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UNAH
UNIVERSIDAD NACIONAL
AUTÓNOMA DE HONDURAS



MORAZÁN MRZ-SAT CUBESAT PROJECT FOR INTEGRATION OF THE CENTRAL AMERICAN NATIONS THROUGH COLLABORATION IN SPACE

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Background – Irazú Project, the First Central American Satellite



**Launch:
April 2nd 2018**

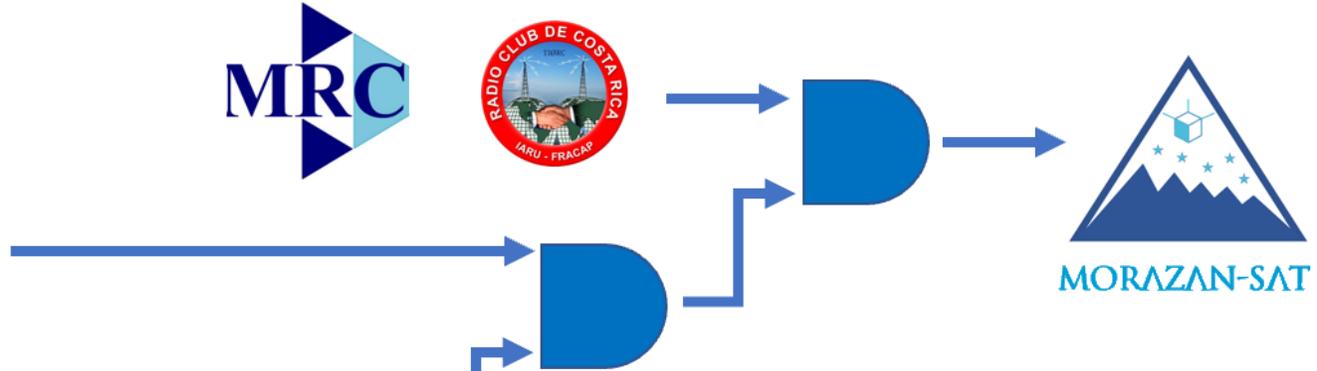


**Arrival to ISS:
April 5th, 2018**



**Deployment:
May 11th, 2018**

Irazu Project Summary: <https://www.youtube.com/watch?v=m7wh1-Sexr8&feature=youtu.be>



MORAZAN-SAT



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Project Management

Pre-phase A	Phase A	Phase B	Phase C	Phase D	Phase E	Phase F
Concept Studies	Concept & Technology Development	Preliminary Design & Technology Completion	Final Design & Fabrication	System Assembly Integration & Test, Launch	Operations & Sustainment	Closeout

Central America: a top risk region



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Guatemala
Rank 4
Exposure 36%
Vulnerability 54%



Honduras
Rank 30
Exposure 20%
Vulnerability 53%



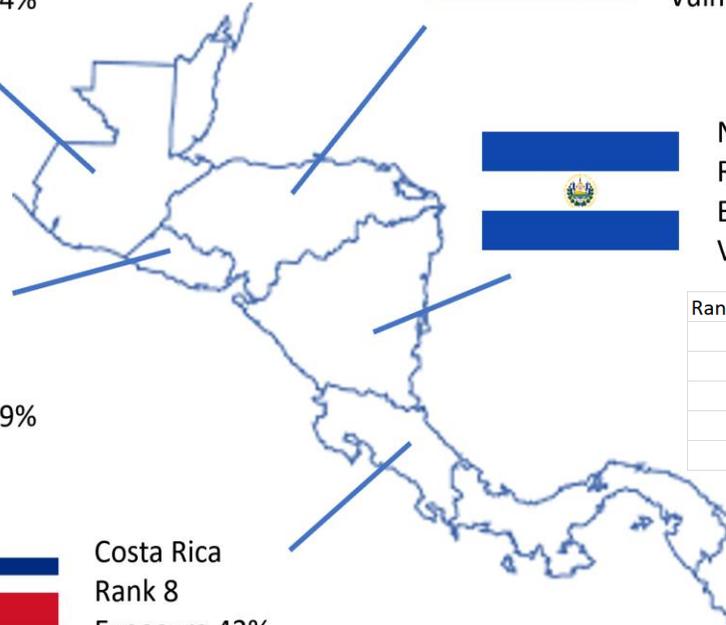
Nicaragua
Rank 14
Exposure 27%
Vulnerability 53%



El Salvador
Rank 11
Exposure 32%
Vulnerability 49%



Costa Rica
Rank 8
Exposure 42%
Vulnerability 39%



Rank	Country	WorldRiskIndex	Exposure	Vulnerability	Susceptibility	Lack of coping capacities	Lack of adaptive capacities
4	Guatemala	19.88%	36.30%	54.76%	35.82%	81.00%	47.46%
8	Costa Rica	17.00%	42.61%	39.89%	21.32%	63.78%	34.57%
11	El Salvador	16.05%	32.60%	49.25%	27.84%	74.78%	45.14%
14	Nicaragua	14.62%	27.23%	53.69%	33.67%	80.70%	46.71%
30	Honduras	10.68%	20.01%	53.36%	33.29%	81.00%	45.78%

