

Management Instituut

Grondregistratie en Landinformatie Systeem

The National Basemap of Suriname

NBKS unit, Business Development

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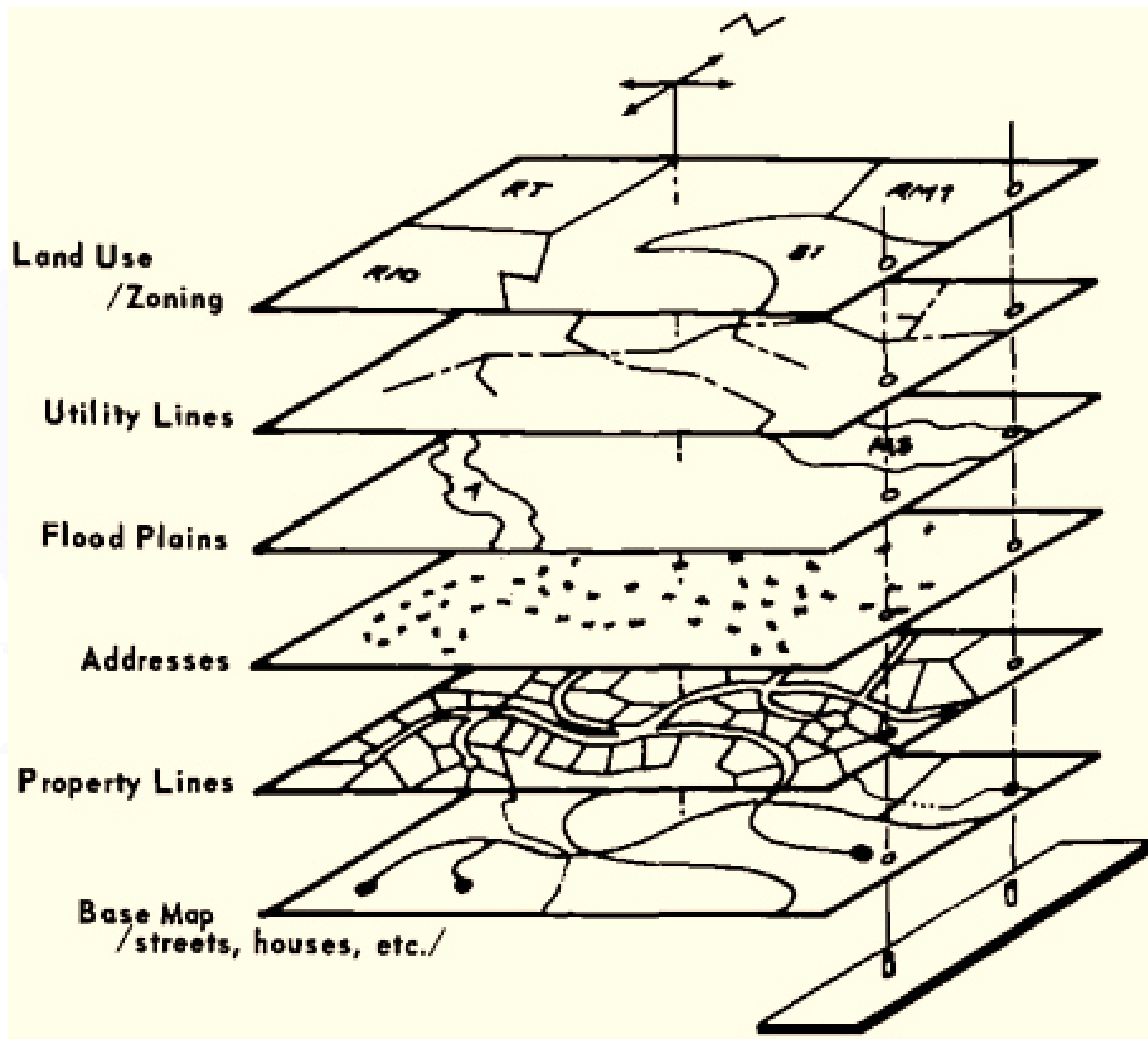


Definition

- *'A base map is the graphic representation at a specified scale of selected fundamental topographic information; used as a framework upon which additional data of a specialized nature may be compiled'*
- *Basic information is:*
 - Sovereign and Administrative boundaries;
 - Transport networks;
 - Buildings;
 - Hydrography;
 - Contour lines;
 - Vegetation;
 - Geographical names (Toponyms).



