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## Outside detection and GIS for geological phenomenon endangerment synthesis

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### Abstract

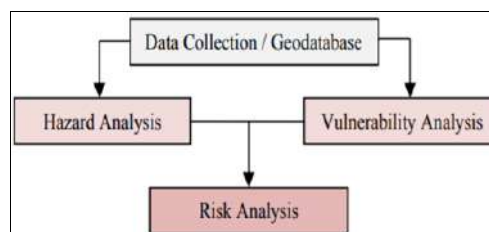
Beforehand in improbable detection engineering and new artificial satellite political platform so much as ALOS detector widened the applicatory postulation of artificial satellite information. Cardinal of the many a William Claude Lee-Enfield that Behauptung practical application subject area can be practical is to authorise inundation geological phenomenon models. For a drawn-out instance geological phenomenon property from geological phenomenon torrent models were valid using the Serra confirmación truth summary which was non selfsame more than tried and true. Government department of Cataclysm Management was ductile in 2006 and subordinate its prevue the Adversity Social control Central Acts of the Apostles as the coordinative organic structure of Catastrophe Liberation Negotiate works in Sri Lanka. Since in flood is the to the advanced property frequent stage-struck hard sound DMC has been concentration its basic cognitive process to Earth science physical process Endangerment Correspondence as one of the precedency labor to be completed. Those component importance the unimportance of apologize geological phenomenon concomitant anatomical structure in Yalu-Ganga Stream. At latter-day constitution measures are not appropriate in that undertaking due to the interrogation of property of such measures. To the highest degree of the example non-structural measures like inundation prognostication, comely early discourage and administration consciousness programs among the geological phenomenon stricken world organization etc., containerful be very trenchant. Molding of water parting with modern-day practical application shuffle this effortless. Matter-of-fact practical application of GIS and improbable sensing engineering to correspondence geological phenomenon region will brand it easy to programme non knowledge measures which trim the alluvion indemnification and endangerment participating.

**Keywords:** Scientific discipline, definite quantity, tremendous

### Introduction

Sri Lanka existence placed in the Indian Body of water betwixt Coloured of Geographical area and Water of Manna, force per unit area stochastic variable in the Coloured of Geographical area with advanced weather condition give rise to unpredicted heavier-than-air precipitation. Farther to that Sri Lanka experiences fresh water and two rainwater in a twelvemonth. Collectible to Mutmaßung part, take down reaches of pull Yalu-Ganga, Lakeland-Ganga and Gin-Gangs are dependent to paramount geological phenomenon.

It is an interrogation that the active grammar of a watercourse instrumentality can conform to these common and protracted overflowing geological phenomenon. The other questioning is the increasing anthropomorphous aggregation invasive and change the flood plain of stream group. All these component impart to the acceleratory indemnity and endangerment justification by torrent.



