

NATIONAL INSTITUTE OF CARTOGRAPHY

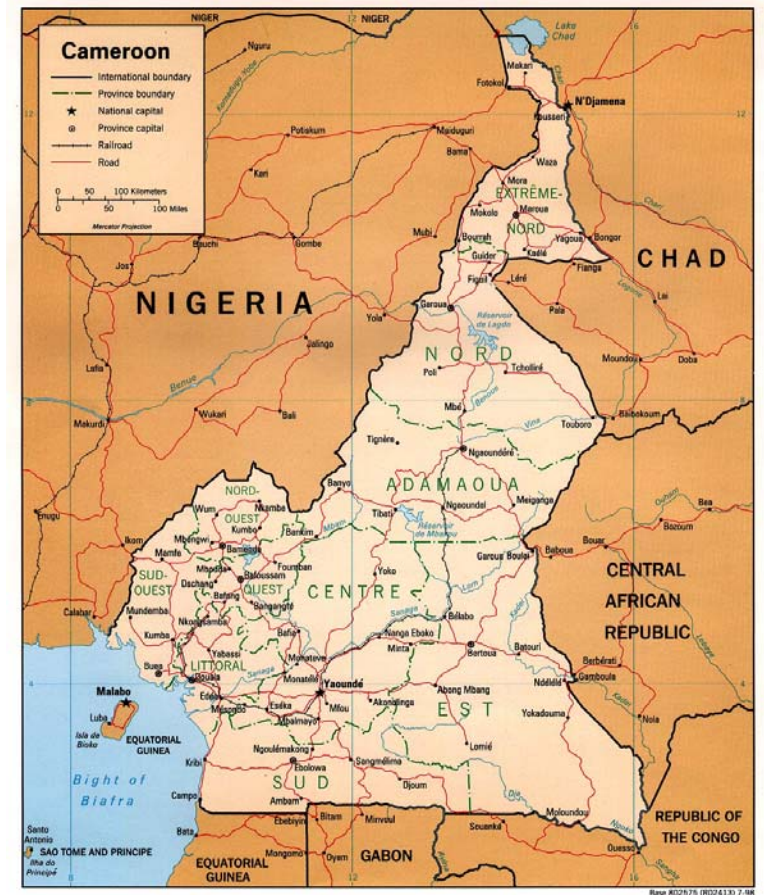


# GEOINFORMATION AND RISK MAPPING IN CAMEROON: SOILS LOSS MAP OF YAOUNDE



UN-GGIM Forum– 15-17 October 2013, Chengdu; China

# Cameroon Location



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## Football country, Samuel Eto'o



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# OUTLINES

- **STATEMENT OF PROBLEM**
- **SUSTAINABLE DEVELOPMENT AND PRESERVATION OF THE ENVIRONMENT PROGRAM**
  - OBJECTIVES
  - METHODOLOGY
- **CASE STUDY OF YAOUNDE**
  - SOILS LOSS AND ISSUES MAP
- **CONCLUSION**



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# STATEMENT OF PROBLEM

- - The prevention, management and monitoring of major risks and disasters are concepts poorly assimilated by the Cameroonian people
- - The occurrence of several catastrophic events in recent years especially in major urban centers have revived the issue of the day.
- - This allowed the reaction of the different actors in risk management, in particular the State which has committed a certain number of shares:
  - a. Implementation Plan Emergency Relief (Civil Protection)
  - b. Preventive campaign eviction of people occupying the unbuildable areas of large cities (Douala and Yaoundé)
  - c. Improving the regulatory framework by signing decrees texts that struggled to come into force.



- The most recurrent risks in Cameroonian cities are: erosion, floods, landslides, collapse of building, fire...
- National Risk Observatory (ONR) in 2003, and the National Mapping Agency, contribution in the field of environmental risks and ecological studies by data production (study of the deformation of Mount Cameroon, changing the fault line, water-Erosion risk ...)
- Despite the presence of the observatory that includes within it several administrations, lacks a coordinated approach to collecting and maintaining geospatial data and information

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**SUSTAINABLE DEVELOPMENT  
AND PRESERVATION OF THE  
ENVIRONMENT PROGRAM: Study  
and risk mapping and  
natural disasters in Cameroon**

**Geographic Research Division  
National Institute of Cartography**

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# OBJECTIVES



- Contribute to the control and management of natural hazards and disasters in Cameroon by the provision of information that improves decision making in prevention, mitigation or adaptation to natural disasters, to effect of setting up a national plan for risk prevention.