A surface upon which additional data is projected

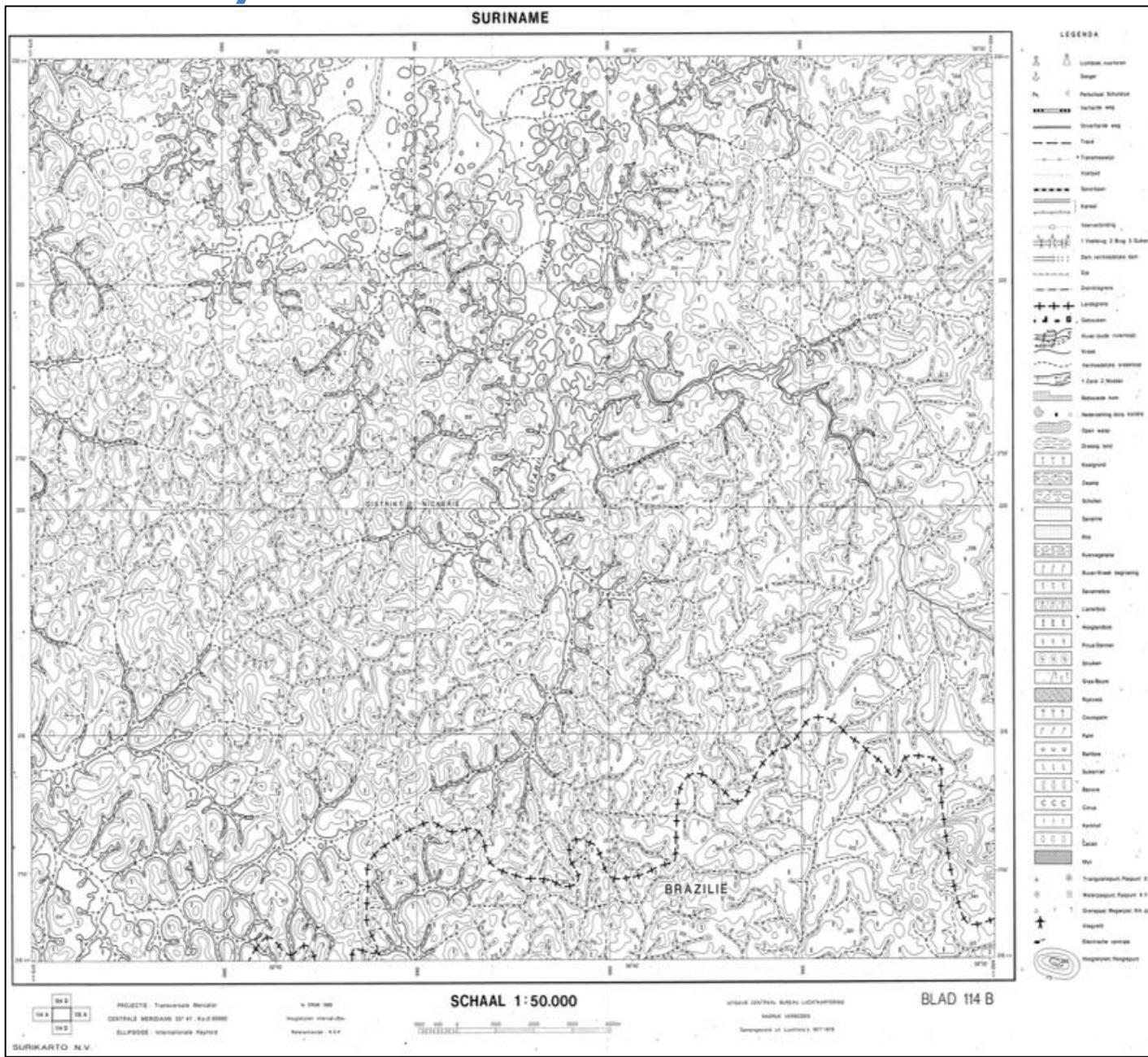


Why a national basemap?

