Geology Bandung

Hotspot

sumber: maryland university

tahun :-

nama file : 49S hotspot_2000.shp

attribut: LATITUDE, LONGITUDE, BRIGHTNESS, SCAN, TIME, SATELITE,
CONFIDENCE, SOURCE

keterangan: point titik api (hotspot) pada kawasan Ex PLG tahun 2000

sumber: maryland university
tahun :-
nama file : 49S hotspot_2001.shp
attribut: LATITUDE, LONGITUDE, BRIGHTNESS, SCAN, TIME, SATELITE,
CONFIDENCE, SOURCE
keterangan: point titik api (hotspot) pada kawasan Ex PLG tahun 2001

sumber: maryland university
tahun :-
nama file : 49S hotspot_2002.shp
attribut: LATITUDE, LONGITUDE, BRIGHTNESS, SCAN, TIME, SATELITE,
CONFIDENCE, SOURCE
keterangan: point titik api (hotspot) pada kawasan Ex PLG tahun 2002

sumber: maryland university
tahun :-
nama file : 49S hotspot_2003.shp
attribut: LATITUDE, LONGITUDE, BRIGHTNESS, SCAN, TIME, SATELITE,
CONFIDENCE, SOURCE
keterangan: point titik api (hotspot) pada kawasan Ex PLG tahun 2003

sumber: maryland university
tahun :-
nama file : 49S hotspot_2004.shp
attribut: LATITUDE, LONGITUDE, BRIGHTNESS, SCAN, TIME, SATELITE,
CONFIDENCE, SOURCE
keterangan: point titik api (hotspot) pada kawasan Ex PLG tahun 2004

sumber: maryland university
tahun :-
nama file : 49S hotspot_2005.shp
attribut: LATITUDE, LONGITUDE, BRIGHTNESS, SCAN, TIME, SATELITE,
CONFIDENCE, SOURCE
keterangan: point titik api (hotspot) pada kawasan Ex PLG tahun 2005

sumber: maryland university
tahun :-
nama file : 49S hotspot_2006.shp
attribut: LATITUDE, LONGITUDE, BRIGHTNESS, SCAN, TIME, SATELITE,
CONFIDENCE, SOURCE
keterangan: point titik api (hotspot) pada kawasan Ex PLG tahun 2006

Infrastructure

BAPPEDA KALTENG

sumber: bappeda provinsi kalteng
tahun :-
nama file : 49S Bandar udara.shp
attribut: NO, STATUS, NAMA, LOKASI, KLAS
keterangan:

sumber: bappeda provinsi kalteng

tahun :-

nama file : 49S dermaga.shp

attribut: KAB_KOTA, NAMA_DERMA, NAMA_SUNGA, KONSTRUKSI, LUAS_M2, KONDISI, KLAS

keterangan:

sumber: bappeda provinsi kalteng

tahun :-

nama file : 49S pelabuhan.shp

attribut: ID, NAMA, STATUS, LOKASI, KELAS

keterangan:

BAKOSURTANAL

sumber: bakosurtanal

tahun :-

nama file : 49S kanal.shp

attribut: KET

keterangan: kanal dalam kawasan ex plg

KAB. PULANG PISAU

sumber: humas pemda pulang pisau

tahun : 2007

nama file : 49S point infrastruktur p_pisau.shp

attribut: NAME, LONGNAME

keterangan: point infrastruktur di kab pulang pisau berdasarkan point GPS lapangan

INPRES 2 2007

BAPLAN DEPHUT

sumber: baplan departemen kehutanan

tahun :-

nama file : 49S batas_blok_emrp_poli_final.shp

attribut: ID, DKERJA, BLOCK

keterangan: lampiran inpres 2 2007

sumber: baplan departemen kehutanan

tahun :-

nama file : 49S Landuse INPRES No 2 2007.shp

attribut: GAMBUT, KODE, LUAS_HA, DKERJA, KETERANGAN, KAWASAN, DEF

keterangan: lampiran inpres 2 2007

sumber: baplan departemen kehutanan

tahun :-

nama file : 49S btsluar_poli_final.shp

attribut: ID, BTAS_PLG

keterangan: lampiran inpres 2 2007

Kehutanan

BALAI PENGELOLA DAERAH ALIRAN SUNGAI (BPDAS)