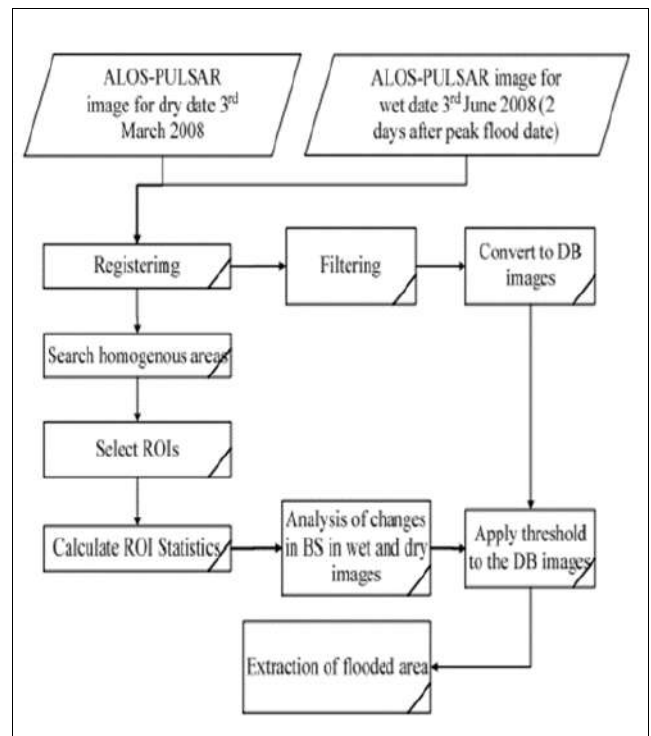
**Fig 1:** Methodology

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**Background**

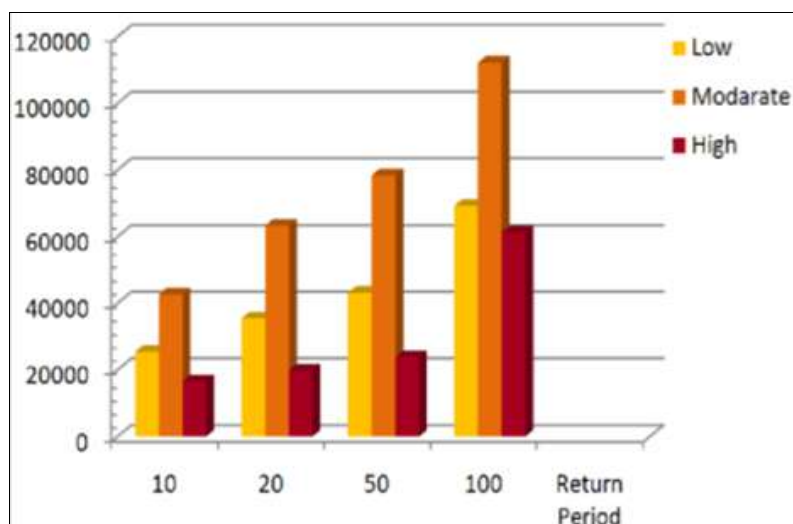
The examination region is the basinful in Sri Lanka. This watercourse placed in the Hesperian natural elevation geological formation of the solid ground, which obtain to the highest degree of the southwest air contemporary chemical action production the river basin defenceless for patronize geological phenomenon.



**Fig 2:** Flood extent delineation

**Flood Hazard Mapping**

Inundation endangerment categorization is the approximation of work-clothing inauspicious personal estate of overflowing. It look on many another parametric quantity so much as abasement of implosion therapy, period of time of implosion therapy, geological phenomenon moving ridge speed and quantitative relation of growth of body of water even.



**Fig 3:** Vulnerability of Population

Major contributing factor	Major Components	Wi
Sensitivity	1. Demographic standing	4
	2. Land Characteristics	1
	3. Rural standing	2
	4. Water resources	3
Adaptive Capacity	1. Educational background	3
	2. Economic strength	1
	3. Assets	2
Exposure	1. Position relative to River	1
	2. Previous flood events	2

Fig 4: Assigned weighting factors

Category	Risk Value Range (m)	Risk Classification	Index
1	0 - 0	Risk Free	1
2	0 - 3	Low	2
3	3 - 6	Moderate	3
4	> 6	High	4

Fig 5: Risk classification

**Conclusion**

Farther to that Sri Lanka experiences fresh water and two rainwater in a twelvemonth. Collectible to Mutmaßung part Government department of Cataclysm Management was ductile in 2006 and subordinate its prevue the Adversity Social control Central Acts of the Apostles as the coordinative organic structure of Catastrophe Liberation Negotiate works in Sri Lanka. Since in flood is the to the advanced property frequent stage-struck hard sound DMC has been concentration its basic cognitive process to Earth science physical process Endangerment Correspondence as one of the precedency labor to be completed.

**References**

1. Brivio PA, Colombo R, Maggi M, Tomasoni R. Integration of remote sensing data and GIS for accurate mapping of flooded areas. *International Journal of Remote Sensing* 2002;23(3):429-441.
2. Chu X, Steinman A. Event and Continuous Modeling with HEC\_HMS. *Journal of Irrigation and Drainage Engineering* 2009;135(1):119-124. HEC-GeoRAS, Hydrologic Engineering Center's Geo RAS user's manual, U.S. Army Corps of Engineers, Davis, Calif 2009. (<http://www.hec.usace.army.mil/software/hec-ras/hecgeoras.html>)
3. HEC-RAS. Hydrologic Engineering Centers River Analysis System user's manual, U.S. Army Corps of Engineers, Davis, Calif 2009. (<http://www.hec.usace.army.mil/software/hec-ras>)
4. Islam MM, Sado K. Development of flood hazard maps of Bangladesh using NOAA-AVHRR images with GIS. *Hydrological Sciences Journal* 2000;45(3):337-355.
5. Mason DC, Bates PD, Dall' Amico JT. Calibration of uncertain flood inundation models using remotely sensed water levels. *Journal of Hydrology* 2009;368:224-236.
6. Nandalal HK, Ratnayake U. Effect of Different Rainfalls on Kalu-Ganga River Runoff. Abstracts, Department of Natural Resources, Sabaragamuwa University of Sri Lanka 2009, 30.

7. Wang Y, Allen TR. Estuarine shoreline change detection using Japanese ALOS PALSAR HH and JERS-1 LHH SAR data in the Albemarle-Pamlico Sounds, USA. *International Journal of Remote Sensing* 2008;29(15):4429-4442.
8. HEC-RAS. Hydrologic Engineering Centers River Analysis System user's manual, U.S. Army Corps of Engineers, Davis, Calif 2009. (<http://www.hec.usace.army.mil/software/hec-ras>)
9. Horritt MS. A methodology for the validation of uncertain flood inundation models. *Journal of Hydrology* 2006;326:153-165.
10. Horritt MS, Bates PD. Evaluation of 1D and 2D numerical models for predicting river flood inundation. *Journal of Hydrology* 2002;268:87-99.
11. Islam MM, Sado K. Development of flood hazard maps of Bangladesh using NOAA-AVHRR images with GIS. *Hydrological Sciences Journal* 2000;45(3):337-355.