- Eliminates duplication of base data
- Spatial data can be more easily shared and made available to stakeholders (government, private sector, citizens) via the basic map;
- Country borders can be (more) accurately mapped/digitized.
- Overall better spatial planning with one base map, because spatial plans (e.g. zoning) can be created and presented on the same surface.
- Better monitoring and planning of (new) utilities (cables, pipelines, street lighting, etc.) by mapping them on the same base map.

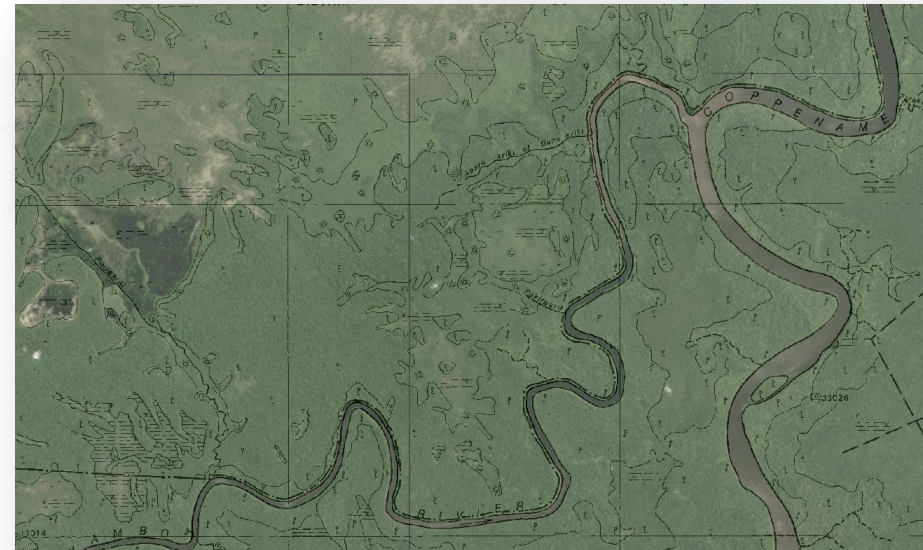
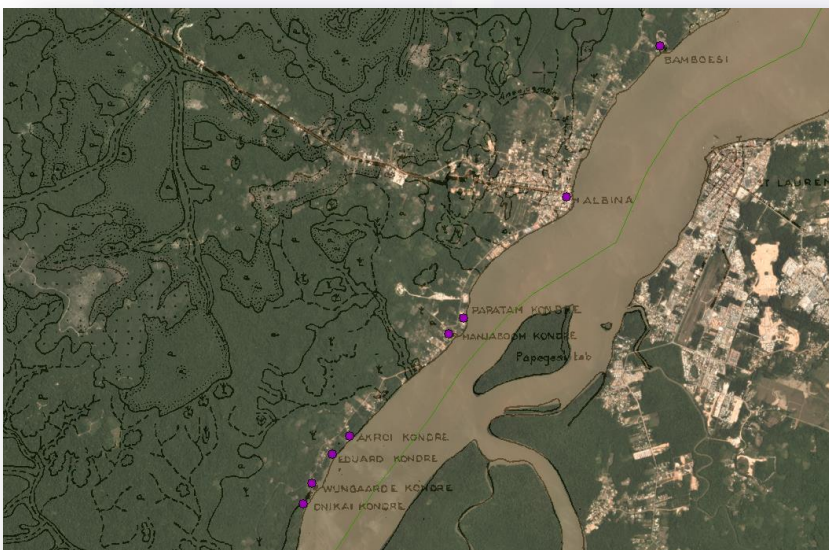
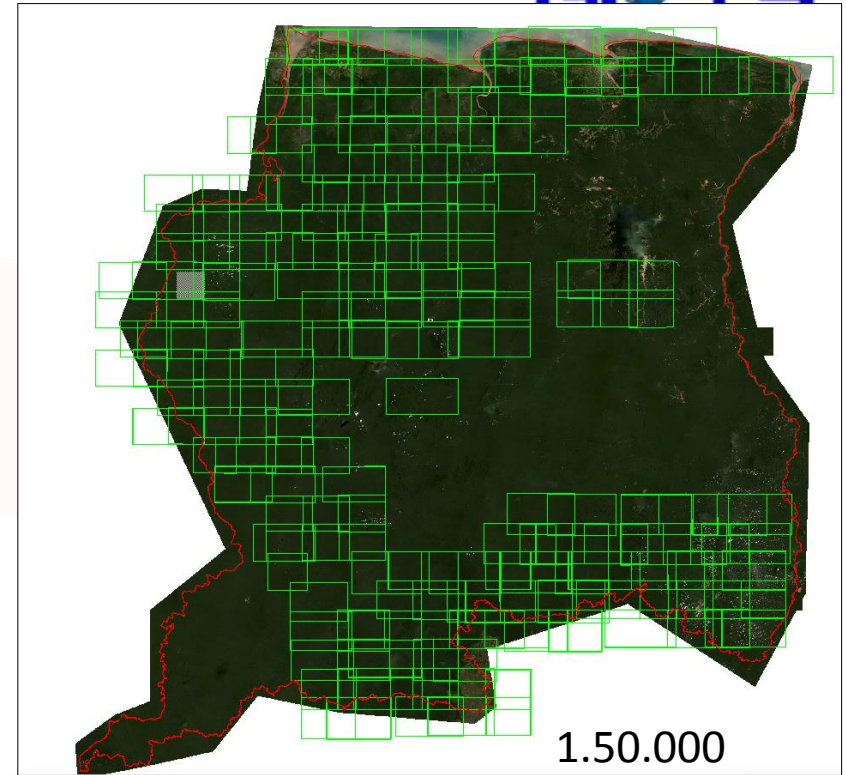
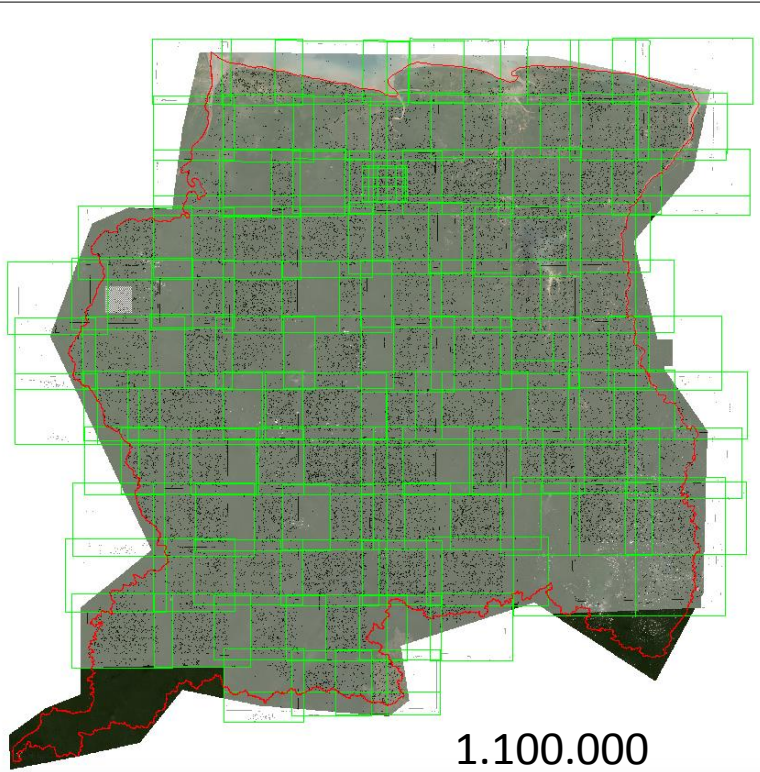