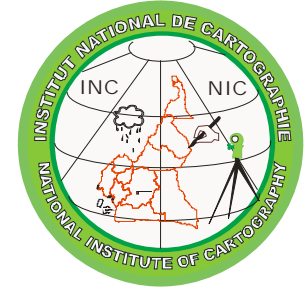
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**It is specifically to:**

- Implement risk infrastructure in Cameroon;
  - Produce risk area maps (general and specific) ;
- Have a spatial database on natural hazards in Cameroon

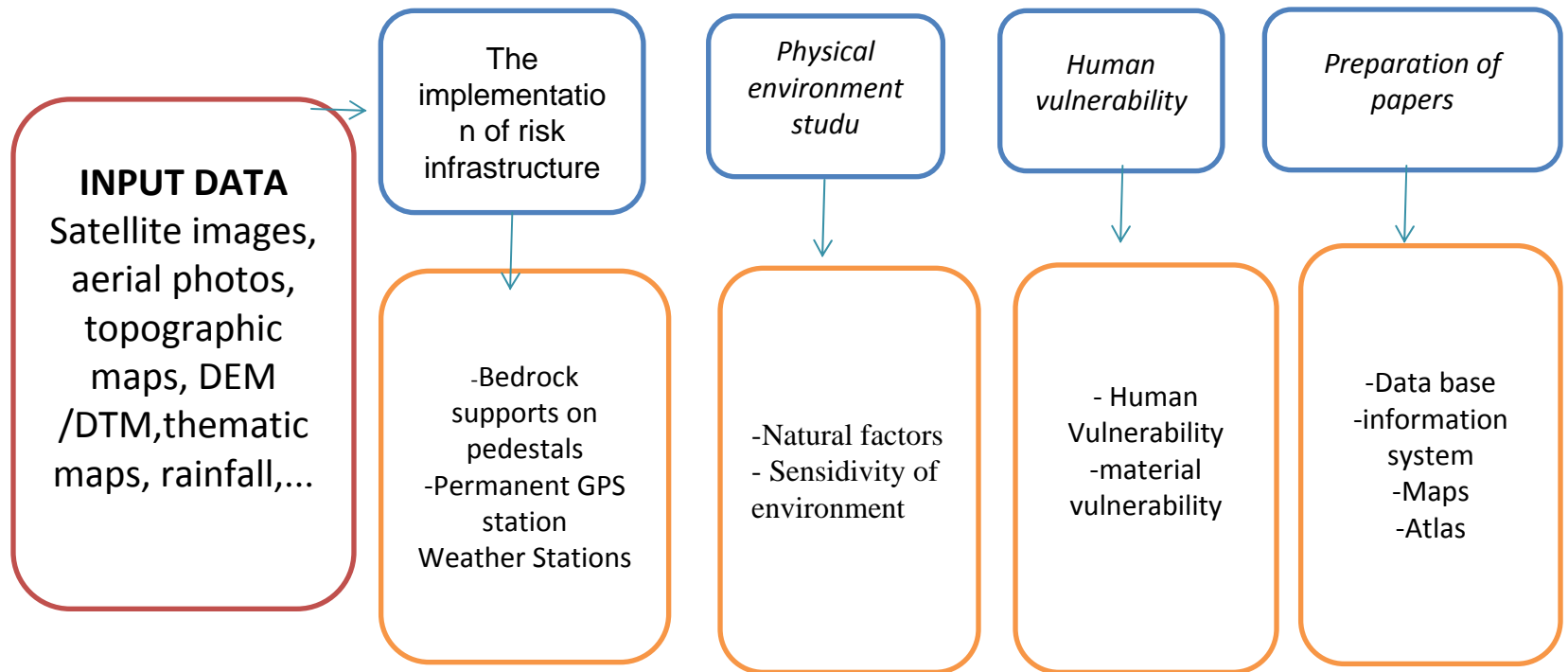
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# METHODOLOGY