KAHAYAN

DB_GERHAN04

sumber: bp das kahayan

tahun :-

nama file : 49S GERHAN gumas_2004.shp

attribut: NO,KECAMATAN,DESA,DAS,FUNGSI_KAW,JENIS_KEGI,
RA,RI,T1,T2,X,Y

keterangan: kegiatan gerhan 2004 kab gunung mas

sumber: bp das kahayan

tahun :-

nama file : 49S GERHAN katingan_2004.shp

attribut: NO,KECAMATAN,DESA,DAS,FUNGSI_KAW,JENIS_KEGI,
RA,RI,T1,T2,X,Y

keterangan: kegiatan gerhan 2004 kab katingan

sumber: bp das kahayan

tahun :-

nama file : 49S GERHAN Kotawaringin Barat_2004.shp

attribut: NO,KECAMATAN,DESA,DAS,FUNGSI_KAW,JENIS_KEGI,
RA,RI,T1,T2,X,Y

keterangan: kegiatan gerhan 2004 kab kobar

sumber: bp das kahayan

tahun :-

nama file : 49S GERHAN Kotawaringin Timur_2004.shp

attribut: NO,KECAMATAN,DESA,DAS,FUNGSI_KAW,JENIS_KEGI,
RA,RI,T1,T2,X,Y

keterangan: kegiatan gerhan 2004 kab kotim

sumber: bp das kahayan

tahun :-

nama file : 49S GERHAN palangka_2004.shp

attribut: NO,KECAMATAN,DESA,DAS,FUNGSI_KAW,JENIS_KEGI,
RA,RI,T1,T2,X,Y

keterangan: kegiatan gerhan 2004 kota palangkaraya

sumber: bp das kahayan

tahun :-

nama file : 49S GERHAN Pulang Pisau_2004.shp

attribut: NO,KECAMATAN,DESA,DAS,FUNGSI_KAW,JENIS_KEGI,
RA,RI,T1,T2,X,Y

keterangan: kegiatan gerhan 2004 kab pulang pisau

sumber: bp das kahayan

tahun :-

nama file : 49S GERHAN seruyan_2004.shp

attribut: NO,KECAMATAN,DESA,DAS,FUNGSI_KAW,JENIS_KEGI,
RA,RI,T1,T2,X,Y

keterangan: kegiatan gerhan 2004 kab seruyan

sumber: bp das kahayan

tahun :-

nama file : 49S GERHAN seruyan_2004_2.shp

attribut: NO,KECAMATAN,DESA,DAS,FUNGSI_KAW,JENIS_KEGI,
RA,RI,T1,T2,X,Y

keterangan: kegiatan gerhan 2004 kab seruyan

sumber: bp das kahayan

tahun :-

nama file : 49S GERHAN sukamara_2004.shp

attribut: NO,KECAMATAN,DESA,DAS,FUNGSI_KAW,JENIS_KEGI,
RA,RI,T1,T2,X,Y

keterangan: kegiatan gerhan 2004 kab sukamara

DB_GERHAN05

sumber: bp das kahayan

tahun :-

nama file : 49S GERHAN gumas_2005.shp

attribut: NO,KECAMATAN,DESA,DAS,FUNGSI_KAW,JENIS_KEGI,
RA,RI,T1,T2,T3,T4,X,Y,KODE_JK

keterangan: kegiatan gerhan 2005 kab gunung mas

sumber: bp das kahayan

tahun :-

nama file : 49S GERHAN kapuas_30%%.shp

attribut: NO,KECAMATAN,DESA,DAS,FUNGSI_KAW,JENIS_KEGI,
RA,RI,JENIS_TANA,X,Y,KODE_JK

keterangan: kegiatan gerhan 2005 kab kapuas

sumber: bp das kahayan

tahun :-

nama file : 49S GERHAN kapuas_30%%.shp

attribut: NO,KECAMATAN,DESA,DAS,FUNGSI_KAW,JENIS_KEGI,
RA,RI,JENIS_TANA,X,Y,KODE_JK

keterangan: kegiatan gerhan 2005 kab kapuas

sumber: bp das kahayan

tahun :-

nama file : 49S GERHAN katingan_2005.shp

attribut: NO,KECAMATAN,DESA,DAS,FUNGSI_KAW,J_KEG,
RA,RI,JENIS_TANA,X,Y,KODE_JK

keterangan: kegiatan gerhan 2005 kab katingan

sumber: bp das kahayan

tahun :-

nama file : 49S GERHAN Kotawaringin Barat_2005.shp

attribut: NO,KECAMATAN,DESA,DAS,FUNGSI_KAW,J_KEG,
RA,RI,JENIS_TANA,X,Y,KODE_JK

keterangan: kegiatan gerhan 2005 kab kobar

sumber: bp das kahayan

tahun :-

nama file : 49S GERHAN Kotawaringin Timur_2005.shp

attribut: NO,KECAMATAN,DESA,DAS,FUNGSI_KAW,J_KEG,
RA,RI,JENIS_TANA,X,Y,KODE_JK

keterangan: kegiatan gerhan 2005 kab kotim

sumber: bp das kahayan

tahun :-

nama file : 49S GERHAN lamando_2005.shp

attribut: NO,KECAMATAN,DESA,DAS,FUNGSI_KAW,J_KEG,
RA,RI,JENIS_TANA,X,Y,KODE_JK

keterangan: kegiatan gerhan 2005 kab lamandau

sumber: bp das kahayan

tahun :-

nama file : 49S GERHAN palangka_2005.shp

attribut: NO,KECAMATAN,DESA,DAS,FUNGSI_KAW,J_KEG,
RA,RI,JENIS_TANA,X,Y,KODE_JK

keterangan: kegiatan gerhan 2005 kota palangkaraya

sumber: bp das kahayan

tahun :-

nama file : 49S GERHAN Pulang Pisau_2005.shp

attribut: NO,KECAMATAN,DESA,DAS,FUNGSI_KAW,J_KEG,
RA,RI,JENIS_TANA,X,Y,KODE_JK

keterangan: kegiatan gerhan 2005 kab pulang pisau

sumber: bp das kahayan

tahun :-

nama file : 49S GERHAN sukamara_2005.shp

attribut: NO,KECAMATAN,DESA,DAS,FUNGSI_KAW,J_KEG,
RA,RI,JENIS_TANA,X,Y,KODE_JK

keterangan: kegiatan gerhan 2005 kab sukamara

DB_GERHAN06

sumber: bp das kahayan

tahun :-

nama file : 49S GERHAN kapuas_2005.shp

attribut: ID,KEC,DESA, DE_JK,LUAS,LONG_DMS,LAT_DMS

keterangan: kegiatan gerhan 2006 kab kapuas

sumber: bp das kahayan

tahun :-

nama file : 49S GERHAN Kotawaringin Barat_2006.shp

attribut: NO,KECAMATAN,DESA,DAS,F_KAW,J_KEG,
RA,RI,JENIS_TANA,X,Y

keterangan: kegiatan gerhan 2006 kab kobar

sumber: bp das kahayan
tahun :-
nama file : 49S GERHAN lamandau_2006.shp
attribut: NO,KECAMATAN,DESA,DAS,F_KAW,J_KEG,
RA,RI,JENIS_TANA,X,Y
keterangan: kegiatan gerhan 2006 kab lamandau

sumber: bp das kahayan
tahun :-
nama file : 49S GERHAN Pulang Pisau_2006.shp
attribut: NO,KECAMATAN,DESA,DAS,F_KAW,J_KEG,
RA,RI,JENIS_TANA,X,Y
keterangan: kegiatan gerhan 2006 kab pulang pisau

sumber: bp das kahayan
tahun :-
nama file : 49S GERHAN sukamara_2006.shp
attribut: NO,KECAMATAN,DESA,DAS,F_KAW,J_KEG,
RA,RI,JENIS_TANA,X,Y
keterangan: kegiatan gerhan 2006 kab sukamara

DB_GERHAN07
sumber: bp das kahayan
tahun :-
nama file : 49S GERHAN gumas_07.shp
attribut: NO,KECAMATAN,DESA,DAS,FUNGSI_KAW,JENIS_KEGI,
RA,RI,JENIS_TANA,X,Y
keterangan: kegiatan gerhan 2007 kab gunung mas

sumber: bp das kahayan
tahun :-
nama file : 49S GERHAN kapuas_07.shp
attribut: NO,KECAMATAN,DESA,DAS,FUNGSI_KAW,JENIS_KEGI,
RA,RI,JENIS_TANA,X,Y
keterangan: kegiatan gerhan 2007 kab kapuas

sumber: bp das kahayan
tahun :-
nama file : 49S GERHAN katingan_07.shp
attribut: NO,KECAMATAN,DESA,DAS,FUNGSI_KAW,JENIS_KEGI,
RA,RI,JENIS_TANA,X,Y
keterangan: kegiatan gerhan 2007 kab katingan

sumber: bp das kahayan
tahun :-
nama file : 49S GERHAN Kotawaringin Barat_07.shp
attribut: NO,KECAMATAN,DESA,DAS,FUNGSI_KAW,JENIS_KEGI,
RA,RI,JENIS_TANA,X,Y
keterangan: kegiatan gerhan 2007 kab kobar