History



- Last topographic basemap(s) from 1950 and 1970: paper map sheets, by the Central Bureau for Aerial mapping (CBL)
- Different scales varying between 1:20.000 to 1:1.000.000
- Based on different (old) reference systems and map projections

CBL maps georeferenced



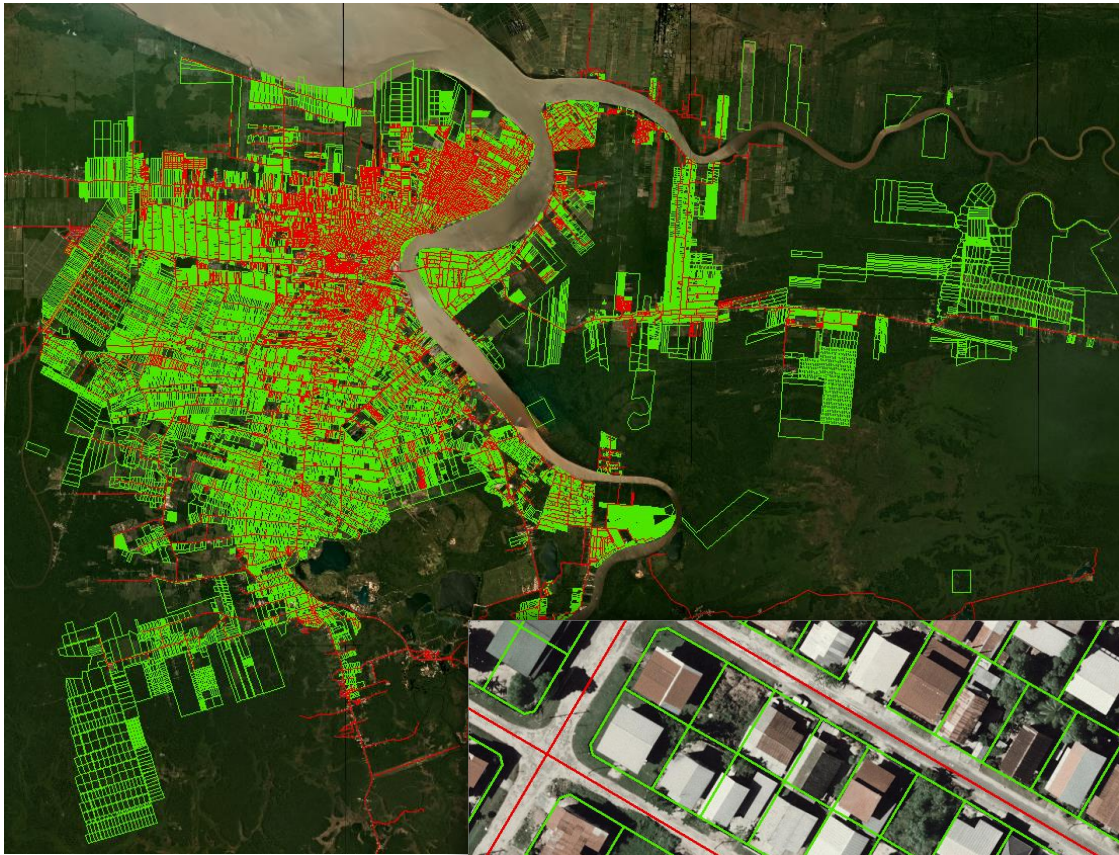
Steps taken towards the making of a new National basemap

1. Central Bureau for Air cartography (CBL) is by law incorporated within MI-GLIS (Gliswet 2009):
MI-GLIS wants to emphasize its role as an institute that provides accurate and reliable spatial data to society.
2. Setting up the National Geodetic Reference system (NGRS) for accurate (GPS)positioning of all topographic objects. (WGS_1984_UTM_Zone_21N)
3. Orthophoto's (10 and 20cm) (2006) to make:
 - Parcel layer (percelen online) and our streetlayer
4. Districts and resorts boundaries layers based on state decrees (staatsbesluiten) for districts and resort divisions
5. Country boundaries layer (based on different boundary laws and treaties)



Parcels and streets

- Parcel layer (percelen online) consultable via the MI-GLIS website
- Scales 1:1.000 en 1:2.000