World Risk Report 2016 ranking for Central America Nations. Source Institute for Environment and Human Security of the United Nations university

Scientific Mission with a Social component



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Risk = Exposure to hazards × Vulnerability



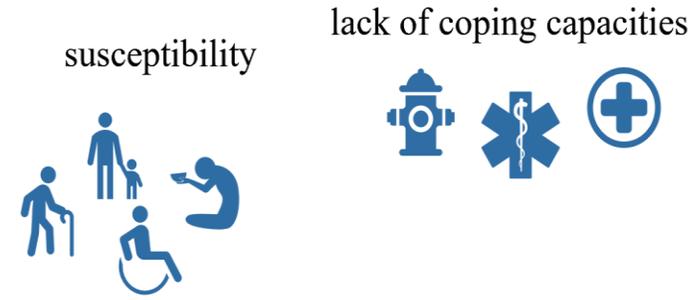
hydrometeorological



seismic



Wild fires



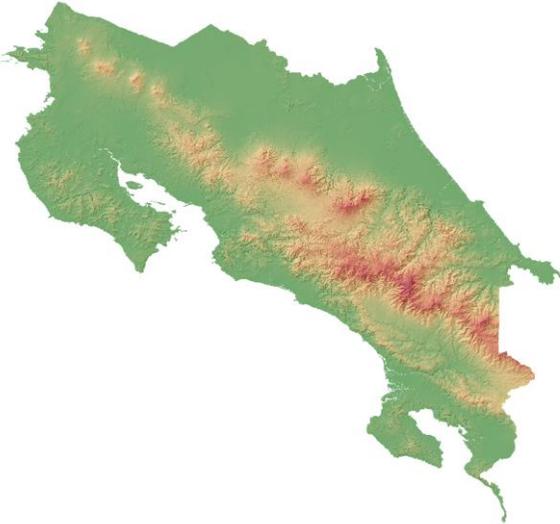
susceptibility

lack of coping capacities

lack of adaptative capacities



Topography

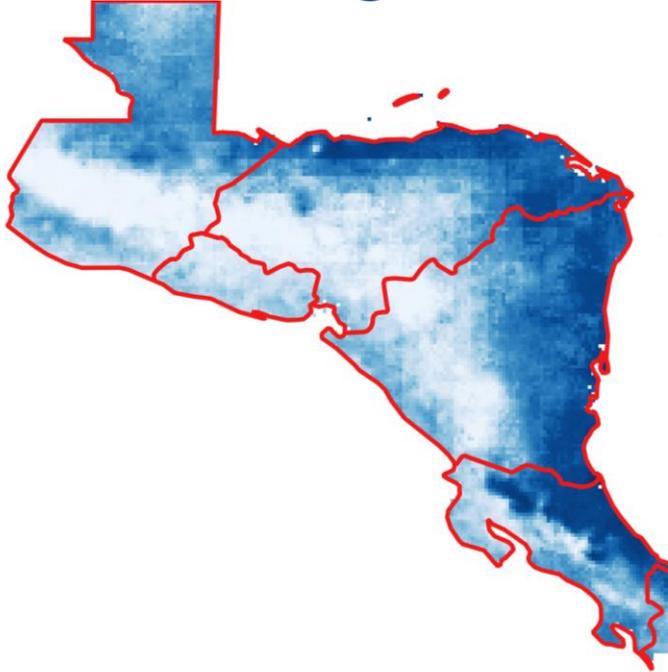


Land Use



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Meteorological



Mission Concept 1:

Monitoring weather variables in vulnerable remote areas providing early warning during extreme weather events.