sumber: bp das kahayan

tahun :-

nama file : 49S GERHAN Kotawaringin Timur_07.shp

attribut: NO,KECAMATAN,DESA,DAS,FUNGSI_KAW,JENIS_KEGI,
RA,RI,JENIS_TANA,X,Y

keterangan: kegiatan gerhan 2007 kab kotim

sumber: bp das kahayan

tahun :-

nama file : 49S GERHAN lamandau_07.shp

attribut: NO,KECAMATAN,DESA,DAS,FUNGSI_KAW,JENIS_KEGI,
RA,RI,JENIS_TANA,X,Y

keterangan: kegiatan gerhan 2007 kab lamandau

sumber: bp das kahayan

tahun :-

nama file : 49S GERHAN palangka_07.shp

attribut: NO,KECAMATAN,DESA,DAS,FUNGSI_KAW,JENIS_KEGI,
RA,RI,JENIS_TANA,X,Y

keterangan: kegiatan gerhan 2007 kota palangkaraya

sumber: bp das kahayan

tahun :-

nama file : 49S GERHAN Pulang Pisau_07.shp

attribut: NO,KECAMATAN,DESA,DAS,FUNGSI_KAW,JENIS_KEGI,
RA,RI,JENIS_TANA,X,Y

keterangan: kegiatan gerhan 2007 kab pulang pisau

sumber: bp das kahayan

tahun :-

nama file : 49S GERHAN reboisasi 2007-seruyan.shp

attribut: NO,KECAMATAN,DESA,DAS,FUNGSI_KAW,JENIS_KEGI,
RA,RI,JENIS_TANA,X,Y

keterangan: kegiatan gerhan dan reboisasi 2007 kab seruyan

nama file : 49S GERHAN reboisasi 2007_rekap.shp

attribut: NO,KECAMATAN,DESA,DAS,FUNGSI_KAW,JENIS_KEGI,
RA,RI,JENIS_TANA,X,Y

keterangan: rekapitulasi kegiatan gerhan dan reboisasi 2007 seluruh kabupaten

sumber: bp das kahayan

tahun :-

nama file : 49S GERHAN sukamara_07.shp

attribut: NO,KECAMATAN,DESA,DAS,FUNGSI_KAW,JENIS_KEGI,
RA,RI,JENIS_TANA,X,Y

keterangan: kegiatan gerhan 2007 kab sukamara

DINAS KEHUTANAN

TGHK (Tata Guna Hutan Kesepakatan)

sumber: dinas kehutanan provinsi kalteng

tahun :-
nama file : 49S TGHK Dephut.shp
attribut: TGHK,TGHK_ID,CDTGHK,TGHK,LUAS_TGHK,FDSCODE
BPSCODE,PROVINCE
keterangan: sumber data dari Dephut RI

Landcover

BAPLAN

sumber: baplan departemen kehutanan

tahun :-

nama file : 49S Landcover KALTENG 2001.shp

attribut: PLKTG,PLKTG_ID,KELAS,KODE,REKLAS

keterangan: peta tutupan lahan kalteng tahun 2001 intepretasi citra landsat

BAPPEDA KALTENG

sumber: bappeda provinsi kalteng

tahun :-

nama file : 49S tutupan lahan 05.shp

attribut: NEWVEGET, KETERANGAN

keterangan: peta tutupan lahan kalteng tahun 2005 intepretasi citra landsat

BPKH BANJARBARU

sumber: balai pemantapan kawasan hutan banjarbaru

tahun :-

nama file : 49S tutupan_fungsi_hutan.shp

attribut: CAT,ARAHAN_FUN,TUTUPAN,TUTUPAN_DA,KODE

keterangan: peta tutupan lahan Ex PLG tahun 2006 intepretasi citra landsat

EMRP_CKPP_SARVISION

sumber: emrp_ckpp_sarvision

tahun :-

nama file : 49S_lulc2007.shp

attribut: Rowid,VALUE,COUNT

keterangan: data dalam bentuk raster, peta tutupan lahan Ex PLG dan sekitarnya tahun 2007 intepretasi citra radar, data ini bersifat sementara

System Lahan

sumber: bappeda (repprot)

tahun :-

nama file : 49S system lahan.shp

attribut: SYLAHAN,JEN_LAHAN,KODE_DES,LITHOT,JEN_BATU,.....dst

keterangan: peta system lahan yang telah diolah berdasarkan Landsystem RePPROT.

Tanda.....dst. Pada attribute menunjukkan bahwa atribut file ini panjang... sehingga tidak semua dituliskan dalam metadata ini.

Pertambangan

DISTAMBEN KAB. KAPUAS

sumber: dinas pertambangan kabupaten kapuas

tahun : 2008

nama file : 49S tambang.shp

attribut: FID_KPZIRC,PERUSAHAAN,STATUS,GALIAN

keterangan: area kuasa pertambangan yang masuk dalam kawasan Ex PLG

DISTAMBEN KALTENG

sumber: dinas pertambangan provinsi kalteng

tahun : -

nama file : 49S KP emas dan pasir kwarsa.shp

attribut: JENIS_PERS,JENIS_KP,KEGIATAN,PERUSAHAA,MINERAL,
ALAMAT,TAMB,NO_SK,LUAS_HA

keterangan:

sumber: dinas pertambangan provinsi kalteng

tahun : -

nama file : 49S KP zircon.shp

attribut: PERUSAHAAN,LUAS_HA,KODE_WIL,NO_SK, MINERAL,KEGIATAN,
ALAMAT,LOKASI, JENIS_PERS,JENIS_KP

keterangan:

sumber: dinas pertambangan provinsi kalteng

tahun : -

nama file : 49S Wil penambangan rakyat.shp

attribut: PERUSAHAAN,LUAS_HA,WILAYAH,NO_SK, MINERAL,KEGIATAN,
ALAMAT,TAMB,JENIS_KP

keterangan:

Pertanian dan Perkebunan

BPN KAB. KAPUAS dan PULANG PISAU

sumber: badan pertanahan nasional kabupaten kapuas dan pulang pisau

tahun : 2008

nama file : 49S kebun kawasan PLG BPN Kapuas dan P Pisau.shp

attribut: ID,NAMA_PBS,KOMODITI,STATUS,SUMBER

keterangan: perkebunan besar dalam kawasan Ex PLG dan sekitarnya

BPN PROP KALTENG

sumber: badan pertanahan nasional provinsi kalteng

tahun : -

nama file : 49S kebun kawasan PLG BPN KALTENG.shp

attribut: LAYER,NO,NAMA_PERUS,LOK_KAB,NO_SKHGU,STATUS

keterangan:

DINAS PERKEBUNAN KALTENG

sumber: dinas perkebunan provinsi kalteng

tahun : -

nama file : 49S kebun kawasan PLG DisBun KALTENG.shp

attribut: ID,NAMA_PBS,NO_IJIN,TANGGAL_IJ,PEMBERI_IJ,STATUS_IJI,
LUAS_AREAL,KOMODITI,KETERANGAN,STATUS_KAW

keterangan:

RTRW

BAPPEDA KALTENG

sumber: bappeda provinsi kalteng

tahun :2003
nama file : 49S RTRW kawasan PLG 2003.shp
attribut: STATCODE,STATUS,KETERANGAN
keterangan: rencana tata ruang wilayah propinsi Kalimantan tengah tahun 2003 di potong pada bagian PLG saja.

sumber: bappeda provinsi kalteng
tahun :2003
nama file : 49S RTRW 2003 KALTENG.shp
attribut: STATCODE,STATUS,KETERANGAN
keterangan: rencana tata ruang wilayah propinsi Kalimantan tengah tahun 2003.