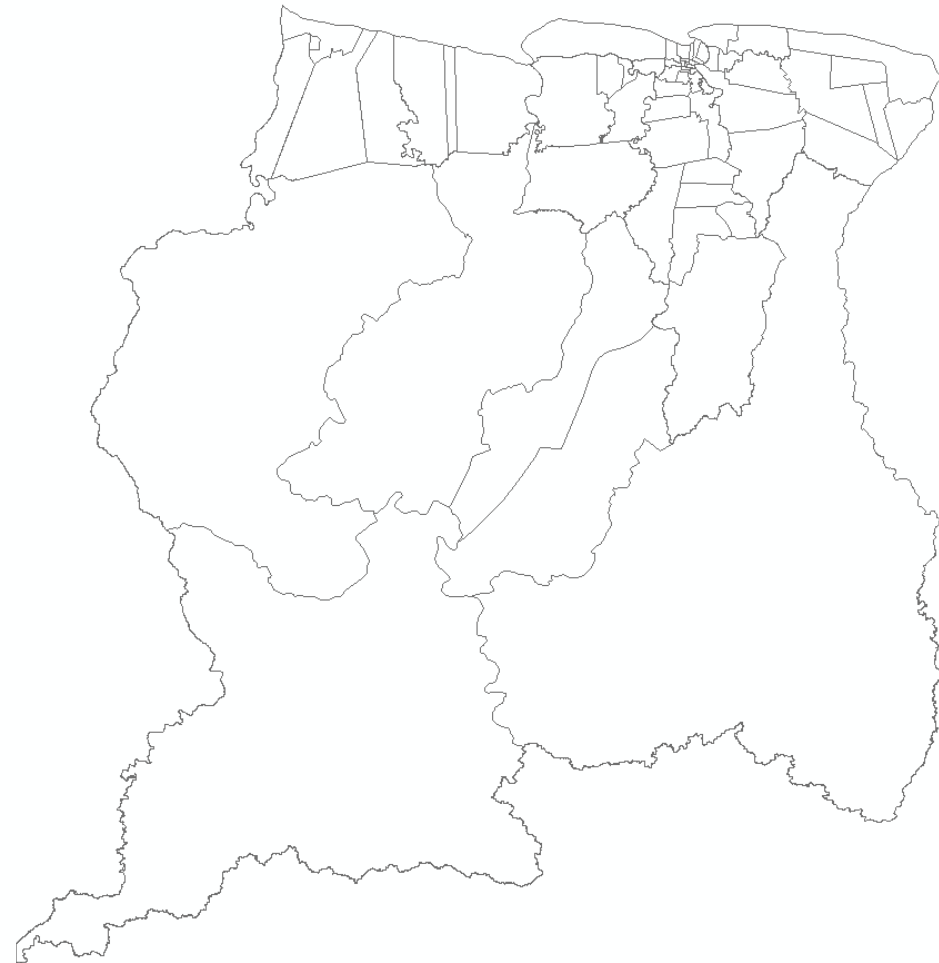


Plan

Districts and resorts



10 districts



62 resorts



Country

Country boundaries digitized based on:

- Planet scope images (4.77m)
- Agreed upon coordinates that are included in boundary treaties and laws



Further activities..