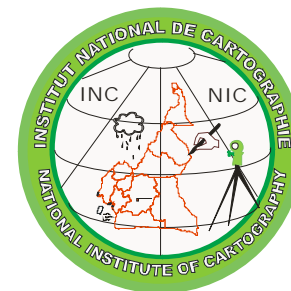


Based on the type of risk to study



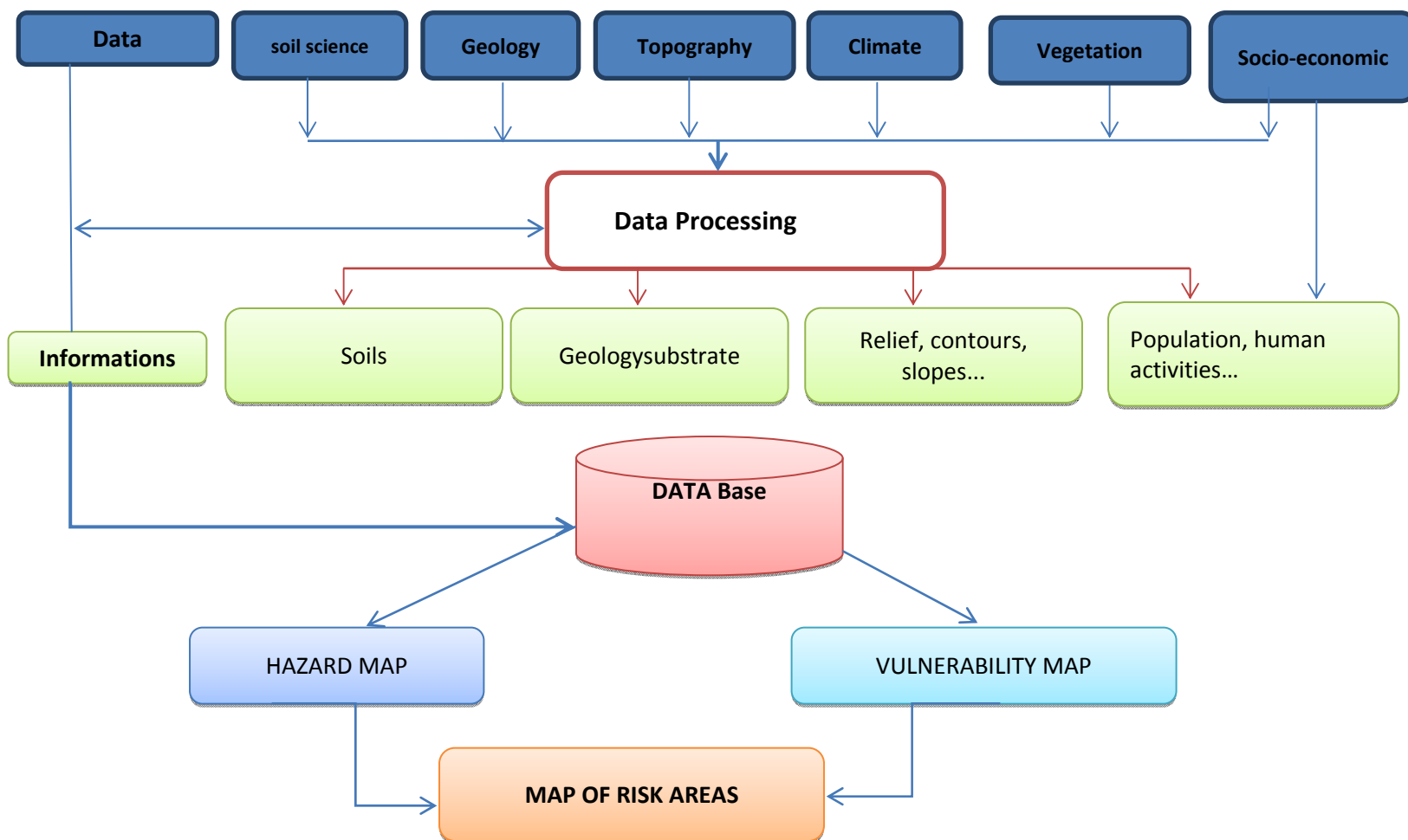
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# MODELER



## Inputdata

Satellite images, aerial photos, topographic maps, DEM /DTM, thematic maps, rainfall, Vegetation...



# CASE STUDY OF YAOUNDE

Yaounde city with 7 hills is located in the area of rainforest in bimodal rainfall and meets favorable conditions morphoclimatic rapid erosion. The rapid urban growth and rural exodus has led since the early 1990s in an anarchic occupation of non-constructible areas formerly hillsides and wetlands.