TANAH

BAPPEDA KALTENG

sumber: bappeda provinsi kalteng
tahun :-
nama file : 49S jenis_tanah_final.shp
attribut: ID,R_SUHU,FISIOGRAFI,LERENG,TANAH,DRAINASE,SISTEM
keterangan: diolah dari peta system lahan RePPROT

PUSLITANAK

sumber: pusat penelitian tanah dan agroklimat (puslitanak)
tahun :-
nama file : 49S kesesuaian lahan blok A kawasan PLG.shp
attribut: SOILA,SOILA_ID,.....,TIPOLOGI,.....,ARAHAN,......dst
keterangan: tanda......dst, pada attribute menunjukkan bahwa atribut file ini panjang... sehingga tidak semua dituliskan dalam metadata ini. penjelasan atribut ada pada tabel excel berjudul "atribut tanah".

sumber: pusat penelitian tanah dan agroklimat (puslitanak)
tahun :-
nama file : 49S kesesuaian lahan blok B kawasan PLG.shp
attribut: SOILA,SOILA_ID,.....,TIPOLOGI,.....,ARAHAN,......dst
keterangan: tanda......dst, pada attribute menunjukkan bahwa atribut file ini panjang... sehingga tidak semua dituliskan dalam metadata ini. penjelasan atribut ada pada tabel excel berjudul "atribut tanah".

sumber: pusat penelitian tanah dan agroklimat
tahun :-
nama file : 49S kesesuaian lahan blok D kawasan PLG.shp
attribut: SOILA,SOILA_ID,.....,TIPOLOGI,.....,ARAHAN,......dst
keterangan: tanda......dst, pada attribute menunjukkan bahwa atribut file ini panjang... sehingga tidak semua dituliskan dalam metadata ini. penjelasan atribut ada pada tabel excel berjudul "atribut tanah".

TRANSMIGRASI

DISTRANS PROP KALTENG

sumber: dinas transmigrasi propinsi kalteng
tahun :-

nama file : 49S Daerah transmigrasi kawasan PLG.shp
attribut: NAMA_UPT,NOMOR,KAWASAN,NAMA_LAIN,ADMINISTRA,
TRANSMIGRA,KETERANGAN
keterangan:kode pada kolom TRANSMIGRA --> pta = pemukiman trans sudah ada, ptc =
pemukiman trans cadangan, ptcr = pemukiman trans cadangan sudah dilakukan studi

Hasil Survey EMRP_CKPP

A. ELEVASI

1. Restorpeat

sumber: restorpeat

tahun : 1999

nama file : 49S elevation-Restorpeat.shp

attribut:ID,LAT,LON,REL_ELEVAT

keterangan: point pengukuran elevasi. penjelasan detil lihat laporan pada Annex 5, Final Report of Central Kalimantan Peat Project expansion component under CKPP Activity 8: Improved policies and coordination between government departments: Peat soil and drainage mapping for the Ex-Mega Rice Project area in Central Kalimantan By Ronald Vernimmen.

2. CKPP

sumber: central Kalimantan peat project (CKPP)

tahun : 2007

nama file : 49S elevation-CKPP2007.shp

attribut:ID,LAT,LON,REL_ELEVAT

keterangan: point pengukuran elevasi. penjelasan detil lihat laporan pada Annex 5, Final Report of Central Kalimantan Peat Project expansion component under CKPP Activity 8: Improved policies and coordination between government departments: Peat soil and drainage mapping for the Ex-Mega Rice Project area in Central Kalimantan By Ronald Vernimmen.

3a. Bakosurtanal - DGPS

sumber: bakosurtanal

tahun : 2007

nama file : 49S elevation-DGPS.shp

attribut: ID,LAT,LON,ELEVATION,RELIABLE

keterangan: point pengukuran elevasi. penjelasan detil lihat laporan pada Annex 5, Final Report of Central Kalimantan Peat Project expansion component under CKPP Activity 8: Improved policies and coordination between government departments: Peat soil and drainage mapping for the Ex-Mega Rice Project area in Central Kalimantan By Ronald Vernimmen.

3b. Bakosurtanal – poin triangulasi

sumber: bakosurtanal

tahun : 2004

nama file : 49S Bakosurtanal-triangulation.shp

attribut: ID,LON,LAT

keterangan: penjelasan detil lihat laporan pada Annex 5, Final Report of Central Kalimantan Peat Project expansion component under CKPP Activity 8: Improved policies and coordination between government departments: Peat soil and drainage mapping for the Ex-Mega Rice Project area in Central Kalimantan By Ronald Vernimmen.

3c. Bakosurtanal – DGPS benchmark

sumber: bakosurtanal

tahun : 2007

nama file : 49S benchmark-DGPS.shp

attribut: CODE,LAT,LON,ELEVATION

keterangan: point pengukuran elevasi. penjelasan detil lihat laporan pada Annex 5, Final Report of Central Kalimantan Peat Project expansion component under CKPP Activity 8: Improved policies and coordination between government departments: Peat soil and drainage mapping for the Ex-Mega Rice Project area in Central Kalimantan By Ronald Vernimmen.

4. laser altimetry

sumber: kalteng consultants

tahun : 2007

nama file : 49S elevation-laseraltimetry.shp

attribut: X,Y,Z,ElevCor

keterangan: point pengukuran elevasi. penjelasan detil lihat laporan pada Annex 5, Final Report of Central Kalimantan Peat Project expansion component under CKPP Activity 8: Improved policies and coordination between government departments: Peat soil and drainage mapping for the Ex-Mega Rice Project area in Central Kalimantan By Ronald Vernimmen.

5. PSDM-CKPP

sumber: wetlands international, delf hydraulics

tahun : 2007

nama file : 49S elevation-PSDM-CKPP.shp

attribut: DATE_TIME,NO_FS,LAT,LON,NO_DIVER,ELEVATION,
SURVEYOR,FREEBOARD,RELIABLE

keterangan: point pengukuran elevasi. penjelasan detil lihat laporan pada Annex 5, Final Report of Central Kalimantan Peat Project expansion component under CKPP Activity 8: Improved policies and coordination between government departments: Peat soil and drainage mapping for the Ex-Mega Rice Project area in Central Kalimantan By Ronald Vernimmen.

6. SRTM

sumber: delf hydraulics

tahun : 1999

directory : srtm-.....

attribut: raster

keterangan: data bisa dilihat pada sub direktori srtm.... Dibawah folder SRTM. penjelasan detil lihat laporan pada Annex 5, Final Report of Central Kalimantan Peat Project expansion component under CKPP Activity 8: Improved policies and coordination between government departments: Peat soil and drainage mapping for the Ex-Mega Rice Project area in Central Kalimantan. By Ronald Vernimmen.