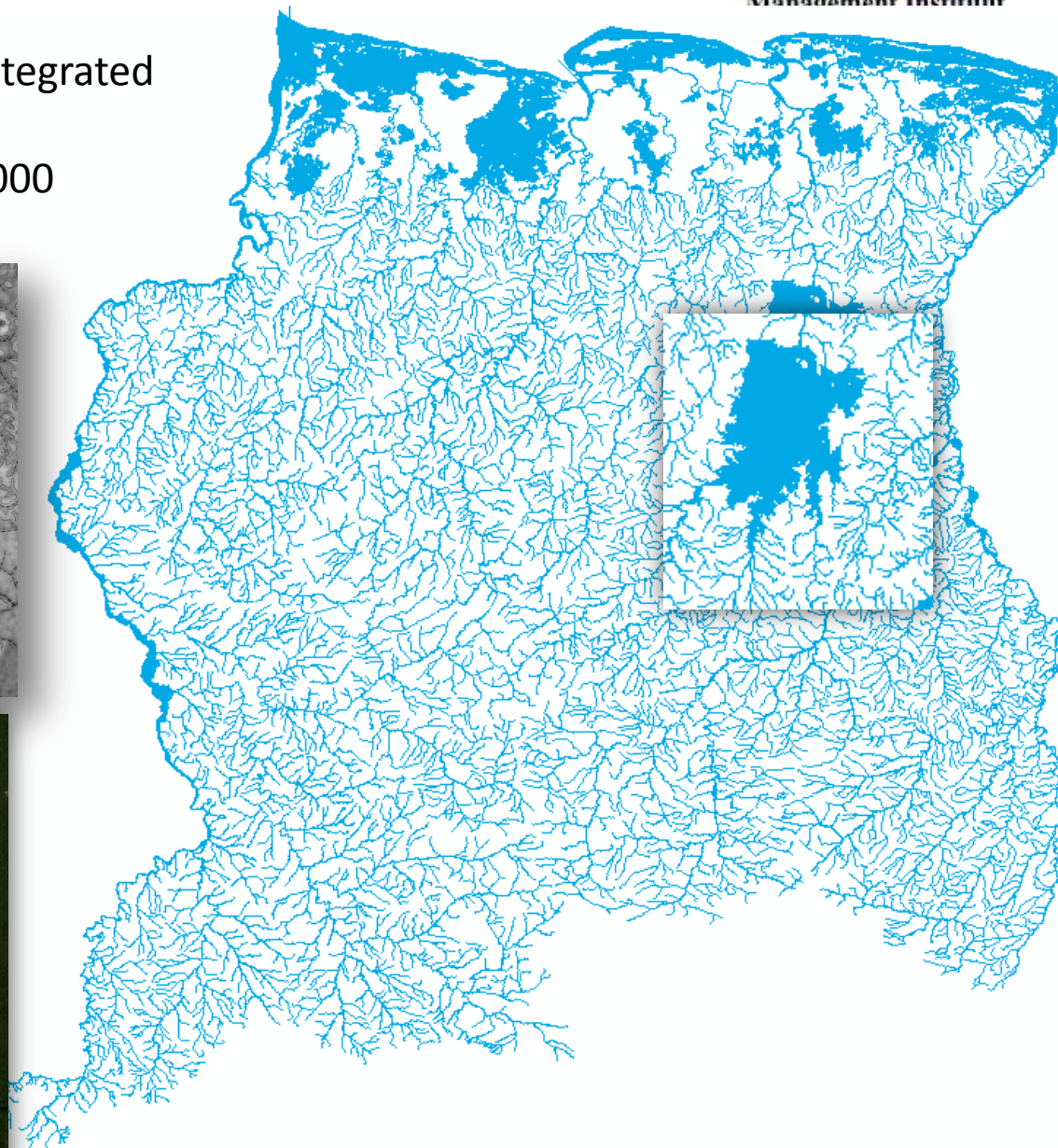
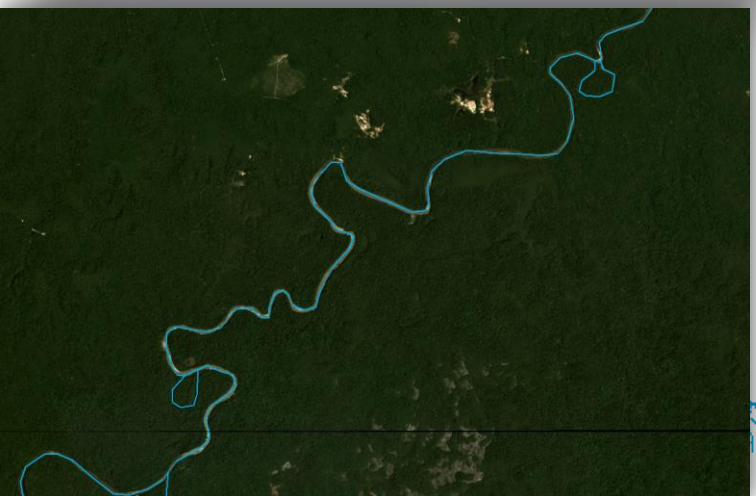
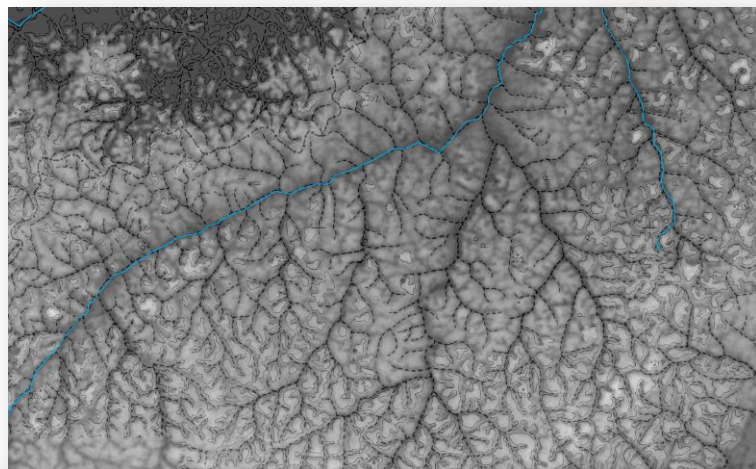
- Technical cartography training of personnel
- Participation in international mapping workshops (MIAS from PAIGH)
- Collaborated with Kadaster International: advice on remote sensing and production and implementation of a national basemap
- Since 2017 licensed to use Planetscope satellite images (4.77m) (coverage: whole country)