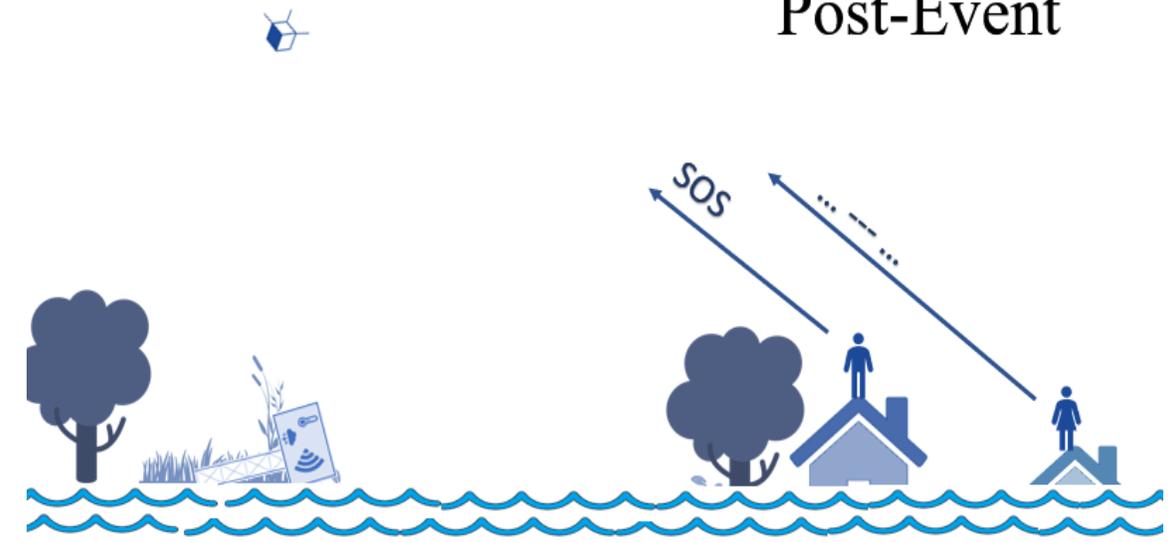
Pre-Event
and during
Event

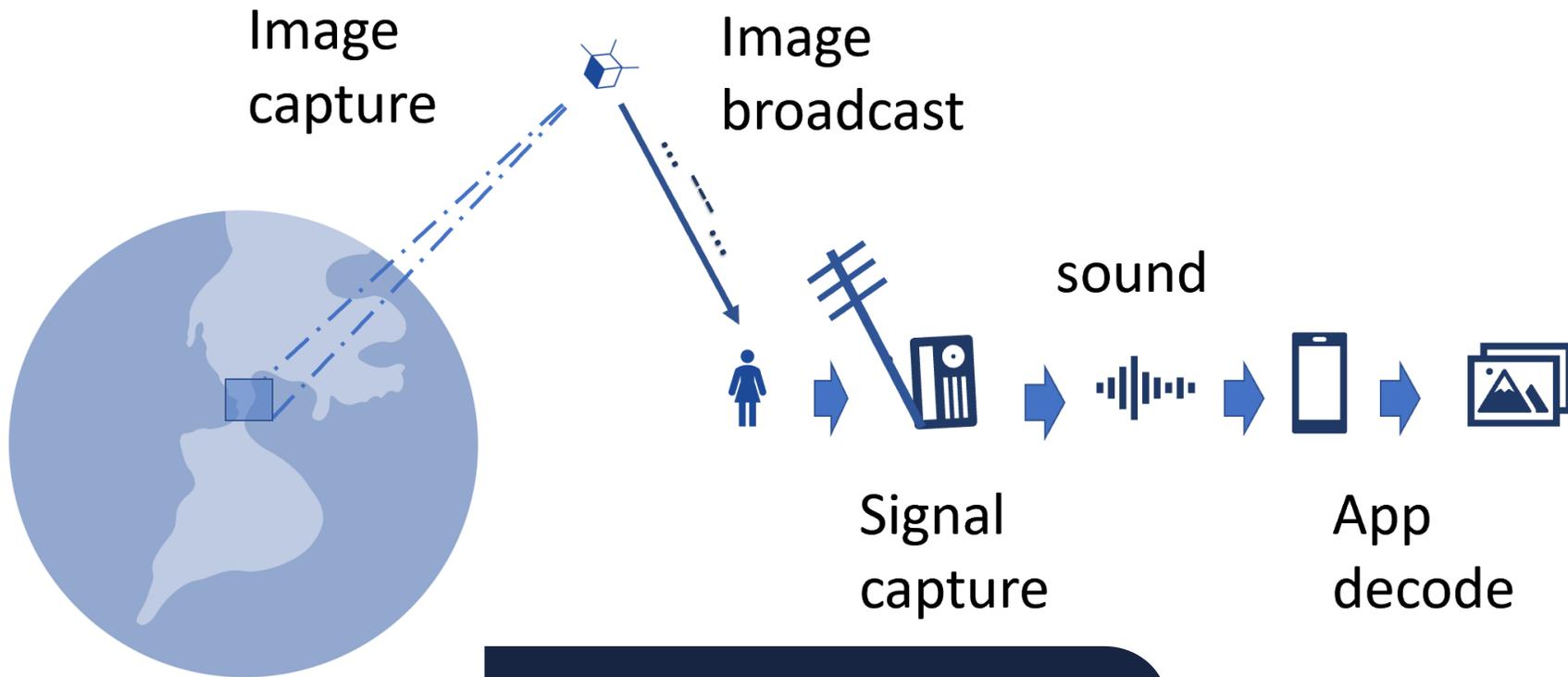


Mission Concept 2:

Images transmission testing using a combination of cellphone and handheld radios in post-event situations.

Post-Event





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Mission Concept 3:

Students from schools learn how to track the satellite using data from internet and a homemade yagyi antenna coupled with a 2 meter radio (walkie talkie), they can download a sound file of the image and later decode it using open source software or smart phone apps.



MRZ-Sat will be a paragon model of cooperation among emerging nations, in a region that has the right to dream with a better future.

Joins us in this dream!
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