B. GAMBUT dan TANAH

1. Restorpeat

sumber: restorpeat

tahun : 1999

nama file : 49S peatdepth-Restorpeat.shp

attribut: ID,LAT,LON,PEATDEPTH

keterangan: point pengukuran kedalaman gambut. penjelasan detil lihat laporan pada Annex 5, Final Report of Central Kalimantan Peat Project expansion component under CKPP Activity 8: Improved policies and coordination between government departments: Peat soil and drainage mapping for the Ex-Mega Rice Project area in Central Kalimantan By Ronald Vernimmen.

2. BOS-MAWAS

sumber: bos-mawas

tahun : 2003-2005

nama file : 49S peat-BOSMAWAS.shp

attribut: DATE,ID,LAT,LON,PEATDEPTH

keterangan: point pengukuran kedalaman gambut. penjelasan detil lihat laporan pada Annex 5, Final Report of Central Kalimantan Peat Project expansion component under CKPP Activity 8: Improved policies and coordination between government departments: Peat soil and drainage mapping for the Ex-Mega Rice Project area in Central Kalimantan By Ronald Vernimmen.

3. CKPP

sumber: ckpp

tahun : 2005-2007

nama file : 49S peat-CKPP.shp

attribut: DATE,ID,LAT,LON,PEATDEPTH,PEATTYPE,LANDUSE,LANDUSE2

keterangan: point pengukuran kedalaman gambut. penjelasan detil lihat laporan pada Annex 5, Final Report of Central Kalimantan Peat Project expansion component under CKPP Activity 8: Improved policies and coordination between government departments: Peat soil and drainage mapping for the Ex-Mega Rice Project area in Central Kalimantan By Ronald Vernimmen.

4a. Puslitanak

sumber: puslitanak (pusat penelitian tanah dan agroklimat)

tahun : 1998

nama file : 49S peat-Puslitanak.shp

attribut: ID,LON,LAT,AREA,PEAT_DEPTH

keterangan: point pengukuran kedalaman gambut. penjelasan detil lihat laporan pada Annex 5, Final Report of Central Kalimantan Peat Project expansion component under CKPP Activity 8: Improved policies and coordination between government departments: Peat soil and drainage mapping for the Ex-Mega Rice Project area in Central Kalimantan By Ronald Vernimmen.

4b. Puslitanak

sumber: puslitanak (pusat penelitian tanah dan agroklimat)

tahun : 1998

nama file : 49S soils-Puslitanak.shp

attribut: AREA,ID,LAT,LON,HORIZON_NR,HORIZON_TYPE, START_HORI,END_HORIZO,SUBGROUP,GREAT_GROUP,SOIL_REACT

keterangan: point pengambilan sample tanah. penjelasan detil lihat laporan pada Annex 5, Final Report of Central Kalimantan Peat Project expansion component under CKPP Activity 8: Improved policies and coordination between government departments: Peat soil and drainage mapping for the Ex-Mega Rice Project area in Central Kalimantan By Ronald Vernimmen.

5. PSDM-CKPP

sumber: wetlands international, delft hydraulic

tahun : 2007

nama file : 49S peat_and_soils-PSDM-CKPP.shp

attribut: AREA,ID,LAT,LON,BURNT,VANPOST,MINERALTOP,
ACIDSULPHA,PEATDEPTH,PEATTYPE,SUBSOIL

keterangan: point pengambilan sample. penjelasan detil lihat laporan pada Annex 5, Final Report of Central Kalimantan Peat Project expansion component under CKPP Activity 8: Improved policies and coordination between government departments: Peat soil and drainage mapping for the Ex-Mega Rice Project area in Central Kalimantan By Ronald Vernimmen.

C. PENUTUPAN dan PENGGUNAAN LAHAN

1. CKPP

sumber: ckpp

tahun : 2005-2007

nama file : 49S landuse-CKPP.shp

attribut: ID,LAT,LON,LANDUSE,LANDUSE2

keterangan: titik pengamatan/pengambilan sample. penjelasan detil lihat laporan pada Annex 5, Final Report of Central Kalimantan Peat Project expansion component under CKPP Activity 8: Improved policies and coordination between government departments: Peat soil and drainage mapping for the Ex-Mega Rice Project area in Central Kalimantan By Ronald Vernimmen.

2. PSDM-CKPP

sumber: wetlands international, delf hydraulics

tahun : 2007

nama file : 49S LULC-PSDM-CKPP.shp

attribut: DATE,ID,LAT,LON,DIRECTION1,VEGETATI_1,DIRECTION2,
VEGETATI_2,SURVEYOR,PHOTODIR

keterangan: titik pengamatan/pengambilan sample. penjelasan detil lihat laporan pada Annex 5, Final Report of Central Kalimantan Peat Project expansion component under CKPP Activity 8: Improved policies and coordination between government departments: Peat soil and drainage mapping for the Ex-Mega Rice Project area in Central Kalimantan By Ronald Vernimmen.

3. LANDUSE-LANDCOVER (SARVISION)

sumber: sarvision, netherlands

tahun : 2007

directory : lulc 2007

attribut: raster

keterangan: data dalam bentuk raster. penjelasan detil lihat laporan pada Annex 5, Final Report of Central Kalimantan Peat Project expansion component under CKPP Activity 8: Improved policies and coordination between government departments: Peat soil and drainage mapping for the Ex-Mega Rice Project area in Central Kalimantan By Ronald Vernimmen.

D. SISTEM DRAINASE

1. SUNGAI dan KANAL (BAKOSURTANAL)

sumber: bakosurtanal

tahun : -

nama file : 49S canal_and_small_rivers-Kalteng.shp

attribut: .. field hanya dalam bentuk kode

keterangan:

penjelasan detil lihat laporan pada Annex 5, Final Report of Central Kalimantan Peat Project expansion component under CKPP Activity 8: Improved policies and coordination between government departments: Peat soil and drainage mapping for the Ex-Mega Rice Project area in Central Kalimantan By Ronald Vernimmen.

sumber: bakosurtanal

tahun : -

nama file : 49S major_rivers-Kalteng.shp

attribut: .. field hanya dalam bentuk kode

keterangan:

penjelasan detil lihat laporan pada Annex 5, Final Report of Central Kalimantan Peat Project expansion component under CKPP Activity 8: Improved policies and coordination between government departments: Peat soil and drainage mapping for the Ex-Mega Rice Project area in Central Kalimantan By Ronald Vernimmen.

sumber: bakosurtanal

tahun : -

nama file : 49S polygon_rivers-Kalteng.shp

attribut: ID,LOC_ID,LABEL

keterangan:

penjelasan detil lihat laporan pada Annex 5, Final Report of Central Kalimantan Peat Project expansion component under CKPP Activity 8: Improved policies and coordination between government departments: Peat soil and drainage mapping for the Ex-Mega Rice Project area in Central Kalimantan By Ronald Vernimmen.

sumber: bakosurtanal

tahun : -

nama file : 49S MainRivers.shp

attribut: ID,LOC_ID,LABEL

keterangan:

penjelasan detil lihat laporan pada Annex 5, Final Report of Central Kalimantan Peat Project expansion component under CKPP Activity 8: Improved policies and coordination between government departments: Peat soil and drainage mapping for the Ex-Mega Rice Project area in Central Kalimantan By Ronald Vernimmen.