MIAS, 2017-2018

Example of work done for MIAS (Integrated
Map of South America)

Hydrographic network, scale 1:250.000



The National basemap themes and features

Theme	Feature
Boundaries	Country
	Districts
	Resorts
Hydrography	River (line)
	River (polygon)
	Lake (polygon)
	Ditch (line)
	Ditch (polygon)
	Channel (line)
	Channel (polygon)
Transport	Streets (line)
Buildings (population)	Buildings (area) (polygon)
	Building (point)
Vegetation	Forrest
	Gras/additional
Contourlines	
Toponyms (geographic names)	

The basemap standards

1. Primary source images: Planetscope (4.77m)

- **Other sources:**

- Landsat 8 NIIR (30m), Sentinel (20m)
- SRTM (30m),
- CBL map sheets georeferenced (1:50.000/ 1:100.000),
- Orthophoto's (10cm/20cm)
- Also digital globe images via WMS

2. Scale: 1:50.000

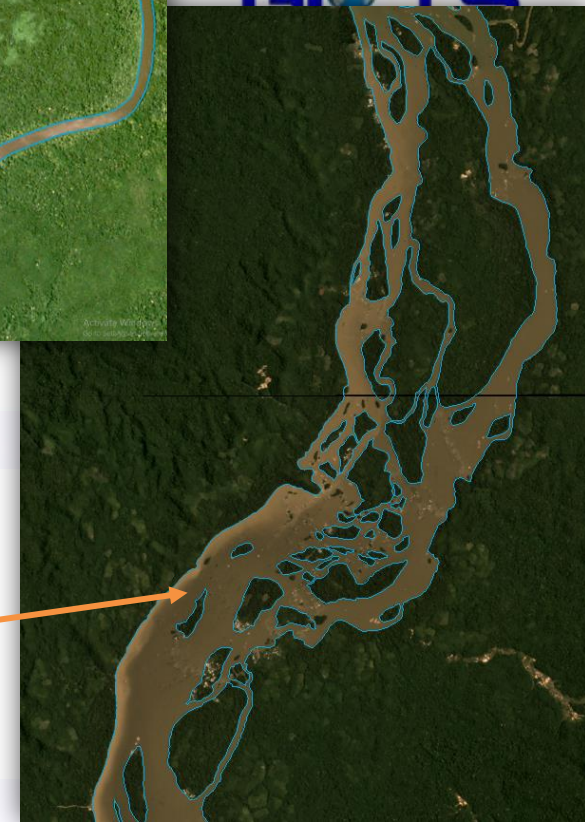
3. Extraction guide with digitization standards : now derived from the Multinational Geospatial Co-production Program (**MGCP** → ISO *requirements for the specification of geographic data products*)

4. Software: ArcGIS (ESRI)

5. Reference system and map projection: WGS 1984...



Method of digitizing data



Divided the country in a grid of cells of 110X110km (12.100km²)

Data is digitized per cell based on an extraction guide

Next steps (already working on)

- **Completing the description of the basemap production process:**
 1. Data preparation
 2. Data extraction
 3. Data validation
 4. Delivery
 5. Maintenance
 6. Further development
- **Meta data standards** : 'data about data': which sources have been used, who, when, how digitized?

Thank you!