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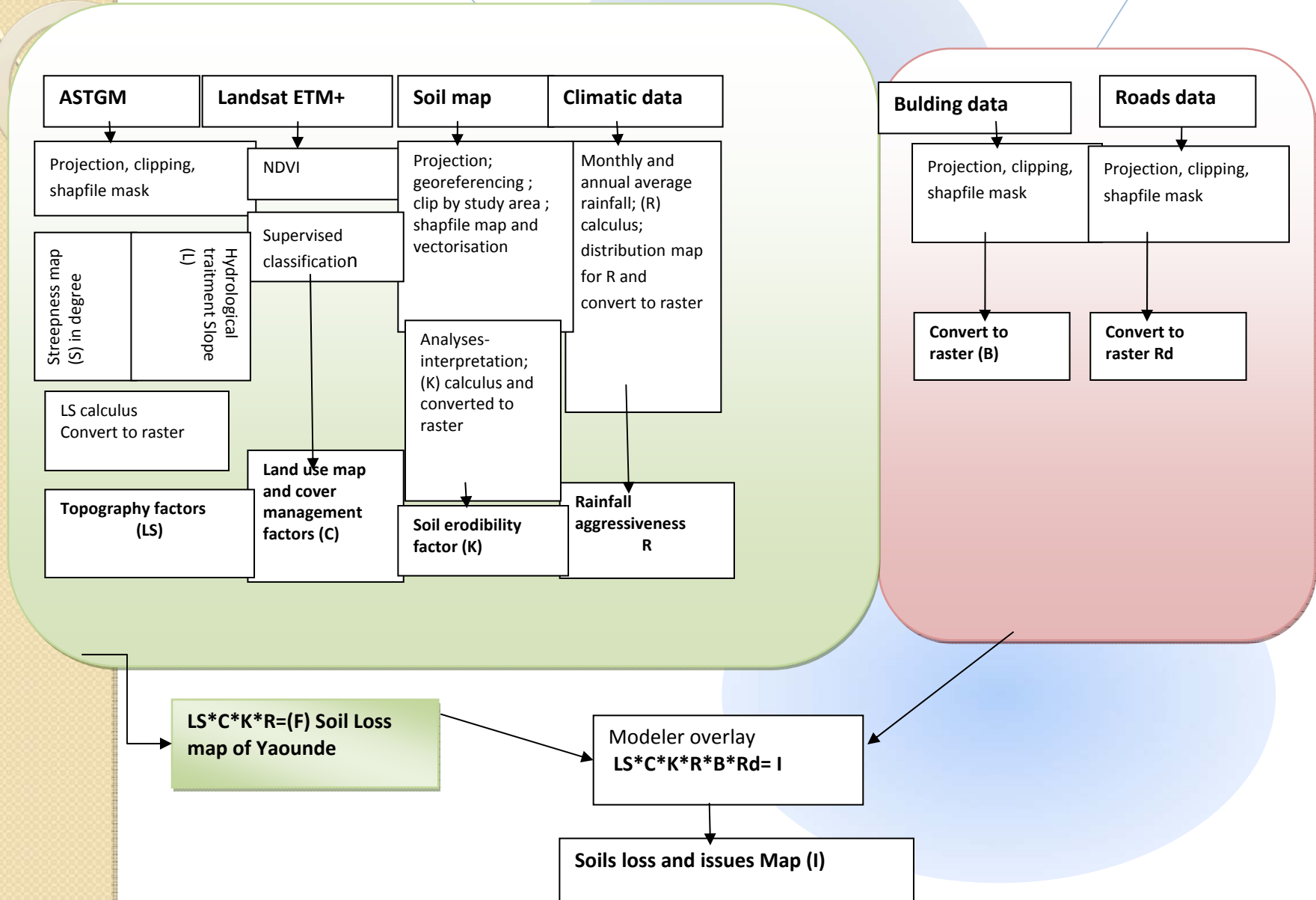
# DATA USED



Data	Nature	Scale/cell size/surface	Extension	Projection	Factor to be derived
ASTGM	Raster	30 m	.tif	GCS_WGS_1984	Topography factor (LS)
Landsat ETM+	Raster	30 m	.tif	WGS 84/UTM zone 32 N	Landuse (C)
Soils map	Raster	1:1 000 000	.jpg	WGS 84	Soil erodibility K (S, P)
Climatics data	Microsoft Excel table	/	.xls	/	Rainfall aggressiveness(R)
Bulding data	vector	/	shp	WGS 84/UTM zone 32 N	Mask (B)
Roads data	vector	/	Shp	WGS 84/UTM zone 32 N	Mask (Rd)

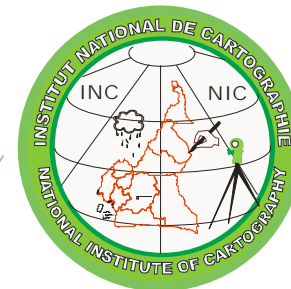
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# WORK FLOW DIAGRAM





# RESULTS



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# SOILS LOSS MAP OF YAOUNDE



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# SOILS LOSS AND ISSUES MAP OF YAOUNDE



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**Management of natural hazards in urban areas**  
**Engaging geospatial high quality and accurate data**  
**Identification of geospatial data producers (synergy)**  
**Topography, land use, surface runoff, drainage, road networks ... addressing, rapid response center,**  
**Compatible data and predictive models**

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# CONCLUSION

- We will continue to produce geographic information and refine our methods based on critical and user demand.
- We continue to count on the support of the UN-GGIM and the experiences of other countries.

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# THANK YOU

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