2. PSDM-CKPP

sumber: wetlands international, delf hydraulics

tahun : 2007

nama file : 49S drainage-characteristic-PSDM-CKPP.shp

attribut: DATE,TIME,GPSDATETIM,ID,LAT,LON,PHOTODIR,WIDTH,DEPTH_MID,DEPTH_LEFT,DEPTH_RIGHT,DAM,OBSTACLE,SIDE_CHANN,FLOWVELOC,FLOW_DIRECT,FREEBOARD,SURVEYOR,GW_50M,GW_500M,GW_1000M

keterangan: titik pengamatan/pengambilan sample. penjelasan detil lihat laporan pada Annex 5, Final Report of Central Kalimantan Peat Project expansion component under CKPP Activity 8: Improved policies and coordination between government departments: Peat soil and drainage mapping for the Ex-Mega Rice Project area in Central Kalimantan By Ronald Vernimmen.

E. AIR PERMUKAAN dan KEDALAMAN AIR TANAH

Pengukuran pada air permukaan (freeboard) dan kedalaman air tanah sudah tercakup dalam data system drainase.

F. TOPOGRAPHY

1. BAKOSURTANAL

sumber: bakosurtanal
tahun : -
nama file : 49S cities.shp
attribut: NAMA_UNSUR, TOPONIMI
keterangan: point pusat pemukiman

sumber: bakosurtanal
tahun : -
nama file : 49S main_cities.shp
attribut: NAMA_UNSUR, TOPONIMI
keterangan: point kota kecamatan dan kabupaten

sumber: bakosurtanal
tahun : -
nama file : 49S coastline.shp
attribut:
keterangan: garis pantai

G. MONITORING

1. WATER LEVEL

sumber: psdm-ckpp
tahun : 2007
nama file : 49S Diver_Location.shp
attribut: LOCATION, LAT, LON, BM
keterangan: point pemantauan alat "diver"
penjelasan detil lihat laporan pada Annex 5, Final Report of Central Kalimantan Peat Project expansion component under CKPP Activity 8: Improved policies and coordination between government departments: Peat soil and drainage mapping for the Ex-Mega Rice Project area in Central Kalimantan By Ronald Vernimmen.

Citra Satelit PLG (EMRP)

Lensa Optik

LANDSAT

sumber: landsat, bappeda kalteng
tahun : 1994
nama folder: 118_062_24 Juni 1994
keterangan: citra dalam bentuk komposit 543 dan bentuk asal band 3,4 dan 5.

sumber: landsat, download
tahun : 2000
nama folder: 118_062-16 Juli 2000
keterangan: citra dalam bentuk komposit 543 dan bentuk asal band 1,2,3,4,5, 6.1,6.2,7 dan 8.

sumber: landsat, download
tahun : 2003
nama folder: 118_062-22 Mei 2003
keterangan: citra dalam bentuk komposit 543 dan bentuk asal band 1,2,3,4,5, 6.1,6.2,7 dan 8.

sumber: landsat, bappeda kalteng
tahun : 2005

nama folder: 118_062_061_05 Oktober 2005

keterangan: citra dalam bentuk komposit 543 dan bentuk asal band 3,4,5.

sumber: landsat, sarvision

tahun : 2007

nama folder: 118_062_04 Juli 2007

keterangan: citra dalam bentuk asal, band 1,2,3,4,5, 6.1,6.2,7 dan 8, dilengkapi dengan gap mask untuk menutup striping pada citra landsat setelah tahun 2003

sumber: landsat, sarvision

tahun : 2007

nama folder: 118_061_05 Agustus 2007

keterangan: citra dalam bentuk asal, band 1,2,3,4,5, 6.1,6.2,7 dan 8, dilengkapi dengan gap mask untuk menutup striping pada citra landsat setelah tahun 2003

Radars

ALOS - PALSAR

sumber: alos – sarvision netherlands

tahun : 2007

nama folder: palsar

keterangan: citra radar

RBI EMRP

1. *BAKOSURTANAL*

sumber: bakosurtanal

tahun : -

keterangan : folder RBI EMRP berisi data asli RBI dalam format PC-Arc info yang dibeli dari bakosurtanal. Penjelasan lebih lengkap dapat dibaca pada "Baca Dulu Baru Kerja" yang ada pada folder RBI EMRP.

Annex 3 Collection of Composed Maps

1. Maps Produced During the Master Plan

The following maps are reproduced in a separate atlas of the Ex-Mega Rice Project area:

1. Areal Kerja Rencana Induk EMRP (Inpres No.2 2007)
2. Batas Kabupaten dalam Kawasan Rencana Induk EMRP (Versi Bappeda Provinsi berdasarkan pada RTRWP 2003)
3. Batas Kabupaten dalam Kawasan Rencana Induk EMRP (Versi Dinas Transmigrasi 2006)
4. Batas Kecamatan dalam kawasan Rencana Induk EMRP (Versi Bappeda Provinsi 2003)
5. Batas Kecamatan dalam kawasan EMRP MP (Versi Dinas Transmigrasi 2006)
6. Batas Kecamatan dalam kawasan EMRP MP (Versi Bakosurtanal)
7. Sebaran Desa dan Kota dalam Kawasan Rencana Induk EMRP (Versi Bappeda Provinsi 2007)
8. Sebaran Desa dan Kota dalam Kawasan Rencana Induk EMRP (Versi Bakosurtanal
9. Sebaran Desa dan Kota dalam Kawasan Rencana Induk EMRP (Versi Dinas Transmigrasi2007)
10. Jaringan jalan dalam Kawasan Rencana Induk (Versi Bappeda Provinsi 2007)
11. Airport dan Pelabuhan dalam Kawasan Rencana Induk EMRP (Versi Bappeda Provinsi 2007)
12. Jaringan Sungai, Kanal dan Irigasi dalam Kawasan Rencana Induk EMRP (Versi Bakosurtanal)
13. Elevasi dalam Kawasan Rencana Induk EMRP (Versi Bappeda Provinsi berdasarkan RePPRoT 1986/87)
14. Elevasi dalam Kawasan Rencana Induk EMRP (Versi Rencana Induk EMRP berdasarkan WI, CKPP, Delf Hiraulic)
15. Formasi Geologi dalam Kawasan Rencana Induk EMRP (Versi Bappeda Provinsi berdasarkan RePPRoT 1986/87)
16. Kedalaman Gambut dalam Kawasan Rencana Induk EMRP (Versi Bappeda Province berdasarkan RePPRoT 1986/87)
17. Kedalaman Gambut dalam Kawasan Rencana Induk EMRP versi 1 (Versi Rencana Induk EMRP berdasarkan Wetland International)
18. Tanah dalam Kawasan Rencana Induk EMRP (Versi Bappeda Province berdasarkan RePPRoT 1986/87)
19. Lahan yang cocok untuk Tanaman Pangan dalam kawasan Rencana Induk EMRP (Puslitanak 1996/97)
20. Lahan yang cocok untuk Sawah di kawasan Rencana Induk (Puslitanak 1996/97)
21. Tata Guna Hutan Kesepakatan (Forest Agreement Utilization) dalam kawasan Rencana Induk EMRP (MoF 1986)

22. RTRWP 2003 dalam kawasan Rencana Induk EMRP (Provinsi Bappeda 2003)
23. Zonasi berdasarkan INPRES 2 2007 dalam kawasan Rencana Induk EMRP (Inpres 2 2007)
24. Rencana Induk berdasarkan INPRES 2 2007 dalam kawasan Rencana Induk EMRP (Inpres 2 2007)
25. Penggunaan Lahan dan Tutupan Lahan dalam kawasan Rencana Induk EMRP (Provinsi Bappeda 2005)
26. Penggunaan Lahan dan Tutupan Lahan dalam kawasan Rencana Induk EMRP (Rencana Induk EMRP berdasarkan pada Sarvison 2007)
27. Distribusi Transmigrasi dalam kawasan Rencana Induk EMRP (Versi Dinas Transmigrasi dalam 2008)
28. Konsesi Perkebunan dalam kawasan Rencana Induk EMRP (Versi BPN Province 2007)
29. Konsesi Perkebunan dalam kawasan Rencana Induk EMRP (Versi BPN Kapuas dan BPN P.Pisau 2008)
30. Konsesi Perkebunan dalam kawasan Rencana Induk EMRP (Versi Dinas Perkebunan Provinsi 2008)
31. Konsesi Pertambangan dalam kawasan Rencana Induk EMRP (Versi Bappeda berdasarkan Dinas Pertambangan Province 2007)
32. Konsesi Pertambangan dalam kawasan Rencana Induk EMRP (Versi Dinas Pertambangan Kapuas 2008)
33. Peta Banjir dalam kawasan Rencana Induk EMRP (Rencana Induk EMRP 2008)

2. Technical Notes on the Maps Produced During the Master Plan

Data Yang Tersedia Saat ini

Data-data spasial yang berhubungan dengan kawasan Eks-Pengembangan Lahan Gambut (PLG/EMRP) telah di kumpulkan. Data-data tersebut di kumpulkan dari berbagai dinas pemerintah yang memiliki peran dalam pengembangan program-program yang berlokasi di area EMRP.

Data-data spasial yang telah terkumpul berasal dari instansi yang ada ditingkat propinsi maupun yang berasal dari kabupaten. Banyak data dengan theme yang sama namun berbeda versinya. Hal ini dikarenakan data berasal dari sumber atau instansi yang berbeda. Disamping perbedaan sumber data, perbedaan juga disebabkan belum adanya forum GIS ataupun lembaga sejenis di tingkat Propinsi maupun Kabupaten untuk membuat standarisasi data spasial diantara mereka sendiri. Sehingga perbedaan-perbedaan ini akan selalu terjadi.

Sumber lain penyebab perbedaan adalah tidak semua instansi yang berhubungan dengan perencanaan dan penggunaan ruang memiliki unit GIS sendiri, umumnya mereka menyerahkan sepenuhnya kepada pihak ketiga (Konsultan). Dengan tidak adanya unit atau operator GIS pada instansi tersebut maka data-data spasial yang dibuat oleh konsultan menjadi tidak berguna karena tidak dimanfaatkan. Juga karena ketiadaan unit atau operator GIS menyebabkan instansi tersebut tidak mensyaratkan dalam TOR konsultan untuk menyerahkan data spasial yang telah mereka buat, hal ini sangat merugikan karena produk hanya dalam bentuk hardcopy yang umumnya hanya menjadi dokumen yang jarang digunakan.

Instansi yang semestinya mempunyai unit GIS atau minimal memiliki operator GIS adalah; Bappeda, Kehutanan, BPN, PU, Transmigrasi, Perkebunan, Pertambangan, Pertanian, Perikanan & Kelautan, serta Tata Pemerintahan.

Rencana Tata Ruang Propinsi (RTRWP)

Belum disetujuinya revisi RTRWP 2003 menjadi RTRWP 2007 juga menimbulkan permasalahan tersendiri. Disebutkan dalam draft RTRWP 2007 bahwa untuk kawasan PLG penyusunan ruang sengaja dikosongkan yang kemudian akan diisi dengan produk final ruang hasil Inpres no 2 tahun 2007 dan perubahannya.

Dengan demikian secara hukum RTRWP yang resmi digunakan saat ini adalah RTRWP 2003. Masalah kemudian timbul karena banyak kekurangan dalam RTRWP 2003 ini. Mulai dari tidak akuratnya tema hidrologi (Sungai, Kanal) hingga tidak disepakatinya batas antar Kabupaten. Menurut Kabid Tata ruang Bappeda Propinsi saat ini batas antar kabupaten yang digunakan adalah batas menurut RTRWP 2003, namun kenyataannya banyak Kabupaten yang sudah merubah batas kabupatennya. Sebagai contoh Kota Palangkaraya telah merubah batas wilayahnya sesuai dengan RTRWK Palangkaraya yang baru (tahun ?). Demikian juga dengan pecahnya Kabupaten Kapuas menjadi 2 Kabupaten yakni Kabupaten Kapuas dan Pulang Pisau. Pecahnya 2 Kabupaten ini masih menyisakan masalah tata batas.

Masalah tata batas antar 2 Kabupaten ini kemudian merambat pada masalah lain. Sebagai contoh terjadinya overlapping kebun antara **PT. Menteng Kencana Mas** di Kabupaten Pulang Pisau dan **PT. Sepalar Yasa Kartika** dan **PT. Indosiam Agro Makmur** dipihak Kabupaten Kapuas. Overlapping antara ketiga perusahaan ini mencakup luas **7.368** Ha.

Beberapa Catatan Pada Data-data Spasial

Catatan teknis dan komentar pada data spasial yang ada dapat dilihat pada tabel berikut:

Map No	Theme	Sumber	Komentar
1	Areal Kerja EMRP MP	Bappeda Propinsi (Inpres No.2 2007)	
2-3	Administrasi Batas Kabupaten	Bappeda Propinsi (2003)	<ul style="list-style-type: none"> ● Kesepakatan menggunakan data RTRWP 2003 untuk tata batas ternyata tidak dipatuhi terbukti dengan dikeluarkannya batas-batas menurut RTRW mereka yang baru. Contoh batas Kota Palangkaraya, dan batas antara Kabupaten kapuas dan Pulang Pisau
4-6	Administrasi Batas Kecamatan	Bappeda Propinsi (2003) Dinas Transmigrasi Propinsi (2007) Bappeda Kabupaten / Kota (?)	<ul style="list-style-type: none"> ● Bappeda Propinsi tidak menentukan batas kecamatan, batas Kecamatan ditentukan oleh Kabupaten. ● Data theme batas Kecamatan yang ada saat ini tidak sesuai lagi dengan realita dilapangan, karena bayak pemekaran kecamatan. ● Karena belum ada data standar, data batas kecamatan yang ada merupakan intepretasi masing-masing operator GIS pada instansi yang mempunyai kepentingan pembangunan di wilayah tersebut.
7-9	Persebaran Desa dalam Kawasan EMRP MP	Bappeda Propinsi (BPN) (?) Bakosurtanal (2001?)	<ul style="list-style-type: none"> ● Data theme ini umumnya berbentuk point, dengan tingkat kelengkapan data yang berbeda. Yang paling lengkap adalah data yang berasal dari BPN yang diadopsi oleh Bappeda.
10	Jaringan Jalan	Bappeda Propinsi (2007) Bakosurtanal (2001?)	<ul style="list-style-type: none"> ● Jaringan jalan secara umum tidak begitu bermasalah karena bisa dilakukan updating data melalui data citra terbaru atau tracking langsung dilapangan.
11	Bandara & Pelabuhan	Bappeda Propinsi (2007)	
12	Jaringan Sungai dan Kanal	Bakosurtanal (2001?)	<ul style="list-style-type: none"> ● Jaringan Sungai dan Kanal secara umum tidak begitu bermasalah karena bisa dilakukan updating data melalui data citra terbaru atau tracking langsung dilapangan.
13-14	Elevasi	Bappeda Propinsi (RePProT (1986/87)) WI,CKPP,Delf Hidraulic	<ul style="list-style-type: none"> ● Data elevasi ini merupakan data Meso dengan skala 1:250.000 yang diambil dari data RePProT. Data ini agak janggal mengingat adanya lompatan elevasi yang sangat jauh dari 3 m dpl yang berada ditepi laut dan langsung melonjak ke nilai 25 m dpl.

Map No	Theme	Sumber	Komentar
			<ul style="list-style-type: none"> Data elevasi dari hasil pengukuran lapangan dan DEM
15	Formasi Geologi	Bappeda Propinsi (P3G Geologi(1999/2000)	<ul style="list-style-type: none"> Data geologi ini merupakan data Meso dengan skala 1:250.000 yang diambil dari data Pusat Penelitian dan Pengembangan Geologi skala 1:250.000 (P3G).
16-17	Ketebalan / Kedalaman Gambut	Wetland Internasional Bappeda Propinsi (RePProT (1986/87))	<ul style="list-style-type: none"> Data ini merupakan data tentative dari WI Data gambut ini merupakan data Meso dengan skala 1:250.000 yang diambil dari data RePProT.
18	Jenis Tanah	Bappeda Propinsi (RePProT (19816/87))	<ul style="list-style-type: none"> Data ini merupakan data Meso dengan skala 1:250.000 yang diambil dari data RePProT.
19-20	Kesesuaian Lahan,Padi Hortikultura dll	Puslitanak (1986)	<ul style="list-style-type: none"> Data ini hanya tersedia untuk area Blok A,B dan D
21	Tata Guna Hutan Kesepakatan	Departemen Kehutanan (1986)	<ul style="list-style-type: none"> Untuk Kalimantan Tengah paduserasi antara TGHK dan RTRWP belum tercapai. Belum selesainya permasalahan ini menyebabkan konsep penataan ruang menjadi terkendala
22	RTRWP 2003	Bappeda Propinsi (2003) Perda 8 tahun 2003	<ul style="list-style-type: none"> Jaringan sungai dan danau tidak sesuai dengan citra satelit yang sudah terkoreksi geometrik dan RBI sebagai data dasar
23-24	Arahan Rencana Induk Kawasan PLG berdasarkan Inpres No.2 Tahun 2007	Bappeda Propinsi (Peta lampiran Inpres)	<ul style="list-style-type: none"> Sebagian kecil daratan yang berada di tepi sungai hilang, tidak sesuai dengan citra landsat dan RBI sebagai peta dasar Ada dualisme dalam memandang peta lampiran inpres ini. Pandangan pertama adalah yang menganggap Inpres sebagaimana adanya yang lebih berorientasi keproyekan dan pandangan kedua yang menganggap Inpres hanya sebagai arahan, artinya masih memungkinkan adanya perubahan.
25-26	Land Use dan Land Cover EMRP MP	Bappeda Propinsi (2005) Sarvision (2007)	<ul style="list-style-type: none"> Dasar intepretasi menggunakan Citra landsat TM 7 resolusi 30 m tahun 2005 dengan legenda mengikuti aturan Departemen Kehutanan. Dasar intepretasi menggunakan Citra Radar resolusi 50 m dengan mengacu pada legenda FAO

Map No	Theme	Sumber	Komentar
27	Transmigrasi	Dinas Transmigrasi (2008)	<ul style="list-style-type: none"> • Alokasi lahan transmigrasi • Banyak alokasi lahan untuk transmigrasi yang overlap dengan alokasi lahan untuk perkebunan dan tambang
28-30	Perkebunan	Dinas Perkebunan Propinsi (2008) BPN Propinsi (2007) BPN Kapuas (2008) BPN P.Pisau (2008)	<ul style="list-style-type: none"> • Perkebunan merupakan isu utama dalam penyusunan MP ini mengingat banyak lahan perkebunan yang di plot pada area bergambut tebal. Kabupaten Pulang Pisau dan Kapuas merupakan Kabupaten dalam EMRP MP area yang paling banyak memiliki pencadangan lokasi untuk Kebun ini. • Data yang dibuat oleh Dinas perkebunan bisa berbeda dengan data yang dibuat oleh BPN, hal ini dikarenakan pihak perkebunan hanya memberikan arahan lokasi sedangkan pihak BPN turun kelapangan untuk melihat kesesuaian lokasi dan selanjutnya menerbitkan ijin lokasi. • Khusus untuk P.Pisau tidak ada satupun instansinya yang didukung oleh GIS sehingga pembuatan peta bergantung pada BPN Propinsi atau peta sketsa sebagai kontrol. • Ketidak sepakatan tata batas antara Kabupaten P.Pisau dan Kapuas menyebabkan ada alokasi perkebunan yang bertumpuk pada satu lokasi. Kabupaten P.Pisau mengeluarkan ijin untuk PT. Menteng Kencana Mas yang statusnya saat ini menuju proses HGU, sementara kabupaten kapuas menerbitkan ijin lokasi untuk PT. Sepalar Yasa Kartika dan PT. Indosiam Agro Makmur. • Banyak alokasi lahan untuk perkebunan yang overlap dengan alokasi lahan untuk transmigrasi dan tambang
31-32	Pertambangan	Bappeda Propinsi (Dinas Pertambangan Propinsi) Dinas Pertambangan Kabupaten Kapuas	<ul style="list-style-type: none"> • Data dari Dinas Pertambangan Propinsi hanya menunjukkan adanya KP pertambangan Zircon dalam status Ijin Eksplorasi di lokasi Blok E. • Data dari Dinas Pertambangan Kabupaten Kapuas lebih lengkap, dengan adanya KP baru di Blok D dalam status Penyelidikan Umum • Alokasi lahan untuk tambang di bagian selatan kapuas ada yang overlap dengan alokasi lahan untuk perkebunan dan transmigrasi



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